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LIAJA provides leadership in the development, promotion and mobilization of personnel, institutions and resources in the information field in order to encourage learning and facilitate access to information.

CONTENTS

The Library and Information Association of Jamaica's Professional Development Workshops for School Librarians

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Abstract

Purpose: The Ministry of Education, Youth and Information, Jamaica, provides ongoing professional development for teachers generally, but not for teacher librarians in particular. The Schools Section of the Library and Information Association of Jamaica (LIAJA) attempts to fill the need in this area by providing professional development workshops for Jamaican teacher librarians. Evaluation is an important aspect of any programme. In this regard, this paper seeks to review three professional development workshops aimed at improving teacher librarians' technological skills and thus enhance support to 21st century learners. This paper also provides an alignment of topics from the workshops with some of the essential skills for the 21st century learner as advocated by the American Association of School Librarians (AASL).

Methodology: Through participant observation and survey, this paper described and evaluated three professional development workshops, held 2016-2017, for Jamaican teacher librarians, also referred to in this paper as school librarians.

Findings: The data showed that the training was aligned with the needs of the majority of the school librarians, as they learnt new skills and updated existing ones.

Research Limitations / Implications: The findings revealed that there is a need for ongoing professional development for school librarians in Jamaica, and that this need is being met to some extent by LIAJA. However, the extent of this need and the effectiveness of the Association's overall efforts in meeting it, can be further explored; as an example, an evaluation of the impact of professional development for school librarians on students could be investigated.

Originality/Value: This is the first scholarly publication on in-service training for Jamaican school librarians from the perspective of the national library association; in this regard, it begins to fill the gap in the literature in this area. It is therefore useful for benchmarking and lesson drawing for future professional development workshops in Jamaica.

Keywords: School librarians, teacher librarians, professional development, school libraries, Library and Information Association of Jamaica, LIAJA

Paper Type: Research paper

Introduction

The Jamaican education system as a microcosm of the wider society, is embracing advancements in technological developments in significant ways to the extent that there seems to be a degree of paradigm shift (Chomal and Saini; Sheard and Carbone). As a result, much has been said and written about the 21st century learner and 21st century learning. This leads one to question what these terms mean, and how these learners differ from those of the previous generations. It should also lead to reflection on the changes which are necessary in the way school library services are delivered within the context of the new learner and new learning.

These 21st century learners, also called new millennium students (a term coined by Pedro as cited by Jones and Shao), are expected to be proficient in the use of multiple literacies, (refer to figure 1), since these literacies become necessary for daily life in what is being termed the information society.
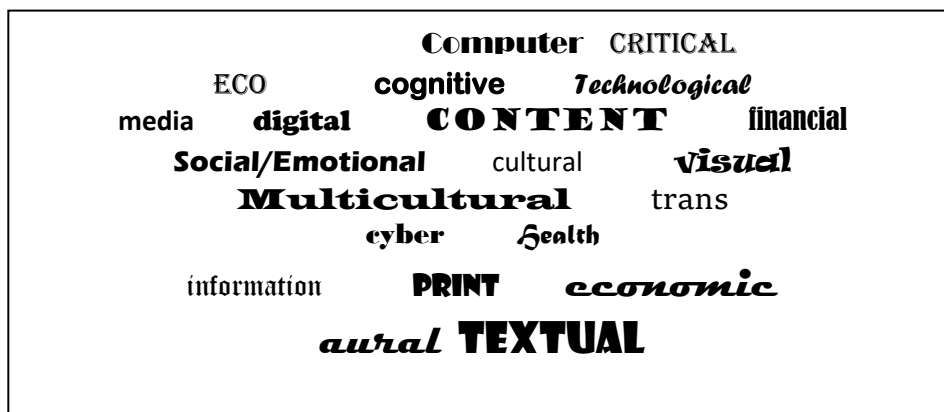
Fig. 1. Types of literacy

Multiple literacies, also called multiliteracies (a term developed by the New London Group) is built on traditional literacy (krist2366). Blake posits that the term can be defined from two perspectives, referring to either "the way language is constructed and how meanings vary across different cultural or social contexts" (para. 3) or "the way that understanding and knowledge is often best gained and reflected through multimodal representations" (para. 4). To further clarify the term, the New London Group explains that multiliteracies accept and encourage "a wide

range of linguistic, cultural, communicative, and technological perspectives and tools being used to help students better prepare for a rapidly changing, globalized world" (krist2366 para. 4).

The shift in focus from print literacy to multiple literacies will have significant repercussions for school libraries in Jamaica, which were originally established to provide resources for recreational reading (Bennett 254). A divergence from a single literacy to multiple literacies will also signal the need for school libraries to acquire and provide access to resources in new formats. In order for librarians to manage these new resources and teach others to use them, they will need new sets of skills. These new resources and new skills will position the school library to equip "students with life-long learning skills and develop the imagination, enabling them to live as responsible citizens" (IFLA/UNESCO para. 1).

The tech savviness of learners, new learning and teaching styles driven by the proliferation and use of Information Communication Technologies (ICTs), and new methods of teaching supported by ongoing research in education have resulted in what is now called 21st century learning. The Centre for Educational Research and Innovation (CERI) cites the following succinct description of factors fuelling the changes from the Organisation for Economic Co-operation and Development (OECD):

> The explosion of knowledge about the brain and the nature of learning, combined with the growing power of technology, create the potential to transform even the most fundamental unit of education - the interaction of the teacher and the learner. Moreover, huge social changes, such as growing diversity and population mobility, present educators with new and constantly changing circumstances. As a result, the characteristics which defined the successful education systems of, say, 1975, are unlikely to be those which will define success in the future (2).

This technology rich learning environment becomes a catalyst for education practitioners to either improve their skills and remain relevant or become obsolete in a world that has little use for educators (including school librarians) who are still teaching the same way teaching was done in the 20th century. These changes need to be given consideration because the emergence of a new paradigm usually means the old way of operating is no longer viable. In addition, lifelong learning cannot be facilitated if school libraries operate in the old paradigm.

A comparison of education in the two centuries will help us to visualise the importance of retooling the school library and the librarian so they remain relevant in an era when the only thing that is certain is change. Table 1 provides an abridged comparison of the 20th and the 21st century classroom, as presented by 21st Century Schools ("20th Century Classroom").

Table 1

Comparison of 20th and 21st Century Education as presented by 21st Century Schools

Environment	20th Century Classrooms	21st Century Classrooms
Physical Environment	• Four walls • Teacher directed	• Variety of learning spaces • Student centred
Emotional Environment	• Low student motivation • Low expectation • Curriculum is meaningless to students' experiences • Students must raise their hands and speak one at a time	• Students and teachers are co-learners • High level of motivation and student freedom • Connection between the curriculum and real life experiences • Sound of learning, teaching, researching, designing and creating
Academic Environment	• Passive learning driven by textbooks • Focus on the memorisation of facts • Curriculum is fragmented and geared toward the preparation for tests • Activities are time-based • Diversity in students is ignored • Learning is print based	• Active learning that is research driven • Students construct knowledge and conduct research. • There is an integrated, interdisciplinary curriculum • Student diversity is embraced • Multiple literacies • Technology serves as tools and vehicles which support the curriculum

Table 1 reveals that education is undergoing fundamental changes that will impact every sector from the early childhood to the tertiary level; the school library cannot escape the consequences of these changes.

Twenty first century schools are the places where 21st century teaching and learning take place. Kay is of the view that traditional schools can be transformed into 21st century institutions by

following these steps:

> Step 1: Adopt Your Vision
>
> Step 2: Create community consensus around the 4Cs
> (Critical Thinking, Communication, Collaboration and Creativity)
>
> Step 3: Align your system to the 4Cs
>
> Step 4: Use the 4Cs to build professional capacity
>
> Step 5: Embed the 4Cs in curriculum and assessment
>
> Step 6: Use the 4C's to support teachers.
>
> Step 7: Improve and innovate: Create a 4C's organization.

In its efforts to modernise the Jamaican education system, the Ministry of Education, Youth and Information, Jamaica, implemented the New Standards Based Curriculum during 2016-2017. This curriculum has been described in a training PowerPoint developed by the Ministry of Education, Youth and Information as a "dynamic, challenging, inspiring and inclusive curriculum for the 21st century learner", which embraces 21st learning skills (4Cs). This new curriculum signals the move from traditional to 21st century education. This curriculum will impact every agency within the school including the library. Cooke advocates "the most productive and effective way for school librarians to keep up with these changes is to seek out professional development opportunities" as they need to be "as savvy as the clients they serve" (2).

One of the significant differences between 20th century and 21st century education is changes in modes of assessment. Traditional forms of assessments, which were teacher-structured, involved selecting a response at the level of recall, appeared contrived and only provided indirect evidence of learning (Mueller), are now being complemented by authentic assessment. The latter, also referred to as direct performance or alternative assessment, requires students to "perform real-world tasks that demonstrate meaningful application of essential knowledge and skills" (Mueller para. 1). CERI argues that compared to traditional assessments such as achievement tests and examinations, other types of assessment are far less popular. Authentic

assessment has significant implications for the school library and Callison notes that the school librarian is "in an ideal position to help teachers shift from textbook and multiple-choice exams to alternative techniques such as projects, exhibits, and multimedia productions" (4). This statement, made almost two decades before the use of ICT in education became so pervasive, would be even more relevant at this time. The librarian can be viewed as a valuable partner in 21st century learning; however, Jamaican school librarians may need assistance and training in developing the vital skills for participation in 21st century education, as this represents a departure from their traditional roles.

The relevance of the school library, and by extension the librarian, will depend on its ability to provide "information and ideas that are fundamental to functioning successfully in today's information and knowledge-based society" while simultaneously helping students to develop lifelong learning skills (IFLA/UNESCO para 1*).* The demands of the manifesto made almost two decades ago, become even more relevant as shifts in the way knowledge is created, stored, distributed and accessed have challenged the importance of libraries to society (Denning). To remain relevant and to play their roles in fulfilling this manifesto, school librarians have to embrace technology and become proficient in its use. Librarianship is a profession with a "rapidly changing knowledge base" (Reitz 531) due to the impact of technology. Professional development is important as it "fulfils a need for continuing acquisition of knowledge and competencies that have not been met by either formal education or on-the-job training" (Pan and Hovde 1).

This research focuses on the activities of the Schools Section of LIAJA which is mandated by the association to provide two national professional development workshops for school librarians annually. Whereas the local association has not yet begun to focus on developing guidelines, recognition systems and certification processes, it has been engaging in identifying topics and learning needs, coordinating continuing education efforts and disseminating information for these through its various sections as advocated by IFLA. These activities are also carried out by the Schools Section which comprises library personnel employed in primary and secondary school libraries. This paper therefore aims to: (1) examine the need for professional development of school librarians; (2) describe the training provided by LIAJA for

2016 and 2017; (3) present and briefly discuss evaluation data from the workshops; (4) and outline how the knowledge and skills from these workshops can be used to support 21st century teaching and learning.

Background

The Jamaican Situation

The results of a survey of 209 school library personnel in Jamaica indicated 25.3% were teacher-librarians while the others possessed a range of qualifications from secondary and tertiary institutions (Shelley-Robinson 109). These were One Person Librarians (OPL) defined as "professionally qualified library and information professionals who either work as the sole information provider in their organisations or with clerical non-professional staff as support" (Hornung 1950). They were recruited by individual schools and may be attached to either the teaching or administrative staff. Described by Hornung as "all-rounders", OPLs are required to have the ability to perform a number of tasks. Discussing the conditions of work of these school librarians, Shelley-Robinson explains that the OPL is the norm in the Caribbean and usually results in complaints of overwork.

Jamaican school librarians occupy a unique position in the school system with respect to professional development. Whereas ongoing professional development is provided for teachers, the Ministry of Education, Youth and Information, through its regular professional development mandate, does not provide specialised, ongoing professional development for these OPLs. This is not a reality only in the Caribbean, as Murray found this to be true in Australia as far back as 2000. Whereas this model has changed in most developed countries, some developing countries such as Jamaica continue to struggle with the challenges of providing ongoing professional development for school librarians. There are two organisations in Jamaica which provide specialist (librarian) professional development for school librarians. These are the Jamaica Library Service (JLS), an agency of the Ministry of Education, Youth and Information, with responsibility for the Schools Library Network (SLN), and the Schools Section of LIAJA, the national association for information professionals.

The Teacher-Librarian in the Jamaican Education System

Some primary schools and the majority of secondary schools have libraries, and hence library personnel are present in these institutions. Personnel is recruited by the school and paid by the Ministry of Education, Youth and Information and may be attached to either the academic or administrative staff based on the post which is available on the establishment. The Schools Library Network provides all school libraries, except those in traditional high schools, with the majority of their resources and technical support. Traditional high schools are responsible for their own library provision. School administration provides daily oversight of the school libraries, which are inspected by the National Educational Inspectorate every three years when schools are inspected. Shelley-Robinson, citing Warmington, noted that funding for the training of school library personnel was a challenge, and the current harsh financial climate has not been favourable to providing financial resources to meet the needs of these librarians for ongoing professional development. To fill this gap, LIAJA, in its capacity as a professional association for librarians, offers training to school library personnel. This training is usually aligned with their roles and responsibilities in implementing the schools' curriculum.

LIAJA and Teacher Librarians in Jamaica

School libraries in Jamaica are staffed by four categories of personnel: teacher-librarians dually trained in both education and librarianship, some of whom have graduate degrees; librarians with no training in teaching; teachers with no training in librarianship; and individuals with no formal training in either teaching or librarianship (Shelley-Robinson 108). In concurring with this, the JLS reported that most of the school libraries continue to be managed by teachers, who do not have the requisite training in librarianship (150). Mitchell and Weldon report that in Australia, there is a similar scenario with some libraries being staffed by teachers. Professional development is especially critical in an environment where the personnel are diverse and the skills base varied. The attendance at the workshops therefore reflected this variety.

Literature Review

This review examines the importance of ongoing professional development for school librarians. It outlines some considerations for professional development for Caribbean teachers discussed in

the context of the school librarian and discusses the research related to the school librarian as a leader in technology.

The Importance of Ongoing Professional Development

The developments in technology and their subsequent incorporation into libraries in general and school libraries in particular, necessitate that librarians, some of whom left training institution a decade ago (Baker-Gardner and Stewart), retool in order to assist in the delivery of 21st century education. The best way to ensure that this is accomplished is by providing targeted professional development which meets their needs and provides them with the specialised skills necessary to effectively execute their roles. Professional development has been defined as:

> "[f]urther study undertaken during employment by a person trained and educated in a profession, sometimes at the initiative of the employer, but also through voluntary attendance at conferences, workshops, seminars, or enrolment in post-graduate courses, particularly important in professions that have a rapidly changing knowledge base" (Reitz 531).

Professional development is critical in education and is vital in helping school librarians serve their constituents.

Much has been said about the need for technologically driven instructions for the 21st century learner. While Jones and Shao conclude that learners "actively engage a variety of different applications and services" (42), they also indicate that the need of these learners for the inclusion of technology in the teaching and learning process, is not as radical as it was when perceived by advocates such as Prensky. The Center for Educational Research and Innovation lends support to this finding by making the point that the argument that "there is insufficient evidence that ICT use does have an incontrovertible impact on standards" is "undermining ... the educational arguments for imaginative ICT use in schools" (6). School librarians however, act as the chief information officers in their schools, and are therefore required to harness technology and use it to deliver services, considering technology has significant impact on the acquisition and dissemination of information.

Jones and Shao argue, based on empirical data, that these learners are diverse and attempts to place them in generational cohorts might be challenging since it would be difficult to define these cohorts. They further point out additional factors such as gender, mode of study, and national origin which combined with age (the most significant factor), defined students' engagement with technology (Jones and Shao). These researchers also found that while university students do not necessarily demand a change in pedagogical methods, they might be receptive to an increased use of technology by faculty and new ways of working, if these were well integrated into teaching and learning. Cooke agrees that the roles of libraries and the users they serve are changing simultaneously. Professional development will therefore be needed to help library personnel come to a better understanding of the users they are serving so they can deliver the services that are required.

There are two motivating factors stimulating the need to provide professional development for librarians: the rapid change in technology (Pan and Hovde, Mersand) and the fact that librarians are compensated based on knowledge and skills (Pan and Hovde). Brown, Dotson and Yontz's conclusion that much "of what the research says about effective professional development for teachers applies to school library media specialists" (56) is relevant to this discussion. Mark, Joseph and Remy in their examination of the state of teacher education in the Caribbean and addressing the need for continuous professional development postulate: "[I]t is in this in-service stage that the need for re-visioning is most urgent" (16). This is also true in school librarianship, as skills, particularly technology skills, need frequent upgrading. Therefore, in discussing the importance of professional development for school librarians, one can draw from the conclusion of Mark, Joseph and Remy that the "ultimate aim of in–service professional development of teachers [and school librarians] is the enhancement of student learning" (40).

The International Federation of Library Associations (IFLA) in its discussion on the importance of continuing education for librarians, argues that practising librarians need to "maintain competence" in a changing society and this can be done through workshops and short courses. Dotson and Brown, in support of the need for ongoing professional development, add that it ensures school librarians are "able to directly impact upon the learning of countless students" (7). They also conclude that the best way to ensure effectiveness, is to provide professional

development "that is of high quality, is systematically designed, fully embedded in the teachings of librarians, and infused with interaction among colleagues" (7).

Mark, Joseph and Remy further emphasise the need for ongoing professional development by stating:

> [N]ot only must teachers [and in this case teacher-librarians] be proficient at addressing the learning needs of diverse students but they need to function effectively in the current climate of exploding knowledge, rapidly changing information and communication technology, and an increasingly turbulent social climate (36).

Based on this premise, Stephens argues that school librarians need more professional development than other teachers in order to "to stay ahead of the curve to support the needs of students and teachers" (para. 2). In addition, they need to be knowledgeable about the latest books and technology. Stephens emphasises that school librarians need professional development in their areas of specialisation, and they also need to attend professional development activities that are meant for the teaching staff. This position is shared by the Chartered Institute of Library and Information Professionals (Shaper).

Considerations for Professional Development

From a synthesis of research on what constitutes successful professional development practices, Mark, Joseph and Remy propose eight considerations for planning effective in-service training for teachers that are relevant to this discussion. The activities must: be teacher–driven; be ongoing, sustained and adequately resourced; deepen content knowledge and/or pedagogy; be driven by student needs; promote equity for all students; use strategies of adult learning; build broad based support; and include a programme evaluation component (38–39). In addition, Mark advocates that varied opportunities should be provided for teachers to enhance professional competences such as "school-based collaborative interactions, peer coaching, seminars, and workshops, professional conferences and participation in formal education courses and programmes" (20).

There is strong support in the literature for the provision of professional development for librarians by the professional associations (Robinson and Glosiene; Pan and Hovde; Hornung;

IFLA). IFLA guidelines for professional development outlines the following responsibilities of professional associations in regard to professional development:

- Develop guidelines, recognitions systems, certification/licensure processes;
- Identify topics and learning needs that should be addressed by the organisation;
- Coordinate continuing education efforts in their area of expertise and/or geographical region and promote collaboration in provision, including train the trainer projects; and
- Disseminate timely and accurate information about learning opportunities to their constituencies.

These guidelines serve as a reference point for professional associations such as LIAJA, which engage in professional development activities.

Teacher Librarians as Technology Leaders

School librarians are important sources of expertise within schools. Enakrire and Onyanania note that the roles of school librarians have changed from providers of knowledge and skills to facilitators of learning. Fisher, Hallam and Partridge identify that one of the discipline specific skills needed by all library and information science professionals and not just school librarians is development in "technology-based teaching and learning" (47). In asserting the importance of their roles, the United States based International Society for Technology in Education (ISTE) describes the roles as critical and states that school librarians:

- Support the use of technology throughout the school by working closely with the school's technology coordinator or fill the role of the technology coordinator when a separate position does not exist;
- Serve as information literacy and educational technology specialists in their schools;
- Address educational technology and information literacy skills instruction embedded in the curriculum;
- Provide technology training for teachers, administrators, and parents;
- Work with teachers, counsellors, and administrators to prepare students to succeed in higher education, the work place, and in society;
- Help students develop important digital citizenry attributes to demonstrate responsible use of information and technology; and
- Provide leadership in the development of local information and technology literacy standards.

Although these roles are clearly presented by ISTE, in practise this is not what happens (Johnston; Mersand). On the one hand, Johnston found that there was confusion between the roles of the school librarian and the technology specialist. This acted as a barrier to the school

librarian's involvement in technology leadership activities and led to school librarians feeling "threatened by the technology specialist because they are no longer seen as the technology expert in the school" (24). On the other hand, Goetzel discovered that in the absence of media specialists in a school district in the United States, school librarians assumed this role at the expense of other duties.

The literature states that school librarians' knowledge and expertise in the use of technology are "increasingly focused around the use of digital content in the classroom." (Project Tomorrow 14). Their functions include identifying, evaluating and recommending digital resources to teachers. Project Tomorrow, in an extensive study which included almost 380,000 persons from all the stakeholder groups in the education sector, provides evidence of the importance of teacher librarians' knowledge in the use of technology. Respondents reported that the teacher-librarian provided support to teachers in the following ways: identify websites for classroom use (78%); create collections of resources for curriculum support (56%); find specific digital content, podcasts and videos to support classroom lessons (47%). In addition, librarians also answer questions about technology tools (85%), participate with teachers in professional learning communities (66%), and train teachers how to locate and evaluate digital content (33%) (Project Tomorrow 13). Gordon and Todd, in a survey of 765 librarians, discovered that not only were school librarians providing support to teaching staff in the use of technology, 78% of these librarians were conducting in-service training for teaching staff in the use of technology. Therefore, a school librarian who is proficient in the use of technology is an asset to the school.

As a developing country, Jamaica lacks some of the technological advancements of developed countries and this is evident in the quality of school library services offered. Some school libraries in Jamaica have access to ICTs in a variety of formats. Some are connected to the Internet (Shelley-Robinson, Jamaica Library Service), and a few have recently acquired subscriptions to online databases.

The inclusion of ICT in school library operations has created a need for the management of the resources and processes involved in the delivery of services which require or include technology. A search of the literature indicated that training in technology was a need of librarians across

various library sectors internationally (Shepherd, National Library of Vietnam; Fisher, Hallam and Partridge). This need was especially acute in developing countries and has been specifically identified in Jamaica (Baker-Gardner and Stewart). Therefore, in order to help school librarians support 21st century teaching and learning, in-service training is needed to help them become more adept with technology. In identifying the needs of the school librarian, ISTE indicates a desire for "access to relevant professional development that supports them in maintaining currency in their knowledge of educational technology and its applications" (2).

Methodology

This action research describes the implementation of three professional development workshops aimed at developing the technology skills of Jamaican school librarians and presents and analyses feedback from the participants. In order to decide which topics should be considered for the training, a broad scan was done of the literature on the in-service needs of school librarians. Two issues emerged from this review: the importance of the ICT skills of the school librarians (ISTE; Project Tomorrow; Gordon & Todd) and the need for librarians to improve their technology competencies in order to perform their duties effectively (Baker-Gardner and Stewart; Shepherd; Fisher, Hallam and Partridge et al.).

Carlson advocates ten guidelines that should be observed when designing professional development for teachers in the use of technology. These guidelines are equally relevant to the training of school librarians and have been adopted for this discussion. The guidelines were used as a standard to determine the quality of the training offered to the librarians. Carlson advocates that the training should:

1. Empower teachers to develop their knowledge and skills actively and experientially, in variety of learning environments, both individual and collaborative.
2. Include a variety of learning strategies, direct instruction, deduction, discussion, drill and practice and induction and sharing.
3. Aim at higher-order thinking skills.
4. Provide an authentic learning environment so that teachers can engage in concrete tasks within realistic scenarios.
5. Emphasize ways that multi-media technology can facilitate and enhance teachers' professional lives.
6. Encourage teachers to be mentors, tutors and guides of the students' learning process (rather than simple presenters of knowledge and information).

7. Develop teachers skills in learning how to learn (define learning objectives, plan and evaluate learning strategies, monitor progress and adjust as needed).
8. Promote cooperative and collaborative learning.
9. Be sensitive to the culture and diversity of teachers as learners, using a multifaceted approach so as to respond to different learning styles, opportunities, environments and starting points.
10. Enable learning independent of time and place (8).

Some aspects of the guidelines presented by Carlson were followed for the workshops. The workshops included a variety of learning strategies, including cooperative and collaborative learning. They included hands on practical sessions in technology and lesson plan writing, group activities and shared discussions, self-assessment and reflection and lecture type presentations. These activities would meet Dotson and Brown's requirement for interaction among colleagues during professional development. The activities called for the use of skills at all levels of the Bloom's taxonomy (Iowa State University Center).

These guidelines informed the development of the evaluation instrument (questionnaire). As part of this planning, an evaluation instrument (survey) was developed, which was later revised, to measure the effectiveness of the workshops. This was in keeping with the perspective advocated by Dotson and Brown who believe evaluation is an important part of professional development and "should be a part of the planning process allowing for feedback from those participating" (8). An evaluation survey was done for each workshop and the responses were used to direct the planning of follow-up workshops.

The workshops were evaluated by 53% of the 238 participants who completed a questionnaire, developed by the planning team and consisting of both open-ended and closed-questions. This questionnaire was adjusted after Day 1 of the workshop as it did not facilitate feedback on individual sessions. The original questionnaire consisted of 19 items. The first 11 items required participants to rate the various elements of the workshop: resources, delivery of information, communication skills of the facilitator and the relevance of the content to their jobs. Items 12 and 13 required the participants to indicate the ways in which the workshop impacted them personally and how it would impact their professional practice. Item 14 utilised another rating scale designed to collect feedback on the physical facilities. Items 15–18 requested an overall

rating for the workshop and the sections that were most and least effective. The final question was open-ended, which gave the respondents the opportunity to provide additional information. Items 11 and 14 were omitted from the analysis as these items asked about workshop venue and lunch, which were not deemed relevant to this paper; the responses however provided important information that the organisers could use for future planning.

Whereas the original instrument rated the workshop as a whole, the amended instrument rated individual sessions, and was more concise, thereby encouraging greater participation and completion. The original and revised instrument (questionnaire) were designed to collect the same type of data. The amended questionnaire contained a rating scale requiring participants to rate (from 1 to 5, with 1 being the lowest and 5 the highest) each session indicating the extent to which they were: informative, engaging, beneficial to practice, adequately covered, needed and practical. It then included four open-ended questions requiring participants to tell what went well, what needed improvement, and to suggest topics for future training. Respondents were also asked to indicate the workshop sessions they attended out of the three, and to give an overall rating to the series of workshops.

Presentation of Findings

This section presents a description of the workshop from a participant observer perspective. Participant observation is an ethnographic method which enables "researchers to learn about the activities of the people under study in the natural setting through observing and participating in those activities" (Kawulich para. 2). This method was helpful as it enabled the researcher to provide detailed descriptions from an emic perspective. This section also presents the results of the survey evaluation data.

LIAJA Schools Section Workshops (Presentation of Data from Participant Observation)
The series of workshops which was conducted over three days was themed: "Educating the 21st Century Learner: Opportunities and Challenges." The aim was to get school librarians to examine their competence in the use of technology as well as work at developing ICT competencies over the period. Workshop presenters were drawn from:
- The regional library school at The University of the West Indies (UWI), Mona;

- The Mico University College, which is the region's oldest teacher training college and the only institution which currently trains teacher librarians; and
- Practising teachers at the secondary level who taught Information Technology.

The involvement of library training institutions in professional development for their graduates is proposed by IFLA's Guidelines for Professional Library/Information Education Programs.

The workshops were organised and administered by the executive of the LIAJA Schools Section. They were funded from the fees paid by the participants. Invitations to attend the workshops were sent officially from the Ministry of Education, Youth and Information, via e-mail, to schools at the primary and secondary levels across the island of Jamaica.

Baker advocates that professional development for school librarians should give "particular attention…to the meaningful integration of innovative technologies" (149). These workshops deviated from that ideal as the topics were relevant but not innovative; they however gave the required attention to the integration of the technology. Table 2, which follows, provides an outline of the topics for the workshops and the attendance for each day.

Table 2

Outline of the in-service workshops

Section	Number of Participants	Topics
Day 1	102	- Defining the 21st Century Learner - Vital Technology Skills for the 21st Century - Technology integration into the school library programme
Day 2	64	- Open education resources - Collaborative writing with Google Docs - Planning for technology integration (Writing the Plan) - Planning for technology integration (Discussion of the Plans)
Day 3	72	- Move It: From Library Skills to Information Literacy - Plagiarism Education: Let's Start the Conversation - Using Google Docs - Online Searching

Day 1 of the workshop was designed to set a foundation for the training. It helped school librarians reflect on their practice and its suitability for meeting the needs of the students. It also required them to do an assessment of their technology skills and to explore the ways in which their skills could be strengthened. These objectives were accomplished through the sessions "Defining the 21st Century Learner" and "Vital Skills for the 21st Century." Participants were then given opportunities to examine how they could begin the process of integrating the technologies with which they were familiar into information literacy instructional sessions, with a view to assisting them to develop their skills in planning for technology integration.

The second day of the workshop introduced participants to open educational resources suitable for use by staff and students at the primary and secondary levels. School librarians were then introduced to Google Docs and the 5E model for developing lesson plans. They were given the opportunity to collaborate and write a plan showing technology integration based on the 5E model and using Google Docs.

Day 3 included two practical sessions which facilitated the development of online searching skills and furthered the development of their competency in the use of Google Docs. Whereas the coordinators were not able to provide the authentic learning environment that Carlson advocates, it was simulated through the teaching of peers. The purpose of the Google Docs session was to provide school librarians with skills that they could use in their professional roles and also pass on to their students; in this regard the workshops aimed at emphasizing the ways in which technology can "facilitate and enhance their professional lives" (Carlson 8). The workshop also explored the impact of technology on plagiarism and the subsequent need to shift the focus from library skills to information literacy instruction, to accommodate the use of the technology.

There was no attempt to overtly encourage school librarians to act as "mentors, tutors and guides of the students' learning process"; this however was implicitly done during the session on plagiarism which emphasised the librarian's role in helping students avoid academic indiscretion, by using the works of others responsibly. The lesson planning sessions were geared at achieving guideline 7, which focussed on developing lesson plans using the 5E model. Plans were written

collaboratively, presented and then discussed thus provided feedback to the participants. The lesson planning session also helped to meet guideline 4.

Workshop Evaluation (Presentation of Data Collected from the Survey: Questionnaire)
The participants were asked to evaluate each workshop, using a questionnaire. This section presents the data from the evaluation done by 125 (53%) of the 238 participants.

- Evaluation of Day 1 (Data from Original Questionnaire)

Evaluation for Day 1 was conducted using the original evaluation instrument (questionnaire), which did not evaluate individual sessions (refer to Appendix 1.)

Table 3

Participants' perceptions of day 1

Statements	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
The workshop was applicable to my job	53%	18%	6%	10%	8%
I would recommend the workshop to other educators	53%	22%	7%	7%	10%
I would be interested in attending a follow-up, more advanced workshop on the same subject	53%	21%	10%	9%	7%

Seventy-one percent of the respondents felt the workshop was applicable to their jobs, 75% would recommend it and 74% would attend a follow-up workshop. This level of satisfaction was also evident from the responses to the open-ended questions. Responses included:

- "It was very interactive"

- "All the sessions were relevant and informative"

- "They were so needed at this time"

- "All the sessions were very informative and necessary for the subject area. The information will definitely enhance our teaching skills in information literacy lessons"

Table 4, which follows, shows the impact of Day 1 of the workshop on 68 participants; the responses revealed that the impact was varied.

Table 4
Impact of day 1 of the workshop on participants

Statements	Responses (%)
I gained one or more specific ideas that I can use in my practice	94
It may help me to do a better job	90
I have better knowledge on which to base my decisions or actions in my practice	75
I learned a new approach to my practice	72
I was able to update my skills	72
I acquired new or advanced skills	56
I am reconsidering my views towards the topics presented	35
I do not see the impact of this workshop on my job	18
The topics presented were appropriate, but I am undecided as to my own views.	9

The data revealed that while the workshop was effective in helping some respondents gain information useful to their practice (94%), doing their jobs better (90%) and broadening their knowledge base (75%); others found the topics appropriate but were not sure of the impact on their practice (9%). It is important to note that the workshop did not have any relevance to the jobs of 18% of the respondents; this could be as a result of the absence of resources in the respondents' libraries. Robinson indicated that in 2007, only 32% of the schools had computers. It is therefore possible that ICT is still limited in some schools or perhaps ICT is not integrated into the school library but instead, confined to e-learning laboratories. Notwithstanding this negative, the workshop lead 35% to rethink their positions on the topics that were presented.

Day 1 of the workshop also provided the participants with specific ideas that they could use in their jobs (94%), and participants believed the knowledge and skills gained from the workshop

would improve their proficiency (90%). They felt empowered to make better decisions (75%), they learnt advanced skills and were able to update their current skills (72%).

- Evaluation of Days 2-3 (Data from Amended Questionnaire)

The evaluation of Days 2 and 3 was conducted using the modified questionnaire, which evaluated individual sessions using a Likert scale (refer to Appendix 2 for a sample of the modified questionnaire). Table 5 shows the average scores out of 5, for each section of the workshops. 57 participants completed the questionnaire.

Table 5

Evaluation scores for workshops 2 and 3

Topics	Open Source	Google Docs 1	Lesson Planning	Google Docs 2	Plagiarism	Information Literacy	Online Searching	Overall Score
Informative	4.4	3.6	4.4	4.0	5	4.9	4.8	4.4
Engaging	3.1	2.9	4.4	4.3	4.8	4.6	4.7	4.1
Beneficial to Practice	4.6	4.6	4.9	4.5	4.9	4.9	4.9	4.8
Adequately Covered	4.0	2.6	4.3	3.9	4.6	4.6	4.8	4.1
Needed	4.7	4.5	4.6	4.6	4.8	4.8	4.8	4.7
Practical	3.5	2.9	4.4	4.4	4.4	4.7	4.8	4.2
Overall Score	4.1	3.5	4.5	4.3	4.8	4.8	4.8	4.4

A rating of 4.8 out of 5 indicates that the workshops were beneficial to practice; they were also viewed as needed (4.7). The online searching, information literacy and plagiarism sessions were rated 4.8, the highest overall scores for the workshops. On the other hand, the first session of Google Docs was given a low rating; with respect to the adequacy of the coverage of the Google Docs segment, participants rated this 2.6, which suggests respondents needed greater exposure to the topic; consequently, the session was re-done. However, it must be noted that there were Internet challenges which impacted respondents' ability to participate in the first session. The re-done session was rated 4.3, but there were still concerns about the coverage of the topic as respondents rated that aspect 3.9. An overall rating of 4.4 for the sessions presented on Days 2 and 3 indicates a positive perception of the workshops.

Analysis of Findings

The planning of professional development activities for local librarians was built on the fundamental tenets advocated by Mark, Joseph and Remy. However, the activities differed from those proposed in two ways: they were aligned to the new standards based curriculum, giving them a national mandate rather than a school-based mandate and there was no evaluation of the impact on students. The respondents' positive responses to the topics presented, confirmed that training in technology is a need in Jamaica, a finding which is consistent with international trends as indicated, for example, by Shepherd as well as National Library of Vietnam. The findings also confirmed that professional associations (including LIAJA) are positioned to offer professional development to librarians, which is consistent with the views purported by IFLA; Robinson and Glosiene; Pan and Hovde; Hornung. The findings further underscore the argument put forward by both IFLA and Mark, that workshops can assist school librarians in maintaining competency. It further supports Stephens' position that school librarians need more professional development than other teachers, as they had attended workshops designed for teachers, but needed additional in-service training.

The high interest in plagiarism and information literacy, which were geared towards the teaching roles of the school librarian, indicates the respondents' interest in developing the requisite skills in this area, to facilitate training. It is also important to note that plagiarism was the only topic which received a full rating; it was also rated high for being "beneficial to practice" and "needed". This suggests that there is a need in this area and that teacher librarians could further benefit from additional training. Information literacy also scored high in these categories. These are topics that would not receive coverage in the professional development offered by the Ministry of Education since they are more specific to the role of school librarians than to that of teachers generally, supporting Stephens' position for specialist training for school librarians.

The extent to which the workshops met the guidelines advocated by Carlson will be discussed using the evaluation data presented earlier. The workshops assisted school librarians to develop new knowledge and skills such as how to use Google Docs. The workshop also stimulated a desire for further training as evidenced by the desire for follow-up workshops. The rating of 4.9 given for "beneficial to practice" for workshops 2 and 3 suggests these sessions provided training

that could "facilitate and enhance [school librarians'] professional lives" (Carlson 27).   This was the highest rating of any of the components of these workshops.

The workshops could have been more sensitive to the culture and diversity of learners. Comments made on Day 3 about presenters, for example: presenters "should be aware that not all persons are trained as library teachers" and "need to realise that not every teacher at the workshop is "fully" computer literate" illustrate a need for more of this kind of sensitivity. The workshops encouraged learning independent of time and place, by providing hand-outs, with a step-by-step guide that school librarians can follow on their own. They were also invited to contact some of the presenters, for additional guidance in practising the skills on the job.

Whereas it is evident that the workshops followed some of the guidelines advocated by Carlson, the extent to which this was done needs to be further examined. It would also be useful to critically examine Carlson's guidelines for its applicability to the local context and to teacher librarians in particular, given the guidelines were initially developed for teachers. It would also be useful to investigate the number of school librarians who used the skills acquired, post workshops.

Both the original and the amended questionnaire had open-ended questions designed to collect qualitative data from the participants. The data from both instruments are presented in this section as the questions on both instruments collected similar data, which can be combined and discussed; those questions that were not common to both instruments are discussed separately. 118 respondents from the three sessions combined rated the workshop segments very well. Of the 118, twelve indicated that everything about the workshop went well, while the other respondents commented on various aspects of the workshop. The responses, which can be grouped into categories, indicate that the participants were satisfied with various aspects of the workshop. In terms of the administrative processes involved, they thought the workshop was well organised. One respondent summed this up by saying "well planned and executed, flowed seamlessly."   Respondents used adjectives such as "relevant", "interesting", "educational" and "informative" to evaluate the sessions. The presenters were described as mostly "interactive", "engaging", "knowledgeable" and "vibrant". They commented on the practical, interactive

presentation of the information and felt that it provided "food for thought". Two of the respondents looked beyond the immediate benefits of the workshop: one indicated that she saw it as an effort to involve stakeholders while the other noted it was an attempt to improve the value of librarianship.

Several conclusions can be drawn from the foregoing evaluation. Firstly, combined with the data from the rating scale, these comments suggest the workshops were well received by the participants. Secondly, the comments suggest the workshop planning team accurately diagnosed the needs of the librarians, and effectively planned workshops to meet those needs. Thirdly, the findings indicate the respondents were actively engaged in the learning experiences.

Only thirteen of the respondents made suggestions for improvements; this could be as a result of their expressed satisfaction with the administrative processes, topics, methodology and presenters. Of the thirteen, four raised concerns about the venue for the workshop; particularly, the insufficient number of tables and the small size of the room. This occurred as a result of accommodating a significant number of unregistered participants, who were not planned for. Respondents also felt that the workshop programme could have been circulated ahead of the workshop. Additionally, some respondents felt that a copy of the presentations could have been e-mailed, and tokens provided for the participants. Two suggestions for improvement were an increase in the number of practical activities, and greater attention to time management. Interestingly these areas were rated highly by the majority of respondents.

In keeping with the IFLA Guidelines for Professional Development for Librarians, an effort was made to identify topics and learning needs for future workshops. This was accomplished by asking respondents for suggestions for future training. 44 responses were provided for this item, and these related to the various roles of the school librarian, which British Colombia Teacher Federation identifies as leadership, collaboration, instruction and management. The three most popular requests were for additional training in Google Docs (54%) and cataloguing, research skills and grant proposal writing (38%). The need for additional information technology skills was evident as there were requests for training in how to make apps, the use of information technology in education, creating blogs and using search engines. A total of 54% made requests

for these, and when added to the requests for training in Google Docs, points to the need for additional training in technology. This is in keeping with the findings of Shepherd and Fisher, Hallman and Partridge that librarians internationally needed training in technology. It also confirms the findings of Baker-Gardner and Stewart that Jamaican school librarians need additional and ongoing training in the use of technology. Baker also advocated that professional development for school librarians should include meaningful integration of technology.

The final question on the amended instrument required respondents to provide contact details for a colleague, who would benefit from similar future workshops. This was completed by only 17% of the respondents. Contact information was provided for school leaders such as the principal and vice-principal. Given the contexts within which these school libraries operate, respondents might have felt that inviting administrators to the workshops would improve the profile of the school library.

Alignment of the Workshop Content to the AASL Standards

This section presents an outline of how the knowledge and skills gained from the workshops could be used to assist learners. The aim of the workshops was to further equip school librarians to provide information services to 21st century learners. As previously indicated, there was emphasis on developing technological skills of school librarians, which they could transfer to their students. AASL postulated four standards for the 21st century learner. Learners should use skills, resources and tools to:

1. Inquire, think critically, and gain knowledge;
2. Draw conclusions, make informed decisions, apply knowledge to new situations, and create new knowledge;
3. Share knowledge and participate ethically and productively as members of our democratic society; and
4. Pursue personal and aesthetic growth.

Table 5, which follows, shows an alignment of the topics presented at the workshops with skills embedded in the AASL standards. It also shows how librarians can use these skills in their information literacy activities.

Table 5

Alignment of workshop topics to AASL skills and teacher activities

Workshop Topics	Student Skills Advocated by AASL	School Librarians' Activities
Defining the 21st Century Learner		• Plan lessons and activities to meet the needs of learners
Vital Technology Skills for the 21st Century		• Plan lessons and activities to meet the needs of learners
Technology Integration into the School Library Programme		• Plan lessons and activities to meet the needs of learners. • Develop new technology based services
Open Education Resources	• Follow an inquiry based process in seeking knowledge in curricular subjects, and make the real world connection for using this process in own life. • Find, evaluate, and select appropriate sources to answer questions. • Seek information for personal learning in a variety of formats and genres.	• Identify, evaluate and select content for teaching and professional development • Assist users in identifying, evaluating and selecting content to satisfy their information needs.
Collaborative Writing with Google Docs	• Collaborate with others to broaden and deepen understanding. • Organize knowledge so that it is useful. • Use technology and other information tools to analyse and organize information. • Collaborate with others to exchange ideas, develop new understandings, make decisions, and solve problems.	• Work on projects with colleagues • Track students' progress as they work collaboratively • Teach students how to utilize the software application
Planning for Technology Integration		• Plan for the teaching and practice of the skills
Move it: From Library Skills to Information Literacy		• Plan for the teaching and practice of skills.
Plagiarism Education: Let's Start the Discussion	• Use information and technology ethically and responsibly	• Include relevant topics in information literacy sessions
Online Searching	• Find, evaluate, and select appropriate sources to answer questions. • Demonstrate mastery of technology tools for accessing information and pursuing inquiry.	• Gather content for teaching and professional development • Teach students to identify, evaluate and select online resources

All sessions imparted skills and knowledge which were essential to 21st teaching and learning. While some of the sessions such as "Defining the 21st Century Learner" and "Vital Technology Skills for the 21st Century Learner" specifically targeted school librarians, there were others, such as "Plagiarism Education: Let's Start the Discussion", that were more suited for passing on to learners. Three of the sessions targeted school librarians and learners. The sessions were so designed that they would impact the teaching process, information provision and information use. The importance of the school library in helping students to acquire the multiliteracies needed to function successfully in a technological environment embedded in the AASL standards. These standards articulate the role of the school library in the context of expanding technology.

Challenges in Providing Professional Development to School Librarians

Shelley-Robinson's finding on the variety of qualifications of persons working in Jamaican school libraries is a reflection of international trends (Mitchell and Weldon). This diversity of personnel highlights and explains a difficulty in providing adequate and relevant professional development activities for school library personnel as it is difficult to find a common area of need. The comments from some respondents indicate that even though the ratings given to the workshop are high, there are individuals whose needs are still not being adequately met. Therefore, for professional development for school library personnel to be really effective in supporting 21st century learning, the needs of the various persons working in these libraries have to be addressed. A related factor which compounds this challenge is the high attrition of individuals from school libraries due to challenges related to being OPLs (Jamaica Library Service 13). Another consideration is identifying venues that are affordable especially when there is a need to do practical activities that require the use of computer facilities. Considering that workshop fees are paid by schools, which are experiencing serious financial constraints, it would not be advisable to charge high fees for these workshops. However, renting venues for the workshops can prove expensive.

Conclusion and Recommendations

There is an urgency for ongoing in-service professional development for school librarians; this will be a long term essential as developments in technology and changes in education continue to

impact the roles of the school librarian and the services offered by the school library. This need is being partially met by the Schools Section of LIAJA. However, the extent to which the weaknesses of the respondents are being addressed has to be further explored and with greater depth.

The Schools Section has to continue to assess its workshops and use this evaluation to customise the training being offered. Notwithstanding, there is a need to go beyond this evaluation and assess the long term impact of the workshops on the participants and the learners with whom these participants work, a suggestion supported by Brown, Dotson and Yontz. Looking to the literature is a good place to begin, as one can obtain information regarding training needs for school librarians. In the future, the Schools Section should conduct formal needs assessment to drive the in-service training. This would ensure that the training is relevant. Training also needs to be responsive to what Carlson describes as "different starting points" (8). The frequency of training also needs to be increased to cater to the needs of the participants.

Professional development for school librarians is too important to be left to the discretion of the professional association, which has no mandate from the government. Given the importance of the school library to the achievement of the goals of 21st century education, the Ministry of Education, Youth and Information should ensure that teacher librarians' training needs are addressed. Therefore, professional development for school librarians should be part of the ongoing professional development offered to teachers by the Ministry. As advocated by Stephens, these school librarians benefit greatly from the professional development offered to teachers, but their specialised roles will require professional development in their area of specialisation. Where the Ministry lacks the technical expertise, it should seek partnerships with the professional association and the library training institutions. In the meantime, the professional association should continue to offer value-adding workshops which cater to the specific needs of school librarians and other personnel who work in school libraries. For these workshops to be effective, they should involve more practical activities aligned to the roles and responsibilities of the librarian, and applicable to the needs of the students whom they serve.

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Appendix 1 Original Evaluation Instrument

LIAJA Schools Section Workshop Evaluation Form

Your feedback is critical to ensure we are meeting your professional needs. We would appreciate if you could take a few minutes to share your opinions with us so we can serve you better.

Please return this form to the facilitator or organizer at the end of the workshop. Thank you.

Thursday April 28, 2016 @ 8:30 am @ Joyce Robinson Hall, Kingston and St. Andrew Parish Library

Theme: Educating the 21st Century Learner: Opportunities and Challenges

	Strongly agree				Strongly disagree
1. The content was as described in publicity materials	1	2	3	4	5
2. The workshop was applicable to my job	1	2	3	4	5
3. I will recommend this workshop to other educators	1	2	3	4	5
4. The program was well paced within the allotted time	1	2	3	4	5
5. The facilitator was a good communicator	1	2	3	4	5
6. The material was presented in an organized manner	1	2	3	4	5
7. The facilitator was knowledgeable on the topic	1	2	3	4	5
8. I would be interested in attending a follow-up, more advanced workshop on this same subject	1	2	3	4	5

9. Given the topic, was this workshop: ❑ a. Too short ❑ b. Right length ❑ c. Too long

10. In your opinion, was this workshop: ❑ a. Introductory ❑ b. Intermediate ❑ c. Advanced

11. Please rate the following:

	Excellent	Very Good	Good	Fair	Poor
a. Visuals	❑	❑	❑	❑	❑
b. Acoustics	❑	❑	❑	❑	❑
c. Meeting space	❑	❑	❑	❑	❑
d. Handouts	❑	❑	❑	❑	❑
e. The program overall	❑	❑	❑	❑	❑

12. As a result of attending this workshop, I have been impacted in the following ways (check all that apply):

___I gained one or more specific ideas that I can implement in my area of practice.

___I learned a new approach to my practice.

___It may help me do a better job.

___I do not see the impact of this workshop on my job.
___Other

13. By attending this workshop, I believe (check all that apply):
___I was able to update my skills.
___I acquired new and/or advanced skills.
___I have better knowledge upon which to base my decisions/actions in the practice setting.
___I am reconsidering my views toward the topic(s) presented.
___The topic presented was appropriate, but I am undecided as to my own views.
___Other

14. Facilities/Arrangements (Circle the appropriate number to indicate your level of satisfaction or circle NA if the item is not applicable to you.)

	Unsatisfactory			Satisfactory		
a. Food Services	1	2	3	4	5	NA
b. Meeting rooms and facilities	1	2	3	4	5	NA
c. Restrooms	1	2	3	4	5	NA
d. Day of week	1	2	3	4	5	NA
e. Time of day	1	2	3	4	5	NA
f. Location	1	2	3	4	5	NA

15. Overall I would rate this conference as:
___Excellent
___Good
___Average
___Poor

16. Which session did you find most informative? _____
17. Why? _____
18. Which session did you find least informative? _____
19. Why?_____

20. What did you most appreciate/enjoy/think was best about the workshop? Any suggestions for improvement?

_____
_____
_____
_____
_____

THANK YOU

Appendix 2 Amended Evaluation Instrument

LIAJA Schools Section Meeting and Workshop
GC Foster College of Physical Education and Sports
May 5, 2017
Theme: "Theme: Educating the 21st Century Learner: Opportunities and Challenges: Part 3"

Workshop Evaluation Form
Please complete the form below using the scale 1 – 5 (with 1 being the lowest and 5 being the highest).
Write the number which best represents your opinion under each column

Areas for Rating	Information Literacy —	Plagiarism	Google Docs	Online Searching
Informative				
Engaging				
Beneficial to Practice				
Adequately covered				
Needed				
Practical				
TOTAL				

1. What went well.

_____

_____

_____

_____

2. What needs to be improved.

_____

_____

_____

_____

3. How many sessions did you attend? _____

4. Using the rating 1 – 5, rate your usefulness of the workshop series. _____

5. What topics would you suggest future training?

_____

_____

_____

_____

6. How many training sessions do you think would be ideal for the academic year? _____

Refer a Colleague

Know anyone you think should be invited to these workshops? Provide us with a name, email address and telephone number.

_____

_____

_____

_____

AN EXAMINATION OF THE POTENTIAL RESEARCH VALUE IN THE MANUSCRIPT COLLECTIONS OF THREE JAMAICAN LITERARY PIONEERS

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Abstract

Purpose: The work of some early Jamaican literary pioneers between 1900 and 1930 is often overlooked. Inaccessibility of their works is suggested as one reason for this oversight. The National Library of Jamaica (NLJ) holds the manuscript collection of some of these pioneers, namely: Una Marson, Walter Adolphe Roberts and J.E. Clare McFarlane. The purpose of this paper is to present a preliminary assessment of the research value in these manuscript collections. It is hoped that the identification of such research value will lead to greater use of the collections and encourage further study of the contributions of these writers to the Jamaican and West Indian literary tradition.

Methodology: The study used a mixed method approach (document analysis and citation analysis) to assess research value. In this regard research value was determined through a review of the contents of the collection and the collections' citation metrics for e-mail queries about the collection from 2014-2017 as well as use of the collection in other works, against the meaning of the term research value.

Findings: The study found that there was research value because the collections were used to support research and they included rare and unique items, extensive materials on a subject (the early development of the literary scene in Jamaica and the political history of Jamaica), which are consistent with the definition of research value.

Research Limitations / Implications: The purpose of this study was not to determine the extent of research value but merely the potential or mere existence of research value. A more thorough examination of the research value of the collections can be done, with the aim of assigning a numerical rating to the items within the collections.

Originality / Value: This is the first paper to assess the research value of these collections. It also adds to the limited body of literature on these literary pioneers.

Keywords: Research value, manuscript collections, Una Marson, Walter Adolphe Roberts, J.E. Clare McFarlane, National Library of Jamaica, West Indian Literature

Paper Type: Research paper

Introduction

"What did the pioneers produce" asks Edward Baugh (5). Naming Tom Redcam, Walter Adolphe Roberts and J.E. Clare McFarlane, he goes on to conclude that their works are now "almost purely of historical interest" (5). In the general introduction to the *Routledge Reader in Caribbean Literature*, the editors point out that not much attention has been paid to the Caribbean literature of the first thirty years of the twentieth century (Donnell and Welsh 14). They attribute this lack of coverage to the inaccessibility of texts and opine that during that period "little care was taken to ensure that a substantial literary archive survived" (15). Donnell and Welsh also suggest that a "significant number of early texts would not have survived" if the authors or their relatives did not think it "worthy of national attention and therefore donated copies to the West India Reference Library" (15). However, it is not only the texts that have survived in the West India Reference Library, now the National Library of Jamaica (NLJ), the manuscript collections of two of these pioneers form a significant part of Jamaica's tangible literary heritage housed there.

It is against this background that the research value within the manuscript collections of these literary pioneers is explored. The exploration of research value is focused on three literary collections at the National Library of Jamaica: Walter Adolphe Roberts, J. E. Clare McFarlane and Una Marson. Roberts, Marson and McFarlane were all members of the Jamaica Poetry League. Formally founded by McFarlane in 1923, the League, according to Donnell and Welsh, "served to raise the profile of poetic activity in the island" (28). Therefore as seminal figures in the development of literature in Jamaica, an exploration of their manuscript collections could confirm Baugh's sentiments on the purely historical value of their work, and perhaps point to other value in the collections. By exploring the collection it is hoped that researchers will be encouraged to include more unpublished materials from literary archives in their study of West Indian literature rather than relying solely on published texts. It is also hoped that authors will be encouraged to deposit their collections in libraries and archives.

Literature Review

Measuring Value

In assessing collections, research value is identified, along with condition, description and arrangement, as an important element in the overall process. Conway and Proffitt define research value as "the value of the collection in terms of the extent to which it includes relatively rare, extensive, and/or detailed information about a topic that has received considerable prior attention, is gaining currency and/or has potential to attract significant interest" (20). Collection assessment is necessary to properly manage collections because it informs decision making about preservation and processing priorities among other things (20). In assessing research value a numerical rating is usually assigned to the collection. The higher the number, the more valuable the collection. Research value, however, represents the most difficult aspect of assessing a collection. According to Conway and Proffitt, "research value is probably the most troublesome part of collections assessment" because of the "difficulty in defining and measuring research value" (19).

In many instances the value of an archival collection is determined by its usage, the purpose for which an item is used and the questions it is used to answer (Dowler 78). He argues for *potential use* as one of the key determinants in the value of a record contending that if the use of the record is the primary "determinant of value of a record, then it follows that all potential use, as well as actual use is important to the study of the uses of the archives" (77-78). He further argues that the definition of users should also include future users who "may use" and even those who "should use" the information in the archives (78). Conway and Proffitt suggest research value can be used to estimate the significance of an archival collection to scholars (26). However, Dowler challenges us to think beyond the scholar as the sole or main user of the archive. He cites research in 1961 showing that the scholarly use of archives is low (79). Other potential users identified were those conducting research for others, such as authors, journalists and book dealers; a large group of users also includes genealogists (Dowler 76). Even though potential use is valuable, actual use of a collection is still significant because it influences other researchers or scholars to further explore such sources. Dowler explains that a common path to archives is through footnotes (81).

In articulating the importance of research value, Donghee Sinn discusses the role it plays in the selection of collections for digitization (qtd. in Greene and Meissner 219). Lynn and Slotkin put

this into context by explaining that preservation of a collection is time-consuming and even the most simple preservation decision must be defended by the collection's research value or physical deterioration (qtd. in Greene and Meissner 219). Valuable collections that are prioritised for digitisation are typically rare and have unique materials or are physically deteriorating (Sinn 1522). Therefore, the "anticipated influence on the course of history" is key in the value of a collection (Sinn 1522).

West Indian Literature

West Indian literary history can be traced back to the eighteenth century but the twentieth century is often regarded as the beginning of a distinct West Indian literature (King 1; Donnell and Welsh 4). However, it is the period beginning with the 1950s that is widely written of and appreciated in West Indian literature. Donnell and Welsh explain that seminal works of the 1950s and 1960s (a period when Caribbean literature boomed), traditionally dominate what they describe as "the Caribbean canon" (7). Bruce King also makes the point that the 1950s was "perhaps the most important decade of West Indian writing in the sense that it established an identity, an awareness of common themes and a canon of significant writers and texts". However, he adds that the "best known literary works were published during the 1960s" (3). The West Indian literary tradition is being sustained in the new millennium though many of the writers are based in the diasporas in the United States of America, Canada and Britain (Donnell and Welsh 25). Its distinctive West Indian features have remained and many writers, according to Donnell and Welsh, have achieved esteem in the English literature tradition (26).

The focus of this paper is on the literature of the early twentieth century, what Anthony Boxill describes as less "self-consciously imitative of English literature", rather than writings of the previous two centuries (30). The literature of this period is often criticised as colonial in "form and content" (Donnell and Welsh 4). Edward Baugh bluntly describes most of the poetry written in the early twentieth century as "bad" (5). The literature before the 1950s has therefore received very little attention (Donnell and Welsh 13). In fact Donnell and Welsh describe the literature of the period 1900-1929, as "disinherited" (14). In the Jamaican literary tradition, that period is represented by writers such as Tom Redcam, Walter Adolphe Roberts and J.E. Clare McFarlane.

The Three Literary Pioneers of the Manuscript Collections Featured in this Study

(i) J. E. Clare McFarlane

McFarlane was the Honorary Secretary of the Jamaica Poetry League which he founded in 1923 (Bennett). He was later honoured by the League in 1952 when he was made Poet Laureate of Jamaica. McFarlane compiled two poetry anthologies, *Voices from Summerland* (1929) and *A Treasury of Jamaica Poetry* (1950), which were part of the Jamaican school curriculum between the 1930s and 1950s (Figueredo 518). He also published five other books of his own poetry; his poetry, however, has not been highly regarded. According to Dunn and Mordecai, "McFarlane's poetry is not particularly noteworthy except perhaps for *The Black Peril*, a 1920s poem defending Ethiopians and Blacks from a British journalist's racist vituperation" (942).

(ii) Walter Adolphe Roberts

Roberts, on the other hand, distinguished himself as a prolific writer as well as a nationalist and political activist from the 1920s to the 1950s. He wrote more than twenty-five books including novels, numerous short stories, two major non-fictions and three collections of poetry. Boxill describes Walter Adolphe Roberts as "one of the best poets to have been encouraged by pioneering poet, Tom Redcam; Claude McKay was the other" (41). Roberts resided in the United States of America for much of his life where he also edited journals and newspapers. In 1936 Roberts founded the Jamaica Progressive League with the aim of attaining self-government. Alex Zeidenfelt describes this as the "first movement for universal suffrage and self-government for Jamaica" (513). In spite of Roberts' prolific writing career and social and political influence in Jamaica, his work has been largely overlooked (Hulme xiv; Ledgister 489).

(iii) Una Marson

Una Marson, the third writer featured in this paper, published most of her literature in the decade after the 1900-1929 time period. Like the writers of the first quarter of the twentieth century, Marson's work has received very little attention ((Donell, "Contradictory (W)omens?" 43-44; Jarrett-Macauley viii)). Marson was a playwright, poet, activist and journalist, primarily active between the 1930s to 1950s in Jamaica and England. Compared with Roberts and McFarlane, Una Marson has received more literary accolades and appears to be more accepted in the West

Indian literary tradition. She is often described a pioneering Caribbean woman (Donnell, "Marson, Una 1905-65; Smilowitz 68). She is also characterised as a "black nationalist" (Ford-Smith 22) and "black internationalist" (Umoren 50) and regarded as "the first black British feminist to speak out against racism and sexism in Britain" (Jarrett-Macauly vii). Marson published three collections of poetry and wrote and staged three plays. She was also known for her work with the British Broadcasting Corporation (BBC) and Emperor Haile Sellassie I.

Methodology

Conway and Proffitt's definition of research value as "the value of the collection in terms of the extent to which it includes relatively rare, extensive, and/or detailed information about a topic that has received considerable prior attention, is gaining currency and/or has potential to attract significant interest" (20) guided this research. Additionally, Dowler's key determinants, namely: actual use, potential use, future users who "may use" and even those who "should use" the information (77-78), informs the determination of research value in this study. A mixed method design (document analysis and citation analysis) was used. Research value was determined through a review of the contents of the collection and the citation metrics for e-mail queries about the collection from 2014-2017 as well as citation metrics for the use of the collection in other works, against this study's adopted meaning of the term research value.

Document Analysis – Examining the Contents of the Collections

The contents of each collection are arranged in boxes. To determine the existence of research value, the boxes were first checked to ascertain the subject matter covered in the collection and the rarity of items. The subject matter was judged to have research value if the items were about prominent persons/institutions in Jamaica or about a significant event or period in Jamaica's history. The volume of coverage on the subject was also considered. The rarity of items was judged to have research value to the extent that it included manuscripts and handwritten documents. No numerical rating was used in assessing research value; once the contents met any of the criteria in the research value definition aforementioned, they were judged to possess research value. In the instances where boxes were not checked, primarily in the case of the Roberts collection, the index list was reviewed to determine the contents of the collection and, by extension, the research value.

Citation Analysis

Secondly, data was collected by way of a citation analysis. Citation analysis has been used by various researchers to identify types of materials used by scholars and research patterns (Sinn 1524). More importantly citation analysis enables libraries to determine the impact of its resources and can assist in collection development (Sinn 1524). Citation analysis was used to assess how often the collections were used in journal articles and the subject area covered by the articles. A count of the number of e-mail research requests received by the National Library of Jamaica about the collections was also used as another way of determining use of the collections.

The citation analysis was done by searching The University of the West Indies' online portal (UWILinC) for journal articles in which the manuscript collections of Roberts, McFarlane and Marson were referenced. UWILinC enabled the searching of online databases and catalogues of printed materials and digital collections on one platform. The search was done using the keywords, "Una Marson," "Walter Adolphe Roberts," and "J. E. Clare McFarlane" in the first instance. Other keywords, for example "Clare McFarlane" and "Adolphe Roberts", were used to ensure that variations in the names were accounted for. The search results were then filtered to show only journal articles. Using the "Ctrl" and "F" feature on the keyboard, each article was then searched for the words "manuscript" and/or "National Library of Jamaica." References, bibliographies, footnotes and endnotes were also checked for mentions of the use of the collections at the National Library of Jamaica. The aim was to identify papers within which citations of the manuscript collections occurred and examine how the collections were used to support the research therein.

E-mail Requests

In a further attempt to ascertain research value through use, a search was done of the e-mail record (inbox) of the departments, Research & Information, and Special Collections, National Library of Jamaica. The e-mail records checked were limited to the most recent period 2014 to 2017. Although the selection of the last four years was mostly random and the decision was made primarily out of convenience, it formed a good basis for comparison among the collections and helped to show the current value of the collection to users.

Limitations

These methods presented some drawbacks. Firstly, the J. E. Clare McFarlane collection was not fully indexed, so it was difficult to check every piece of material in the manuscript boxes. Many small pieces of paper and some correspondence were not checked. For instance, where a folder within a manuscript box was labeled "IOJ correspondence" not all the correspondence was checked. This limited the examination and subsequently the ability to identify materials with high research value.

Secondly, it was also challenging to determine rarity of items without an in-depth knowledge of West Indian literature. A more in-depth evaluation of West Indian literature and history by academics could make a closer determination of research value since they would be knowledgeable in the subject matter and be able to make the connections where they exist. Library personnel can also take a step further by fully assessing the collections and by ascribing a numerical rating to their value.

Thirdly, the collections may have been used in other unpublished and published works not identifiable through the UWI libraries' portal (UWILinC). Furthermore, by using only journal articles, the citation analysis limited the value of the collection to past use and use by scholars. Potential use may exist or the collections may have been used by other non-academic researchers, neither of which was accounted for in this study. The collections may have been used to support research published in books and this also was not accounted for.

Finally, no account was taken of requests made in-person and via the telephone. These limitations are areas that can be addressed if a more thorough assessment of these collections is done. The aim of this research was to present a basic assessment of the research value of the collections, not to attempt an in-depth citation analysis or detailed exploration of the use of the collections.

Presentation of Findings

The Collections

The Una Marson Collection

No information could be found about when or by whom the Una Marson collection was given to the NLJ. The collection is small (3 boxes) in comparison to those of Roberts (30 boxes) and McFarlane (10 boxes) and contains very few personal documents except a photograph at the BBC and an interesting letter from Una Marson's husband, which gives insight into their marriage in its final stage. Most of the documents are by Marson herself but there are a few newspaper clippings by others and a typed poem by Edna Murray. The documents are primarily typescripts but there are two handwritten ones; a poem (*Beyond the Clouds*) and a play (*The Courage of Bokendi*). Included in the collection are also rejection letters from the *Gleaner*, not necessarily of particular research value but of more intrinsic value to a nascent writer facing similar challenges. There are a number of song books and musical sheets as well as newspaper clippings of Marson's work and other publications. Table 1, which follows, provides a sample of the items in the Una Marson collection.

Table 1

Sample of items in the Una Marson collection

Poems	Other Writings	Play script(s)
-Milk River -Independence -Words Death's Mystery Lignum Vitae The Key Peace on Earth May Rains Poinciana Splendor New Year Dedication The Birthday Moaning Preacher Peace on Earth Beyond the Clouds (handwritten) To Serve There Will Come a Time	Afterthoughts on London The Child, the Community and Independence New Magnet To Federate or Not to Federate History of 1st West India Regiment The Status of West Indian Negroes in their Own Island A Tribute to United Manchester Association Searchlight by the Torch What I have Discovered in America-New York Discovering America The Task Ahead by the Torch Parental Responsibility by the Torch Have Married Women Taken the Wrong Turning Building a National Culture The Trail Marriage that Failed Quashie Comes to London Working Together (script of radio programme for RJR-Marson interviews of a taxi-driver)	London Calling Pocomania The Courage of Bokendi (handwritten)

The Walter Adolphe Roberts Collection

Walter Adolphe Roberts' collection is more voluminous than Marson's and McFarlane's and contains thirty two boxes rich with a variety of personal and historical items documenting Roberts' wide experiences locally, regionally and internationally. The collection contains many items of correspondence, significant among them are those with fellow Jamaica Progressive League member, W.A. Domingo. Domingo was an activist, journalist, editor of Marcus Garvey's *Negro World* and one of the foremost advocates for self-government.

In an attempt to assess the research value in Roberts' collection, archivist, Rosemary Dodd describes materials related to his writing and publishing as of "lesser status than those relating to his political activism." However, she sees research value in the correspondence with different journals in the United States of America "especially for researchers interested in literature or publishing in the inter-war years" (Walter Adolphe Roberts Archive Listing). One such valuable item of correspondence is that with John Reed, while he was at *The Masses.* Reed would later write the historical book, accounting first-hand, the Bolshevik Revolution, *Ten Days that Shook the World*. Reed, in response to a piece submitted by Roberts, wrote:

> I wish your story were not just a fanciful horror tale which doesn't seem to have any reason for being. Not that we want a tale with a moral, or a purpose - God forbid! And the Lord save us from a story with a Socialist point. But we think that fiction must be something that just had to be written, and your story's not that. Of course you know we can't pay anything for material. Please send us some more of your work. (Letter to W.A. Roberts from John Reed)

There are a number of correspondence between other writers and Roberts during the period when he resided in the USA and edited journals. Among some of the notable writers he communicated with were Salomón de la Selva, Alan Seeger and Muna Lee de Muñoz Marín. The collection has a range of resources and is rich in interesting items like locks of his own hair and a lock of hair that belonged to the poet, Edna St Vincent Millay.

Roberts became, a prominent figure in the Jamaican society when he returned from the USA to reside in Jamaica; he was president of the Jamaican Historical Society and the Jamaica Poetry League and was chair of the board of governors of the Institute of Jamaica; many documents relating to these institutions can be found in the collection.

One of the most valuable items in his collection is a copy of his autobiography, *These Many Years,* which was published by the National Library of Jamaica in 2015. Table 2, which follows, provides a sample of items in his collection.

Table 2

Sample of items in the Walter Adolphe Roberts collection

Correspondence	Manuscripts	Publications	Other Items
With/Re: Margaret Sanger Olga Petrova Eleanor Ramos Friends and Family Salamon de la Selva George Sterling Vivian Virtue J. E. Clare McFarlane W. A. Domingo (117 pieces) Muna Lee de Muñoz Marin Dancers and actors re interviews for articles by Roberts Jamaica Progressive League Jamaica National Trust Commission Institute of Jamaica Jamaican Historical Society	'These Many Years. An Autobiography in two parts.' Exercise books containing various chapters of a book or books and short stories Episodes in the Life of an Irresponsible (handwritten) The Gambia Girl The Priest's Supper	Ainslee's BIM Jamaica Historical Society Bulletin The Jamaican Historical Review' Institute of Jamaica – pamphlets The People's National Party – publications 'Pierrot Wounded'	Photographs Journals Diaries Postcards Programmes Flyers Scrapbooks Newspaper clippings, Artefacts, Certificates Research notes

The J. E. Clare McFarlane Collection

In 1982, the J.E. Clare McFarlane collection was handed over to the National Library of Jamaica by his son Roy McFarlane. The collection contains thirteen boxes, many of which are correspondence or papers related to activities of the Jamaica Poetry League. Additionally, there are a number of correspondence and papers relating to the International PEN Club: a letter to Una Marson regarding the publishing of "Jamaica's Crisis" in the Public Opinion newspaper is noteworthy. There is also a letter from the Colonial Secretary indicating the inability of the Legislative Council to make annual contributions to the Jamaica Poetry League. Though McFarlane was also the first financial secretary for Jamaica (Bennett), sadly there is little on this aspect of his life. The collection also includes scrapbooks, a diary belonging to McFarlane,

receipts, books, and a manuscript of his first novel (unpublished), *Gwendolyn Parker*. Table 3, which follows, provides a sample of the items.

Table 3

Sample of items in the J.E. Clare McFarlane collection

Correspondence	Publications	Papers re Jamaica Poetry League, Jamaican Historical Society	Manuscripts
Letters re. The business of the Jamaica Poetry League 1887-1959 To family and friends Hugh Foot (Gov. of Jamaica) The Jamaica P.E.N. Club Jamaica Centre (local correspondence 1955 – January 1963, international correspondence, 1964-1969)	Newsletters from the International P.E.N club Wings of the Morning Poems By Vivian L. Virtue Orange Valley and Other Poems by Tom Redcam Report on Finance and Taxation in Jamaica by J. R. and Mrs. V.K. Hicks George Davis Goode: The Man and His Work by Ethel Marson The West Indian Critic & Review (Formerly the Jamaica Critic)	Minutes Leagues' accounts Jamaica Poetry League programmes and activities - 1927, 1930, 1936, 1937, 1938, 1948 Jamaica Poetry League Annual reports	Gwendolyn Parker: A First Novel by J. E. McFarlane Notebook with poem, e.g. "Sanctuary" and a discourse on the "Significance of Poetry"

Citations and E-mails

Table 4, which follows, presents the results of the citation analysis as well as the number of queries received, via e-mail, about the collections.

Table 4

Citation analysis and e-mail requests

Pioneer/Writer	E-mail Queries Received at NLJ, January 2014 - December 2017	# of articles with citations of the collections
Una Marson	19	3
W.A. Roberts	0	1
J.E. Clare McFarlane	0	0

The findings reveal that the Una Marson collection is the most valuable of the three literary collections when assessed by past use. Between 2014 and 2017, the NLJ received nineteen e-mail queries about the collection compared to zero requests for the Roberts and McFarlane collections. Among the most valuable items in the Marson collection are her unpublished manuscripts of the plays *Pocomania* and *London Calling*. The citation analysis showed that these were the most used items.

Anna Snaith in her attempt to highlight "colonial texts, figures and agendas in Britain" used the manuscript of *London Calling* to "demonstrate [Marson's] significance to modernist literature" (94). Imoabong Umoren also used the same manuscript to illustrate what she conceptualized as Marson's "black internationalism" (67). Alison Donnell, writing on African presence in Caribbean literature (1930-2005), used the *Pocomania* manuscript to locate Marson within the early African presence in Caribbean literature.

One article was found referencing Roberts' manuscript collection (see table 4). Correspondence between Domingo and Roberts was cited in an article discussing Domingo's detention in Jamaica in 1941 (Parker 110). The letter was used to support a broader discussion on the role of "transnational West Indians" in Harlem and their push for decolonization (98). No queries about the Roberts collection were received by the National Library's Research and Special Collections Departments.

The McFarlane collection also had no e-mail queries and no citation record.

Analysis of Findings

The research findings indicate that there is research value in the collections of Una Marson, Walter Adolphe Roberts and J.E. Clare McFarlane. However, the type of research value differs with each collection. Of the items examined, the two playscripts in the Una Marson collection appear to carry high research value because of their rarity and uniqueness. Because of Marson's early treatment of politics, race, feminism and the struggles of black immigrant communities, her collection bears even greater research value in the extent to which it covers topics of significance.

In an apparent recognition of the research value of the *Pocomania* and *London Calling* playscripts, the National Library in the latter part of 2016, and during the writing of this paper, published the manuscripts. When Delia Jarrett-Macauley was writing about the life of Una Marson in 1998, she remarked that Marson had been rarely researched or discussed in either a "black literary, feminist or political context". She cited only two notable exceptions to her remarks; the papers written by Honor Ford-Smith and Erika Smilowitz, both writing in the 1980s (viii). It is fair to say that the level of research and discussion on Marson has subsequently increased.

Though it appears from the use of the Roberts and McFarlane collections that not much research value has been discovered by scholars, one cannot overlook the potential for future interest and, more importantly, that other research value may exist outside the scholarly community. The extent to which the collections of McFarlane and Roberts include materials on the subjects of Jamaica's literary and political development respectively (both subjects in the case of Roberts), augurs well for potential use on the basis of future changes in the nature of enquiry.

The publication of Roberts' autobiographical manuscript should create greater interest in him and possibly more research on his contribution to Jamaica's development. The editor, in his introduction to the autobiography, cites a newspaper article extolling Walter Adolphe Roberts as an unsung hero in Jamaica's move towards self-government, as a sign of the imminent development in the recognition of the Roberts' value (Roberts xiv). In the article, the author argues for the recognition of Walter Adolphe Roberts as the true 'Father of the Nation' and not Norman Manley, Jamaica's premier (1959-1962) and National Hero (Jones). Roberts' manuscript collection will therefore be invaluable to anyone looking to broaden their knowledge of the role he played in Jamaica's political development as well as his contribution as a historian and writer. His extensive collection of correspondence with Jamaica's political leaders, materials related to cultural institutions like the Jamaican Historical Society and the Institute of Jamaica, the literary scene in Jamaica and the United States of America can add value to any research in these areas.

Although Roberts' and McFarlane's collection do not seem to hold much literary research value, they undoubtedly have high historical value. Irrespective of how good or colonially imitative the literature of the early 1900s was, scholars acknowledge this era as the formal beginning of the literary tradition in Jamaica. The volume of papers in these collections, in addition to the historical value, also hold intrinsic and institutional value because of their significance to Jamaica. It is this type of value that Conway and Proffitt have cautioned information professionals not to overlook (20). It can also be argued that Roberts himself was a significant figure in Jamaica and the fact that his collection includes documents covering practically all aspects of his life, makes his collection of even greater value. The number of correspondence within the Roberts and McFarlane collections make them valuable to not only academics but also to genealogists and other researchers.

Conclusion

The manuscript collections of Una Marson, Walter Adolphe Roberts and J. E. Clare McFarlane have research value to the extent that they include unique items and extensive materials of historical value to Jamaican literary, political and institutional development. Usage, as indicated in the citation analysis and e-mail requests, shows that the Una Marson collection has high research value. Although the citation analysis for the McFarlane and Roberts' collections does not reflect high research value, the collections have value in their potential use for research as the nature of enquiry continuously changes. Greater research on Walter Adolphe Roberts seems imminent and the case can be made that the low usage of the McFarlane collection is because the collection has not been fully indexed. Indexing might reveal rare and unique items would increase interest in and use of his collection, thereby increasing its research value.

The play scripts in the Marson collection point to potential of continued use of the manuscript collections beyond the life of the author. It therefore highlights the need for writers to actively ensure the preservation of not only their published texts but also their notes, manuscripts, and any other documentation of their work; early arrangement for deposits in a library or similar institution is one way of safeguarding their work.

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Faculty Perceptions and Patterns of Use of a Community College Library

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Abstract

Purpose: This study explored faculty perceptions of the role of the library in the teaching/learning process; investigated the extent to which faculty use the library for teaching and learning; and established the extent to which library resources meet the pedagogical needs of faculty.

Methodology: A quantitative research design was adopted. One hundred and one (101) faculty members of a community college in Jamaica were surveyed using a questionnaire.

Findings: The findings revealed 92% of faculty considered the library to be very important, 84% valued library instruction and 61% articulated satisfaction with the library services offered. Services such as access to the Internet, loan and reprography were perceived as highly important. The study also revealed that 78% underutilized specific resources (for example electronic journals) because they were either unaware of their existence or of how to use them.

Research Limitations/Implications: The data is reflective of one institution and may not be general to all community colleges in Jamaica.

Originality/Value: The study highlights those areas that community college librarians need to focus on in order to ensure that resources are fully utilised and that faculty have a positive perception of the library.

Keywords: Community college libraries, academic libraries, faculty perceptions

Paper Type: Research paper

Introduction/Background

There are eight community colleges in Jamaica, with campuses across the island: five are full community colleges, which provide training in preparation for academic certification such as certificates, diplomas, associate degrees and bachelorettes; and three are multi-disciplinary

colleges, which focus on academic certification as well as continuing education, vocational training and personal development. Although each institution is administered locally, they are collectively supervised and coordinated by a government agency known as the Council of Community Colleges of Jamaica (CCCJ). The CCCJ is a statutory body, formed by an Act of Parliament (December, 2001), which functions as an arm of the Ministry of Education. This Council comprises members of the colleges, representatives from other sectors of the tertiary and secondary education systems as well as members of business and industry. The CCCJ has three functions in these institutions: regulatory, promotional and developmental.

Under the guidance of the CCCJ, the colleges offer certificates, diplomas, degrees at the associate and baccalaureate levels, as well as several continuing education courses. They also offer professional programmes, franchised programmes and pre-university courses in collaboration with The University of the West Indies (UWI), Mona, the University of Technology (UTech) and other universities/colleges.

The collective goals of the community colleges are articulated in the mission statement of the CCCJ which reads: "Responding to today's challenges, creating tomorrow's opportunity by promoting intellectual discovery, entrepreneurial skills, social and ethical awareness, and economic opportunities for all through education that transforms lives, builds communities, and improves society locally and internationally" (CCCJ, 3). The libraries within the community colleges play a key role in the achievement of this mission and are supported by organizations such as the College Library Information Network (COLINET). COLINET, with its focal point at UTech, has forged several partnerships/agreements which support the activities of the library and are geared towards satisfying the needs for "teaching, research, publication, conservation of knowledge and ideas, and extension services" (Israel, 1). The library's collection, therefore, must be broad enough, according to Weber and Flatley, in terms of "quality and quantity for faculty to appreciate its essence and use especially in teaching and researching" (qtd. in Israel, 1). It is therefore necessary that these resources include both print and non-print materials. Aided by the consortium, the community college libraries, including the library under study, have been able to provide resources such as online databases and e-books, thereby enhancing access and keeping pace with global trends.

Gilchrist points out that academic libraries are re-focusing their role; this new role is reflected in phrases such as *teaching library, learning library* or *learner's library* in their mission statements (17). In this type of library, librarians collaborate with faculty and students to improve the quality of learning. This, he suggests, is the library of the future which must recognise "that the library manifests its design and program on four link elements based on communication and interactions among students, *faculty, librarians, information resources and curriculum*" (17). He maintains that the concept of a learning library supports the idea of students collaborating with peers, faculty working with project groups or classes, or librarians instructing students (18). Community college libraries need to create a learning environment which will support students' needs for information in order to help them achieve academic success and for faculty to teach effectively and conduct research.

Libraries have always played a significant role in teaching, learning and research. However, meaningful use of the academic library is dependent on faculty awareness, recognition and understanding of its role in the academic achievement of students. "Faculty–library collaboration paves the way to make students information literate and to make them life-long learners" (Wijayasundara 1). The broader educational role is focusing on life-long learning. Fulfilling students' complex learning needs demands opportunities for new collaborative practises between faculty and librarians as a means of better supporting teaching and learning in the community college (1).

Objectives

According to Adikata "faculty members are considered to be the inspiring and motivating factor in students' library use" (5). The role of faculty in students' library use is considered very important as librarians seek to market their services and show students how the library can help them to fulfil their informational needs and meet their academic objectives (5). Therefore, the following objectives guided this study:

1. To determine faculty perceptions of the role of the library in the teaching/learning process

2. To investigate the extent to which faculty use the library for teaching/learning

3. To determine the extent to which library resources meet the pedagogical needs of faculty

Literature Review

The review covers faculty perception of the role of the community college library in the teaching/learning process, faculty use of the community college library, and the extent to which library resources support the pedagogical needs of faculty. A few dated sources, which were considered to provide rich and relevant information, were included in the review.

Faculty Perception of the Role of the Community College Library in the Teaching/Learning Process

Faculty perception should be based on awareness of the library's resources and its services. Studies, however, have found that many academics are not aware of the available services offered by libraries. Ovadia suggested that one of the reasons faculty did not make more use of the library resources was that they simply might not be aware of them (338). Adikata also identified a relationship between meaningful use of the library and faculty awareness (1). He concluded that there was an urgent need for librarians to be proactive in creating awareness of resources available to faculty and to actively promote course-integrated library use, by supporting faculty in designing assignments. This can be done through workshops and programmes that will develop information literacy skills (12).

Faculty expect librarians to assist students to find information, teach library skills, ensure the availability of up-to-date information in the library and provide a comfortable academic environment that is welcoming and friendly (Wijayasundara 196). Baker and Adikata both showed that faculty strongly held the view that the librarian's role is important in teaching and finding information as well as creating the proper environment for users (181; 11). Todd and Kuhlthau's research revealed that faculty perceived libraries as being helpful to students particularly in using computers, finding and locating information and using information to complete assignments (96). Faculty see many opportunities in libraries, but are of the opinion that it takes effort, commitment, and shared leadership on the part of the whole institution to realize these opportunities and to identify and celebrate the learning outcomes that flow from them (Todd and Kuhlthau 109).

Faculty Use of the Community College Library

Israel, in assessing faculty use in a Nigerian university library, found that faculty members considered library use important as 30% of faculty members rated the quality of services as excellent, 49% as good, while 21% rated it as fair. Notably, none of the respondents thought the service was poor or very poor. Most faculty members agreed that 24 hour service was needed and could help to improve the efficiency of service (8). Baker found that faculty held strong beliefs about the important role librarians play in teaching the process of finding information and providing a welcoming environment for users. "Instructional faculty may see a more prominent role for librarians in the educational process than some librarians do" (181). Faculty valued the role librarians play over their own role, in supporting students with information (181).

According to Nwalo, "the library user is indisputably the most important person in any library setting" and to Aina "the library user is the focal point of the twenty-first century library and information services, as the library primarily exists to satisfy the user" (qtd. in Anyira 1). Lecturers are major users of community college libraries and they have a wide range of information needs including reading, research, being able to communicate or just sharing information. But, according to Aina, "the most important information need is the information that will enable the individual to resolve uncertainties or problems, or that will help in making sound decisions" (qtd. in Anyira 4).

The University of Iowa User Needs Assessment Group found that surveys done over the last two decades pointed out that faculty must be aware of both print and electronic resources and services available in the library in order to utilize them fully. It is more likely that faculty will make use of these resources and services when they are relevant to their needs and readily accessible (University of Iowa et al. 642). The Group also found that faculty members were the heaviest users of the resources and services, in particular both print and electronic indexes, databases, bibliographies and journals, and print books, as well as the libraries' online computer system and inter-library loan services. These are used to meet their teaching, work and research requirements. It was also shown that faculty members were the heaviest remote users of library websites and that more than half (54%) of faculty agreed that the libraries were doing a good job supporting their work (University of Iowa et al. 642).

Researchers have found that faculty use of electronic resources varies based on demographic factors such as faculty rank, discipline, age and gender. Students in the Faculty of Humanities tended to search library catalogues the most and those in the Faculty of Science, the least; lower-ranking professors used the online catalogue, electronic indexes and abstracts more than higher-ranking professors (University of Iowa et al. 190). Korobili et al., in a study of a higher educational institute in Greece, found that age played an important role in the use of electronic sources, the younger the faculty members, the more they used electronic sources (99) and like Busselle, Teo and Cheong, they found that men were heavier users of the Internet and made more use of complicated services (Korobili et al. 102). Bar-Ilan et al found that gender and academic rank have only a minor influence on the usage of e-resources and the Internet (qtd. in Korobili et al. 92). The Greek study also highlighted that the use of e-resources was highest in the School of Business Administration and Economics, and among younger members of the faculty and those holding PhDs (Korobili et al. 102).

Faculty also make use of the library by placing material on reserve for students' use. Within the three colleges studied, 65% of full-time and 25% percent of part-time lecturers responded that they placed material on reserve (Encarnacion 45). Also, 82% of full-time and 18% of part-time lecturers indicated that they explored materials. 73% of full-time lecturers made use of the general collection while only 40% of part-time lecturers used the general collection (49). It was assumed that the low figure for part-time lecturers was due to the fact that they also taught at other institutions and could get resources from them. A similar pattern was noted for the use of audiovisual resources (AV). 73% of full-time lecturers made use of AV materials while 15% of part-time lecturers used AV materials. Additionally, 85% of full-time lecturers made use of AV equipment in the classroom while 59% of part-time lecturers used AV equipment in the classroom (51).

Encarnacion showed that the services most frequently used by faculty members, full-time and part-time, were the Learning Resource Center (LRC), AV equipment in classroom, and the preparation of bibliographies for full-time instructors (83). Faculty members also accessed the library for personal use but full-time lecturers made more use of the library than part-time. The possible explanations for this difference were: full-time faculty are better informed of the library

services and they spend more time at the institution (84). It was also evident that there was a relationship between the subject of the course taught and the use of the LRC (Encarnacion 85-86). A lack of orientation on LRC services also affected use. It was found that 56% of full time faculty and 36% of part time faculty did not receive any type of orientation.

Library Resources Supporting the Pedagogical Needs of Faculty

A faculty with a strong understanding of the library and its resources is better for students, since it aids in the preparation of realistic assignments and guides students towards specific resources (Ovadia 333). In response to the question of whether they could teach their course effectively without using the LRC, 59% of full-time lecturers responded negatively, while 57% of those who are part time gave positive responses (Encarnacion 85). Allen's study of three community colleges revealed that 71% of faculty members admitted that their teaching techniques were affected by lack of resources provided by the library (qtd. in Encarnacion 10). Gibson showed that "the majority of faculty members use supplementary material from the library in preparing their lectures and class activities" (qtd. in Encarnacion 9). Lecturers need the support of the library in order to perform all of their duties successfully. Simisaye emphasized that faculty members are important users of the library; they engage in teaching, research and community services and need the library to achieve a desirable performance (3).

A study of the LaGuardia Community College library found that although configured to serve faculty, staff, and students, the bulk of resources were spent on services for students. It also showed that faculty seemed to use library resources both within and outside of the library. However, they pointed out that the reason the library was not used more by some of them was that it did not have enough of the types of material needed for their research. Others pointed out that they were able to find materials in places other than the library. It was suggested that improving the comfort of the library, increasing faculty awareness of the library collection and its services, as well as increasing librarians' knowledge of faculty expectations and being able to meet these, would increase the use of the library by faculty (Ovadia 339).

Generally, the literature suggests that faculty who use their library appreciate its supportive role, but that many are unaware of its services/support systems and consequently are not using it

sufficiently and/or effectively. This lack of use is of concern particularly because the library depends on faculty to ensure students use the library.

Research Design

Data was collected using a questionnaire. This questionnaire comprised four sections with a total of thirty (30) questions. The first section of questions required demographic information, such as the participant's academic status, educational qualification and academic discipline. The remaining three sections were informed by the objectives. Therefore, section two asked questions related to faculty perception; section three, faculty use; and section four, pedagogical support. A combination of open-ended and closed-ended questions were utilised. The population consisted of the entire compliment of one hundred and one (101) teaching faculty, both part-time and full-time. Librarians were excluded from the study as they were regarded as administrators rather than faculty.

Most of the questionnaires were self-administered. The researcher went to the institution six times over a three week period, as all of the participants could not be found at the same time. On one occasion, some of the questionnaires were left with a member of staff for distribution. Some questionnaires were not returned directly to the researcher. Persons promised to return their questionnaires at a later date, but could not be located on the researcher's return visit. Some were uncooperative, saying they did not have the time to do complete the questionnaire. This process resulted in a 70% questionnaire return rate. No follow-up was done.

Data Presentation and Analysis

The study set out to ascertain faculty perceptions of the role of the library in the teaching/learning process; to investigate the extent to which faculty used the library for teaching and learning; and to determine the level at which library resources met the pedagogical needs of faculty.

The demographic data revealed that the vast majority of respondents (92%) are full-time. The data also showed that the College has a highly qualified teaching staff with 72% holding postgraduate degrees, 5% of which are PhDs. Since research has shown that disciplines impact

use of library, this paper sought to identify the faculty to which the respondents belonged. 32% were from the Faculty of Arts and Humanities and 32% from the Faculty of Pure and Applied Sciences (see fig. 1). Of the total number of respondents, 72% have over five years teaching experience at the college and 62% are also trained teachers.
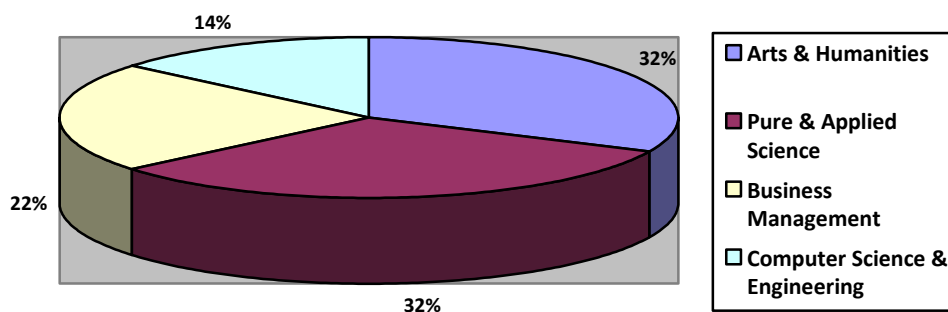

Fig. 1. Distribution of faculty by discipline

Faculty Perception of the Role of the Library in the Teaching/Learning Process

To ascertain faculty perception of the role of the library in the teaching/learning process, the paper sought to explore the extent to which faculty members valued Information Literacy Instruction (ILI) delivered to students. Participants were asked to indicate the degree to which they thought ILI was relevant to the college's educational programme in general and to their own teaching in particular. The data is reflected in fig. 2, which follows.
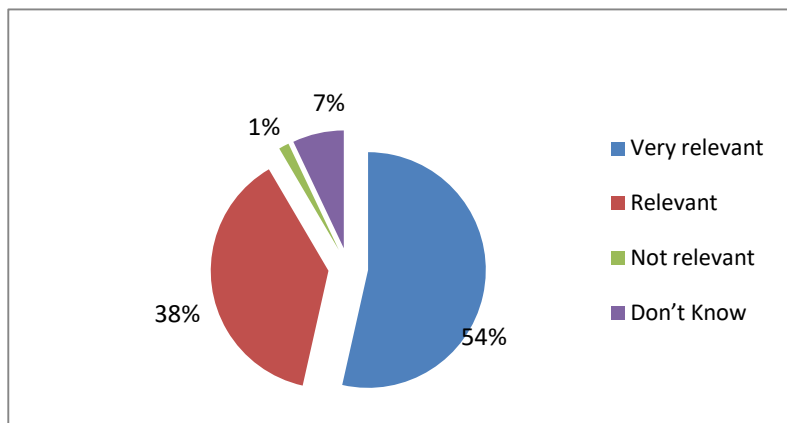

Fig. 2. How faculty members value information literacy instruction

The majority of faculty (92%) values ILI: 54% found it relevant and 38% very relevant. Most of the respondents felt that library instruction plays a very important role in the institution. Many respondents recognized that the acquisition of information literacy skills is important for students as it enables them to find, access, evaluate, and use information effectively and ethically.

Participants were asked to indicate how the library supported them in the development of their instructional plan (see table 1).

Table 1

Library support for lecturers' instructional plans

Library Support of Instructional Plans	No.	%
Provides access to materials for inclusion in lectures and reading assignments	45	62%
Provides access to subject databases	36	50%
Provides access to support materials for courses	31	43%
Provides information concerning use and distribution of copyright materials	27	38%
Purchases print and e-materials in your field of study	26	36%
Provides information and assistance for use of new resources	21	29%

Faculty indicated that the library supported them in the development of instructional plans in all six ways to some degree. This is similar to Dickenson's findings that academic libraries helped faculty teach and learn and that faculty has recognised the library's support in all areas (74). The majority of respondents (62%) indicated that the library provided access to materials for inclusion in lectures and reading assignments. A rather low number (50%) indicated that the library provided access to subject databases and indexes, which raises questions about faculty's level of awareness of these resources and suggests the need for greater promotion of them. Only 36% of respondents indicated that the library supported their instructional plan by purchasing print and e-materials in their specific fields. This low number could indicate that they are either not aware of this type of support or that they do not find the resources useful. Table 2, which follows, shows faculty assessment of the forms of library support for teaching objectives.

Table 2

Faculty assessment of the forms of library support for faculty teaching objectives

Faculty Assessment of the Forms of Library Support for Teaching Objectives	NO.	%
Assists faculty in finding appropriate information for setting of assignments and projects	48	67%
Provides faculty with access to course materials	42	58%
Provides students with skills for research papers, project and presentations in support of assignments.	39	54%
Provides library instruction to faculty	29	40%
Provides faculty/students with access to hardware & software system	15	21%
Provides inter-library loan services for faculty	12	17%
Develops specialized webpages to support courses	7	10%

The library was fulfilling its role of helping lecturers to achieve their teaching objectives. This result supports the view that the library is what Gilchrist terms "a learning library" (16). It also indicated that faculty had a positive perception of the supporting role of the library in meeting its teaching objectives.

Participants were asked to indicate the facilities they knew the library had provided for them, since awareness could lead to greater usage. Helping them to research independently was identified by the most respondents (62%). In addition, a little over a half of them identified providing facilities to utilize computers/digital technology, while 24% considered the library facilities to be inadequate for research as there was no specific space for them to work in groups and they had to use the space provided for the students. This result is consistent with the University of Iowa's finding that faculty wanted expanded study space and improved physical facilities (627). Korobili et al. also pointed to a need for administration to improve library facilities and include more workstations for accessing e-resources (98).

Faculty Use of the Library

The researchers sought information on the use of the library by faculty and how they integrated library resources into their teaching/learning activities. Researchers also examined Faculty's level of satisfaction with the services and sought to identify what, if anything, affected their use of the library. In seeking to determine the frequency with which the community college faculty used the resources of the library, the researchers wished to see if their findings would support existing literature which indicated that faculty used the library rarely or occasionally (see table 3, which follows).

Table 3

Frequency of use of the library by faculty

Frequency of Library Use	No.	%
Daily	1	1%
Once per week	6	9%
2-3 times per week	9	13%
Once per month	22	31%
Twice or more per month	8	11%
Once per semester	13	18%
I don't use the library	12	16%
No response	1	1%
Total	72	100%

The majority of faculty used the library at least once per month, with a minority using it at least once per week. Kotso's study of library use by lecturers showed that 81.5% of faculty visited the library rarely (52), while Awojobi, in a similar study, evaluated faculty patronage as rather low (qtd. in Simisaye 4). Here, the finding that 34% use the library once per semester or not at all also shows that a small number of faculty is reluctant to use the library facilities. This might be attributed to the limited facilities provided for faculty. Furthermore the 17% of respondents who did not use the library at all, may be choosing alternative sources of information.

Participants were asked to select the reasons they used the library as this could help to identify the services that faculty might consider to be the most important or useful to them in their work (see table 4, which follws).

Table 4

Faculty reasons for using the library

Reasons for Using the Library	No.	%
Borrow library materials	38	53%
Prepare lectures/teaching notes	23	32%
Use multimedia centre/online database	22	31%
Review literature	11	15%
Reading leisure	5	8%

The most popular activity for which the library was used was borrowing books and other materials. This may be so because faculty needed these materials for lesson planning and delivery. Far fewer faculty came to the library to access online databases or the multimedia centre, possibly due to space constraints and/or the lack of ready access, due to frequent technical difficulties with equipment. Another explanation for the low usage of these resources could be that faculty have remote access to online databases. Notwithstanding these possible explanations, there is little doubt the community college faculty members prefer print materials. Ijirigho found a similar preference in his study on faculty expectations of libraries: "despite the increasing availability of online resources, faculty do not want to part with paper-based library as they prefer information in print format" (12). The data also showed a low 32% of faculty using the library in their teaching and learning activities which could indicate the need for improved facilities.

Participants were asked to select the materials they used most often and thus indicate their preference for print or electronic material (see table 5, which follows).

Table 5

Types of material most often consulted by faculty

Materials Consulted	No	%
Text books	42	58%
Electronic resources	32	44%
Reference materials	16	22%
Print journals	14	19%

Text books were the most consulted materials in the library followed by electronic resources, then reference materials. Print journals were the least consulted. Despite the availability of electronic resources in the library, traditional print material continued to be the most utilized library resource. Korobili et al. found that although faculty members used e-resources quite frequently, the majority of them used printed sources to a greater extent (104). Kumbar and Lohar revealed that the majority of respondents in their study also consulted text books, among other printed materials (83). A library may subscribe to fewer print journals to offset its investment in electronic databases and/or because of budgetary constraints. The literature shows that when libraries are forced to cut their budgets, print journals are usually the first target since, it is reasoned, they can be replaced by electronic journals. This position may have influenced the finding that only 17% of respondents indicated that they used print journals.

Faculty was asked to rate nine services offered by the library. The top three rated services (in descending order) were: the Internet, loans and photocopying. Israel revealed a similar result; the two top services in his study were loan and the use of the Internet. Evidently faculty in this community college value the library services since all the services are used by faculty to some extent. This result clearly supports the view that a hybrid collection is foreseen as the 21st century library for this community college and is in keeping with the trend seen in supporting literature.

The researchers sought to identify possible deterrents to faculty members making maximum use of the library and its resources (see table 6, which follows).

Table 6

Issues that limit faculty library use

Issues that Limit Library Use	No.	%
Insufficient materials	31	43%
Inability to access e-database	9	12.5%
Inability to access materials from shelves	8	11.1%
Lack of awareness of resources/services	8	11.1%
Lack of assistance from librarian	2	2.7%
Unfriendly library staff	2	2.7%
No response	12	16.6%
Total	**72**	**100%**

The result overwhelmingly supported the view that insufficient material in their individual field of study negatively affected the use of the library by more than half of the faculty. Only 15% saw the inability to access electronic databases as a limitation and an equally low percentage (11.1%) saw the inability to access material from shelves and lack of awareness as factors. More positively, the lack of assistance from librarians and unfriendly library staff played minor roles in faculty not using the library. It is evident that insufficient materials in the area of study will affect use of the library; faculty members often blame low usage on the lack of current and relevant resources in their disciplines (Simisaye 4; Ovadia 339). To the contrary however, Israel found that a lack of awareness of library materials/services was what limited faculty usage, followed by the inability to access electronic databases.

Participants were asked to rank their level of satisfaction with library services. This question sought to find the extent to which faculty thought the library was meeting their expectations. A little more than half of those participating indicated that they were satisfied with the level of service while approximately one-third said they were very satisfied. While a minority was dissatisfied, it should be noted that none of those who participated in the survey indicated that they were very dissatisfied. This positive result is similar to, but not as good as Yusuf's, who found that over 90% of faculty were satisfied with library services and resources (8).

Participants were asked to suggest what, in their opinion, could be done to improve the library services. A total of forty participants responded to this question. Most mentioned a need for current and relevant materials in their area of work. One respondent referred specifically to Mathematics and another to the Skin and Beauty Therapy. The second major area of concern was multimedia. Respondents mentioned the need for another area or larger space with more workstations for Internet access; more access to online databases for research; more e-books. Faculty also saw the need for improvement in customer service and for library staff to be sufficiently familiar with the library collection that they would be able to assist faculty with little or no delay. Some respondents identified a need for flexibility in the loan and photocopying policies. Since these services were highly used by faculty members, it seemed that the policy should be reviewed to see whether it would be possible to improve efficiency and meet faculty expectations (see figure 3, which follows).
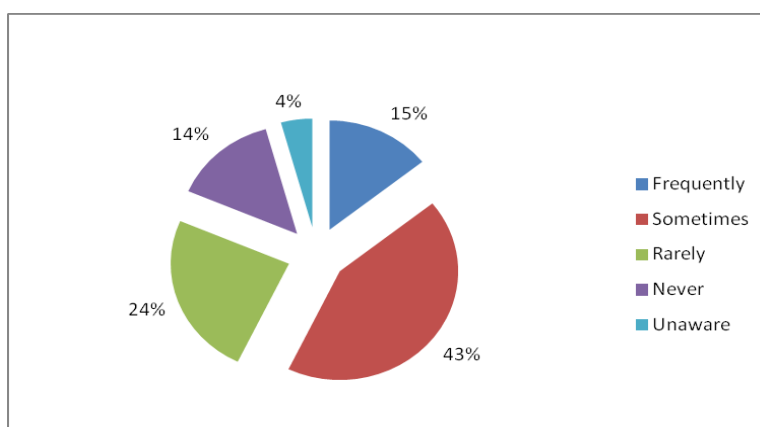
Fig. 3. Usage of electronic reserve services by faculty

Approximately one half of the participants indicated that they either frequently or sometimes utilized the electronic reserve services in the courses that they taught. These services allow faculty and students to make online requests for especially scare, in demand materials to be made available to them at specified times, provided they are not already reserved by others. However, as much as 39% of faculty had rarely or never used these resources and a startling 3% did not even know of their existence. This response is not unusual in community colleges; Feldman and Sciammarella's, in a study of six community colleges in New York, reported that faculty members admitted that they had under-utilized the library and that they were not fond of

computers. The finding is troubling considering the amount of money invested in acquiring these resources and the move towards their use in teaching and learning.

Data revealed, however, that the majority of faculty recommended the use of print and electronic resources to their students either frequently or occasionally. 83% of faculty were using, integrating into their curriculum, and referring students to print resources found in the library. This strengthens the point that faculty appreciated the importance of the library as a support tool for students more so than for themselves. According to Adikata, faculty are considered the inspiring and motivating factor in students' library use (5). Only 4% of respondents indicated that they had never encouraged students to use the library's resources. Husain stated that, in this information age, the teacher must teach the student how to learn and a part of this process involves motivating students to acquire content from various sources, including those in the library (Husain 36). This finding, therefore, was a positive one. However, Ijirigho also stated that if faculty are acquainted with and use the library resources, it is presumed the students will value their library and be encouraged to use it also (2). Baker et al. found that most students did not use the library unless they were required to do so by their lecturers (Keeler 45).

Ijirigho stated that students will make use of library services if their lecturers use the services and encourage students to use them. Most studies have shown that faculty, although they are major users, visit the library once a month or rarely either to borrow books or to use electronic resources to prepare for lectures and class activities.

Library Resources Supporting the Pedagogical Needs of Faculty
A primary mandate of the academic library is to provide sufficient and reliable resources to support the pedagogical activities of faculty so that they can perform their daily tasks effectively. Additionally, it is the responsibility of the library to ensure that faculty is made aware of available resources and how they may use these resources to their advantage.

Participants were asked to rate the adequacy of the computer facilities for faculty in the library. A vast majority, 74% of respondents, said that there was a need for more computers to access the Internet in the library, while 90% indicated an awareness of the availability of electronic

journals. The first point is supported by the fact that there were 28 computers in the library, for the use of both the faculty, numbering one hundred and one, and the entire student body. The researchers sought to investigate the adequacy of books provided by asking faculty to respond to the following statement, "I am most often able to find the books I need to support the courses I teach" (see table 7, which follows).

Table 7

Faculty's ability to find the needed books in the library collection

Finding Needed Books in the Library	No.	%
Strongly disagree	5	6.9%
Disagree	23	31.9%
Agree	33	45.8%
Strongly agree	6	8.3%
No Response	5	6.9%
Total	**72**	**100%**

More than half (54.1%) of participating faculty agreed that they were usually successful in finding the books they needed in the library. However, it should not be ignored that 38.8% of faculty disagreed, as this is strong evidence of the need for current and relevant books in the library. One reason for this high level of disagreement about the adequacy of the collection could be the lack of specific discipline related materials. Ovadia put forward this explanation in his study (339) as well as that books were purchased with students in mind rather than with faculty (332). The fact that 38.8% indicated that the library was not meeting their pedagogical needs might contribute to a negative impression of the library in the teaching/learning programme.

Participants were asked to indicate the extent to which they were able to find print periodicals in their library (see table 8, which follows).

Table 8

Faculty assessment of the adequacy of print periodicals

I usually Find the Needed Print Periodicals in the Library	No.	%
Strongly disagree	4	5.5%
Disagree	23	31.9%
Agree	35	48.6%
Strongly agree	3	4.1%
No response	7	9.7%
Total	**72**	**100%**

A half of the respondents indicated that they were usually successful in finding the periodicals they needed in the library. This result revealed that the periodical needs of approximately a half of the faculty were not adequately satisfied. Print periodicals are very expensive and when libraries cut their budget the first thing to be reduced is the allocation for print periodicals since this could be replaced with online/electronic formats. Also, if persons were more inclined to use print rather than electronic resources, the challenge to find what they wanted would be greater as more electronic resources were purchased and fewer print. Participants were therefore asked about their ability to find needed electronic resources in the library so as to determine how satisfied faculty members were with such provisions. It should be noted that sometimes even when titles are available, access to them can be impeded by several factors.As much as 77.7% percent agreed or strongly agreed that they were able to access the e-resources they needed through their library. This result helps to highlight the point that electronic resources enhanced and improve access to a library's collection (University of Iowa et al. 627-646). In relation to other library materials, however, a total 63.8 % indicated that at times, they found the materials they needed at other libraries. Ovadia made the point that some faculty were able to find materials outside of the library, but he considered that it was important that faculty were made aware of the collections and services offered by their library and that their expectations were met in their own institutions (339).

Participants were asked to select all the library services/resources that they have used over the past year. This question was meant to find out which services/resources were currently being used and also to highlight the most used services/resources. Of all the resources the college library offered, use of print resources was highest over the past year (83.3%), this was followed by use of electronic databases (62.5%). The results also revealed that, despite the continuing integration of electronic resources in academic libraries, print resources remain the most frequently utilized resources among the community college faculty. Dickenson's study also revealed that the top two most used resources were printed resources and electronic databases (44). Additionally, the library was used for meetings, to conduct research, for use of the computers and loan services.

Participants were required to give multiple responses as to their reasons for using the library's website. The responses were expected to provide insight into their knowledge of the website and how it might extend their use of the library for teaching/learning (see table 9, which follows).

Table 9

Faculty use of the library's website

Reasons for Using the Library Website	No	%
Search electronically for journal articles	34	65.3%
Obtain accurate citation for information	15	28.8%
Search the library's home catalogue	14	26.9%
Obtain research assistance	13	25%
Obtain information on utilization of copyright	12	23%
Correspond with library staff	11	21.1%
Obtain information about library hours and services	9	17.3%
Arrange for bibliographic /information	8	15.3%
Set up course reserve materials	7	13.4%
Search the catalogues of other libraries	5	9.6%
Obtain information on library policies and opening hours.	4	7.6%
Request interlibrary loans	2	3.8%

Of the twelve listed uses of the website, the most popular was to search electronically for journal articles using online databases (65.3%). The fact that all areas listed in the table were used by at least two faculty members indicated that the efforts made by library staff to educate faculty about the website and its many uses were reaping success.

The practice of searching online journals using the library's website came second. Table 9 shows that this community college faculty used the library's website mostly to search for online journals. Only 26.9% said that they used the website to search the library's catalogue and 21 % percent used it to correspond with library staff. These low scores, along with even lower scores for other services, could indicate that some faculty members were not aware of the services that could be accessed through the website and therefore did utilize it fully.

Faculty displayed a general reluctance to part with paper-based materials. They used more printed resources over electronic databases and they also consulted more books over electronic sources. The researchers cannot ascertain whether there is a relationship between this information seeking behaviour and chronology as has been suggested by the University of Iowa et al. and Korobili et al. A large percentage of faculty are not aware of the library's website and do not use it. It is clear that there is a need to address the issue of available resources in this community college and how to access and use them. Noteworthy is the fact that those who indicated that they did not use the library said that their grounds for not using the library was lack of current and sufficient materials even though the library provided many e-books, and databases with a variety of e-journals. Librarians should be alerted to the fact that there is a small group of faculty that fear technology or do not know how to access materials.

It is apparent that the reasons library resources may not meet the pedagogical need of some faculty could be that materials are not purchased with them in mind but rather with students in mind. Materials not being purchased for particular faculty members could also be the reason some faculty members do not use the library. Additionally, faculty indicated that there were always other libraries where they could find needed resources.

Conclusion and Recommendations

This study set out to ascertain faculty perception of the role of the library in the teaching/learning process, to investigate the extent to which faculty uses the library for teaching and learning and to determine the level at which library resources meet the pedagogical needs of faculty.

The community college library places a high level of importance on faculty use. It can be concluded that faculty use the library to borrow materials to assist them in classroom teaching; they also make use of the multimedia centre which provides electronic services and access to online databases. Text books are heavily used and faculty welcomed the loan services, with half of faculty making use of this service. Although the provision of access to the Internet is valued by faculty over all other services, with loan services following closely behind, faculty used all the services provided. Generally, faculty was satisfied with the services provided by the library; however, members have indicated that there is need for more current and relevant materials. The study also suggests that in order to improve the services to faculty, there is need for wider access to e-resources, Internet services, work stations and improved customer service.

Data showed that the majority of faculty were motivated to utilize the electronic services offered by their library and also to recommend these services, including specific databases, to their students. Print resources were also recommended to students by their lecturers. However, faculty felt that insufficient materials was the greatest hindrance to use of the library. This highlights the need for more current and relevant materials which would increase the value faculty placed on the library. Lack of awareness of available resources, the inability to access e-resources and to find print resources on the shelves are also seen as hindrances to library use.

The researchers found that the use of the library is, to a large extent, similar to that of other college libraries discussed in the literature. It must be noted however that, while all the services were used, the top two services were Internet/e-services and book loans.

The data revealed that the Community College faculty viewed the library as playing a vital role in providing library instruction and supporting their instructional plan and teaching objectives; and that they used the facilities provided by the library to a large extent. Faculty recognized that

library instruction is very important to students. This high regard for library instruction may be related to the finding that most of the community college librarians are qualified to teach. Most of them also teach in the library school within the institution. It could also be related to the collaboration between librarians and faculty, as several faculty members see the library as supporting their teaching objectives by providing them with adequate materials and resources. Further research however, should be conducted in other community colleges in Jamaica since the results of this research cannot be generalized to all community colleges. The library is also charting its way forward. This can be seen in its acquisition of databases and e-books and its provision of links to other electronic resources that can be accessed remotely. Such initiatives help to clarify the concept of "libraries without walls" and improve faculty perception of the library.

Despite some talk of the demise of libraries, various authors argue that their work remains relevant and that in order to meet the needs of users they must provide access to new electronic resources while continuing to buy print material. There are lasting benefits to be gained from library/faculty collaboration in that it reinforces overall academic success, provides a base of reference support, and aids collection development. If meaningful use of the library's collection is to be achieved, faculty must be aware of the services and resources available to it. The library must also meet faculty expectations of a comfortable, welcoming and friendly library environment within which to work.

Recommendations

- The college should develop a detailed, documented strategy, which might take into consideration the results of this study, to guide the development and optimal use of the LRC.
- The library's administration should provide access to additional print and electronic materials that are current and relevant to programmes and courses being offered by the institution.
- The library administration should seek to increase library space to include a larger multimedia centre with more workstations for access to e-resources and comfortable study areas, with outlets to accommodate personal devices, for faculty members.

- Regular publicity should keep the staff informed about the library's website and how to access resources through it. Librarians should also intensify their efforts to create awareness of resources through social media, mobile phones, and emails. Such initiatives should improve faculty's usage of resources and also help to dispel negative perceptions about the library's usefulness generally and to faculty in particular.

- The librarian should seek opportunities to conduct workshops in information literacy, which should increase staff awareness and use of library resources, especially electronic resources.

- Librarians should intensify their efforts to establish better faculty-library collaboration in order to increase faculty awareness of the library's resources and how they can facilitate and improve student performance.

- This research should be replicated in other community colleges in Jamaica. A comparison of the results could reveal weakness that COLINET could address in its planning for the development of college libraries and for continuing education workshops for college librarians.

- Further research should be done to examine how faculty actually interact with information, what specific electronic sources they prefer, what search strategies they use, and to what extent their information needs are being satisfied by their institution's library.

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The Jamaica Library Service's Technology Programme: Transforming Service, Impacting Development

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Abstract

Purpose: This paper discusses the Jamaica Library Service's technology programme and its contribution to the achievement of Jamaica's national development goals and the United Nations' 2030 Sustainable Development Goals (SDGs).

Methodology: Data collected from the impact assessment surveys conducted for the three year ICT Project "JLS: Using Technology to Empower Individuals and Communities for Development", which received grant funding from the Bill & Melinda Gates Foundation with co-funding from the Government of Jamaica (GoJ), was analysed using the guidelines set out in *Global Libraries: Impact Planning and Assessment Guide* (Bill & Melinda Gates Foundation).

Findings: The project's achievements, as evidenced by the impact assessment surveys done in 2014, 2016 and 2017, indicate that the JLS is supporting national development and the SDGs. The paper further reveals that technology is transforming public library services in Jamaica and though the achievements of the JLS may be considered to be small steps in the development process, they do contribute to the transformation of Jamaica as a knowledge–based Information and Communication Technology (ICT) intensive society.

Research Limitations / Implications: The time period of April 2014 – March 2017 captured in this research paper may not sufficiently reflect the Jamaica Library Service's technological contribution towards the achievement of Jamaica's national development goals. Further, the impact of the technology programmes may be under-reported due to insufficient data in some cases. Additionally, there was no foundation for the research because little has been written about technology in public libraries in the Caribbean context. As such, the research may not reveal the underlying causes that influenced transformation.

Originality / Value: This paper represents a significant achievement as it is the first published, scholarly, national study on public libraries in Jamaica with an emphasis on technology. Collectively, the assessments have illustrated the significant contribution that public libraries have made to the social, educational and economic advancement of the individuals they serve.

Keywords: Jamaica Library Service, JLS, public library, Information and Communication Technology, ICT, national development, Bill & Melinda Gates Foundation, Global Libraries Initiative

Paper Type: Research paper

Introduction

Development involves a progressive transformation of the economy and society, the major objective being the satisfaction of human needs and aspirations. The purpose of development is "to attain increased production for economic growth" (Azubuike 2). Sustainable development requires meeting the basic needs of all, and extending to all the opportunity to satisfy their basic aspirations for a better life (World Commission 54; ch. 2). National development refers to the ability of a nation to improve the lives of its citizens. Recognising the importance of achieving development, Jamaica has, over the years, created and implemented several plans and initiatives toward this end, the most notably being Vision 2030.

Jamaica's National Development Goals and the UN 2030 Agenda

The country's Vision 2030 Jamaica: National Development Plan, is encapsulated in the National Vision Statement: "Jamaica, the Place of Choice to Live, Work, Raise Families and Do Business" (Planning Institute of Jamaica 2). This plan mirrored the UN 2030 Millennium Development Goals which were revised in September 2015 when member states of the United Nations adopted "Transforming our World: The 2030 Agenda for Sustainable Development" (*Access and Opportunity*). The new UN 2030 Agenda is an inclusive, integrated framework of seventeen Sustainable Development Goals (SDGs) spanning economic, environmental and social development.

Vision 2030 Jamaica: National Development Plan identifies four national goals:

Goal No. 1 Jamaicans are empowered to achieve their fullest potential
Goal No. 2 The Jamaican society is secure, cohesive and just
Goal No. 3 Jamaica's economy is prosperous
Goal No. 4 Jamaica has a healthy natural environment (Planning Institute of Jamaica 15)

Goals 1 and 3 of Vision 2030 as well as the National Outcomes, particularly: "World class education and training" and "A technology enabled society" indicate that Jamaica is charting a development course which recognises the need for a knowledge-based society, which is globally competitive and productive (Planning Institute of Jamaica 18). Additionally, it is important to note that the Government of Jamaica (GoJ), recognising the value of ICT, developed an ICT policy in 2011. The policy mission is "to achieve greater social and economic development for

the people of Jamaica through increased application of ICT in all sectors facilitated by affordable ICT services". Articulated in the main principles is that "ICT will be utilized as a key enabler for human, social and economic development, and that ICT is to be widely available and utilized by the general public" (Jamaica. Office of the Prime Minister 18-19). Consequently, this paper focussed on Goals 1 and 3 of Vision 2030 and on these two particular National Outcomes with the objective of determining the impact of JLS's technology programme on these. Impact was assessed via the collection and analysis of the findings of surveys done in 2014, 2016 and 2017 against these goals and national outcomes.

Background

With the explosion of technology in the 21st century, information and access to it have modernized human daily interactions, from communication to transportation, to how business is conducted. This new mode of operation has also impacted the traditional role of libraries. Computers, handheld devices and smartphones have enabled people to access information with the swipe of a finger. While these new processes for living have been advantageous, they have also proved challenging, particularly for developing countries that have been unable to fully integrate into the global economy, as they lack the social and economic capacity to do so. In the case of Jamaica, the ICT sector represents 22% of all service sectors (JAMPRO). While there has been significant headway in the local ICT sector, some households in Jamaica, especially those in rural areas, are excluded as they do not have the financial resources necessary to participate. Access to technology data has revealed that while more than 90% of households have a telephone, the number of households with computer and Internet service is below other countries in the region (Mona School of Business 1). It is therefore evident that there is an imbalance in terms of access to these basic technologies. The JLS, which is the public library service in Jamaica, has therefore sought to correct this imbalance in order to support the development of a technology enhanced society beginning at the community level.

The JLS

Jamaica is divided into 14 parishes (parishes are similar to counties in the United States of America). The JLS islandwide network comprises: 13 parish libraries (also referred to in this paper as main libraries); 106 branch libraries (form part of the public library system, usually

located in more rural areas of each parish); and 370 community stops through the mobile library service. The parish libraries, branch libraries and mobile libraries are all public libraries, funded by the GoJ. Special services are also offered to children's homes, the visually impaired, hospitals, infirmaries and correctional institutions, reaching a large percentage of the Jamaican population in both urban and rural areas. A significant number of Jamaicans do visit the JLS network of libraries, and though the figure represents repeat visitors, traffic at the locations was recorded at 2,790,777 between April 2016 and March 2017.

For several years the JLS's plan to develop its technological capacity included:

- Implementation of Wide Area Network (WAN)
- Implementation of an Integrated Library Management System (ILMS)
- Expansion of Internet access, including wireless access to all locations and on mobile libraries
- Increased number of public access computers
- Re-designed website
- Introduction of social media platforms
- Introduction of new programmes and services utilizing the technology

Though there was the will, funding challenges thwarted transformation. In 1996, JLS introduced access to computers and the Internet on an ad hoc basis. Its efforts were supported by civic society and private sector entities, as there was no approved government budgetary provision for ICTs in public library services. The ICT service provided through the use of computers and access to the Internet remained limited as this was a costly venture and any expansion would have required a large outlay of funds. The programmes utilizing technology were confined to basic computer training and were offered primarily to select groups of senior citizens in limited numbers in some main libraries.

The development of the service continued to be dependent primarily on partnerships. The Culture, Health, Arts, Sports and Education (CHASE) Fund and the Universal Service Fund (USF), the latter more so, were two entities which provided, and continue to provide, strong support for the development of ICTs in public libraries. These partnerships enabled the provision

of public access computers, Local Area Networks (LANs), WAN and broadband access to more locations islandwide. Through these efforts, on May 1, 2008 the JLS was able to remove the user fees charged to access computers and the Internet, making it the largest free Internet provider in the country.

In 2014, support was also received from the Sugar Transformation Unit, Ministry of Agriculture & Fisheries to acquire public access computers through funds provided by the European Union for projects in select sugar dependent areas. The Universal Service Fund, in 2016/2017, approved funding to support the implementation of an ILMS to automate library operations. This was done utilizing the Koha open source software. The funds provided for staff training, cloud hosting, additional computers for administration and other ICT devices to support material circulation. This resulted in the provision of access to electronic resources, Online Public Access Catalogue (OPAC) and personal library user accounts; the implementation is ongoing.

The Global Libraries Initiative Project

JLS in its quest to continue the planned national transformation of the organization's provision of ICT services, explored several initiatives over the years. On March 14, 2012, JLS was invited to respond to a "Letter of Interest" from the Bill & Melinda Gates Foundation, Global Libraries Initiative. JLS was among three libraries from Central America and the Caribbean region selected for consideration based on the following criteria:

- The existence of a public library system
- Past and current government support and involvement
- Interest in providing technology services for the public
- Potential for growth with a focus on long-term sustainability of the implemented service.

On July 31, 2013, the Foundation approved a grant totalling US$1,999,996.00 to fund the project entitled "JLS: Using Technology to Empower Individuals and Communities for Development". The funds from the Foundation would be augmented by the contribution of US$1,133,804.00 from the GoJ. Focussing on two of the Foundation's seven impact areas – education and digital inclusion, the project was envisioned to empower Jamaicans to lead more productive lives through the provision of additional ICT resources, enhanced services, programmes and training

initiatives in public libraries. The project provided an avenue for the organization to improve its contribution to the achievement of Vision 2030 Jamaica. The project's objectives were to:

1. Provide Jamaicans with increased access to ICT services

2. Provide ICT and other training programmes to promote personal, organizational and national development

3. Provide new and enhanced programmes and services responsive to users/non-users/stakeholders' needs

4. Promote programmes and services to existing and potential users to increase library usage

5. Create greater awareness of the value of public libraries in communities to build local and national support.

Literature Review

It is widely acknowledged that libraries make an important contribution to development and that public libraries in particular add positive value to the communities they serve. According to Sey et al. public access venues, such as libraries, have been found to be valuable for countries worldwide as they are fulfilling multiple needs for all population groups (148). The Global Impact Study of Public Access to Information and Communication Technologies conducted in eight low to middle income countries representing a diversity of socioeconomic settings, reported that the social and economic impacts of public access to ICT included first-order effects (digital inclusion) and second-order effects (social and economic impacts). Digital inclusion was identified as the fundamental first-order effect. The report further stated that populations which lack access to ICTs are disadvantaged in the global economy. Public access venues, such as libraries, enable populations to mitigate limitations such as poverty and lack of digital skills which stymie their ability to access and make productive use of ICTs (Sey et al. 11). The study also showed that social and economic impacts are the second-order effects of providing digital inclusion through public ICT access and concludes that the availability of public access enables users to participate in aspects of personal, social, economic and civic life (Sey et al. 98). The study emphasized that providing public access to technology, including that provided by public libraries, can:

- Change personal, social, economic and other realities of life through the provision

of technology and human tools (that opens up the informal society)

- Support the development of knowledge and skills to navigate the digital world
- Support communication and social interaction
- Support information seeking on diverse types
- Support service seeking in multiple areas of the economy
- Improve efficiency and reduce transportation cost to get things done
- Support pursuit of leisure activities. (Sey et al. 91)

According to The Global Information Technology Report 2016, only 25.7% of Jamaican households had Internet access, placing it 90th out of 139 countries. The highest placed country was the Republic of Korea with 98.5% access while Burundi was last with 0.1% (Baller 241). The extent of Internet use for learning purposes in schools in Jamaica was valued at 4.2 out of a maximum value of 7 which placed the country at 73rd out of 139 (Baller 265). Therefore, free access to ICTs in public libraries where staff are trained to guide their use is an effective strategy for those who need it most and is of considerable importance to support access to technology for all and to improve Jamaica's technology related rankings.

In the context of the UN 2030 Agenda, the International Federation of Library Associations (IFLA) believes that increasing access to information and knowledge across society, assisted by the availability of ICTs, supports sustainable development and improves people's lives (*Access and Opportunity*). In 2015, IFLA administered a survey that gathered examples of how libraries contributed to the United Nations 2030 Agenda and the Sustainable Development Goals. Many contributions were received from all over the world and the information was published by IFLA in June 2016 in the booklet and handout, *Access and Opportunity for All*. IFLA has identified a number of areas in which libraries can provide access to information and thus support, these are: poverty eradication, agriculture, quality education, health, public access to ICT and universal service provision, culture, economic growth and all other SDGs (*Access and Opportunity*). Worldwide, 320,000 public libraries and more than a million parliamentary, national, university, research, school, and special libraries ensure that information and the skills to use IT are available to everyone, making them critical institutions for all in the digital age (*Access and Opportunity*).

Libraries provide ICT infrastructure, help people develop the capacity to use information

effectively, and preserve information to ensure ongoing access for the future generations. They provide an established, trusted network of local institutions that can reach out effectively to all parts of the population. This position is supported by Sey et al. who stated that libraries are among the public access venues that play a critical role in extending the benefits of ICTs to a diverse group of people globally (142). Libraries and access to information contribute to improved outcomes across the Sustainable Development Goals (SDGs) by:

- Promoting universal literacy including digital, media and information literacy and skills, with the support of dedicated staff;
- Closing gaps in access to information and helping government, civil society and business to understand local information needs better;
- Providing a network of delivery sites for government programmes and services;
- Advancing digital inclusion through access to ICT;
- Serving as the heart of the research and academic community; and
- Preserving and providing access to the world's culture and heritage. (*Access and Opportunity*)

JLS, in providing free access to computers and the Internet, training and lifelong learning opportunities supports personal, community and national development. However, the available scholarly literature on public access to technology in Jamaica has never referred to or recognized the potential or the contribution that public libraries can make or are making to the use of ICTs and how this can impact development. It is this gap that this paper attempts to fill.

Methodology

Under the Global Libraries Project, the JLS contracted the Centre for Leadership and Governance (CLG), The University of the West Indies (UWI), Mona, to conduct research on the impact of the programme, in four sections:

- Needs Assessment Survey – September 2014

- Baseline Study - September 2014

- Impact Study - October 2016

- Second Impact Study - March 2017

The instruments for data collection were developed utilizing the Global Libraries Performance Matrix System (PMS) and Common Impact Measurement System (CIMS) which were used to collect data for the baseline and impact studies. The CIMS is a framework that enables Global Libraries and its grantees to understand the impact on the lives of the people they serve. It

provides a standard approach for data collection and analysis and defines the outcomes to be measured across seven indicators as listed in the table 1, which follows:

Table 1

CIMS indicators adapted from *Global Libraries CIMS Guide*

	Example of Indicators from the CIMS
Digital Inclusion	Library visitors from marginalized groups use technology to address their needs.
Culture and Leisure	Library visitors increase their awareness of community or civic activities.
Education	Library visitors increase their use of informal learning opportunities.
Communication	Library visitors use technology to communicate with family and friends.
Economic Development	Library visitors use technology to find agricultural information.
Health	Library visitors find health information that meets their needs.
Government and Governance	Library visitors use technology to access government resources and information.

The CIMS complements the Performance Metrics by collecting data about the impact of projects on people's lives and informed the approach to the Baseline and Impact Studies (*Global Libraries Impact* 29-30).

Sample

Random sampling was used to generate the samples for all three assessments, with quota sampling in the initial stage and probability sampling in the final stage. The sample was drawn from the JLS database of public library users and was stratified by parish, gender and age. A comparison of the three samples is shown in tables 2 and 3, which follow:

Table 2

Sample size

Surveys	**Sample**	**Date conducted**
Baseline	602	2014
First Impact	293	2016
Second Impact	510	2017

Table 3

Age distribution of sample

	Baseline 2014	1st Impact 2016	2nd Impact 2017
Adults (25 yrs. & above)	15%	29.7%	26.3%
Young Adults (15-24 yrs.)	41%	34.1%	48.6%
Children (8-14 yrs.)	44%	36.2%	25.1%
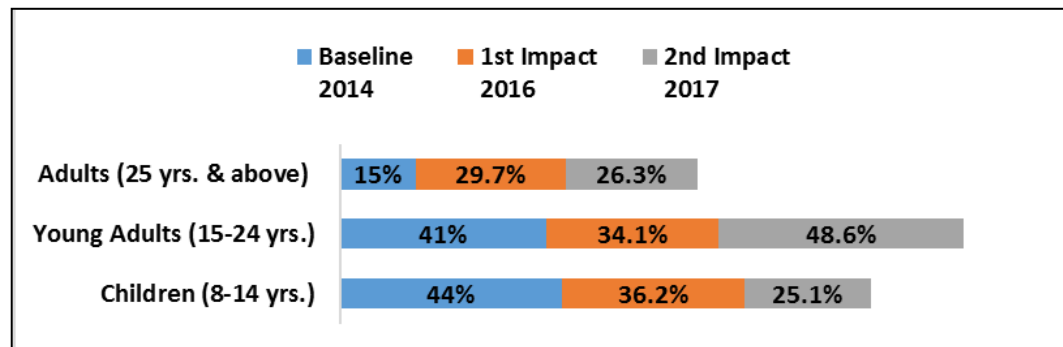
Data Collection

Data for each study (Baseline Study-September 2014; Impact Study-October 2016; Second Impact Study-March 2017) was collected over a two month period with the use of a self-administered questionnaire (See Appendices).

Data Analysis and Interpretation

The data was analysed with the aid of the Statistical Package for the Social Sciences (SPSS) statistical software. Data was presented in the form of tables and figures. A report was generated at the end of each study.

Limitations

In conducting the studies, several challenges were experienced by the research team; some of these included:

- A low response rate to the first impact study; as such, over-sampling was used to mitigate this in the second impact study. This resulted in higher numbers of the young adult and adult groups in the second impact study when compared to the first. This may also be responsible for the decrease in some of the 2017 figures. The second impact study was conducted during the period of the Caribbean Examination Council (CXC) exams when fewer students may have been at the library.

- Additionally, the impact studies should have been conducted at one year intervals but, due to the project's three years limit, the second impact study was conducted six months after the first.

- There was a delay in the execution of new training programmes. While technology was a component of the summer programme from year one of the Project, the new ICT programmes were implemented after the second impact study was completed. Therefore, the impact of these courses would not have been captured in the surveys.

Presentation and Analysis of Findings

The studies provided valuable information on users and non-users, library staff and librarians as well as key stakeholders' assessment of the programmes and services offered and their impact. Results are presented under the following headings:

- Needs Assessment Survey Results
- Baseline Study Results
- Impact Study Results
- Second Impact Study Results

Needs Assessment Survey Results

The Needs Assessment results revealed the following:

- Basic Information Technology Skills Training - 76% of users indicated that they would be interested in Computer Skills Training.
- Using Social Media (e-mail, Skype, Facebook, blogs etc.) - 58% of users use the Branch Libraries and 42% use the Parish Libraries to access the Internet and social media.
- Digital Literacy – 63% of users would be interested in accessing online books. In addition, the needs assessment showed that digital literacy was a major staff training need.
- Microsoft Office Suite Training - 60% of staff classified their computer knowledge and skills as intermediate. In examining this breakdown of computer literacy it was noted that only 1% of staff knew how to use Excel. Microsoft Suite overall showed a need for training.
- Technology Management - 55% of staff indicated that training is needed in general technology troubleshooting and assisting with maintaining the network, among other issues.

- Wireless Access **-** 43% of non-users would be interested in WiFi access at their local library

The Needs Assessment results revealed that improvement was required in a number of technology related areas. It also pointed to the important role that the library could play in community development. Both users (86%) and non-users (83%) were of the view that the library could contribute more to community development as the library was viewed as an important ICT space in the community (Centre for Leadership*, JLS*: *Using Technology* 20-52).

Baseline Study Results

The Baseline Study sought to audit understanding and perceptions of the organization — its purpose and the public's awareness of its programmes and services, assess the impact of the library on users, and form evidence-base for the development of programme and services before the implementation of project plans (Centre for Leadership, *JLS Baseline 1*). In the focus areas of digital inclusion and education, the key findings on users included the following:

- 25% are able to use social media as a result of public library services
- 22% are able to apply basic computer skills as a result of public libraries
- 25% are able to conduct a basic search on the Internet for information
- 62% noted that the use of the library's computer helped them to study
- 63% visit the library to access the Internet on a Public Access Computers (PAC) or own device
- 89% highly value access to computer and Internet training
- 96% highly value free access to computers and the Internet
- 94% highly value access to books; 90% books for children

(Centre for Leadership, JLS Baseline 17, 20)

Education
- 46% of users especially in the rural parishes indicated that as a result of utilizing public libraries they have seen improvements in their academic performance
- 57% use the public library to access their homework
- 56% indicated that the availability of technology at public libraries has had a positive impact on their reading habits
- 71% view the library as a place they go to learn about subjects in which they have an interest.

(Centre for Leadership, JLS Baseline 29, 32*)*

Impact Studies Results

The follow-up Impact Studies (2016 and 2017) assessed the current state of the libraries' PACs,

Internet, programme and service enhancement. The results were compared to the findings of the 2014 Baseline Study to establish the impact made and on how the public libraries were contributing to national development. The major findings are presented in figure 1 and tables 4-7, which follow.

Comparative data indicated that library visits by users who visited more than once per week increased by 10% (Centre for Leadership, JLS Impact Study 2016 8, 18). Refer to figure 1, which follows.
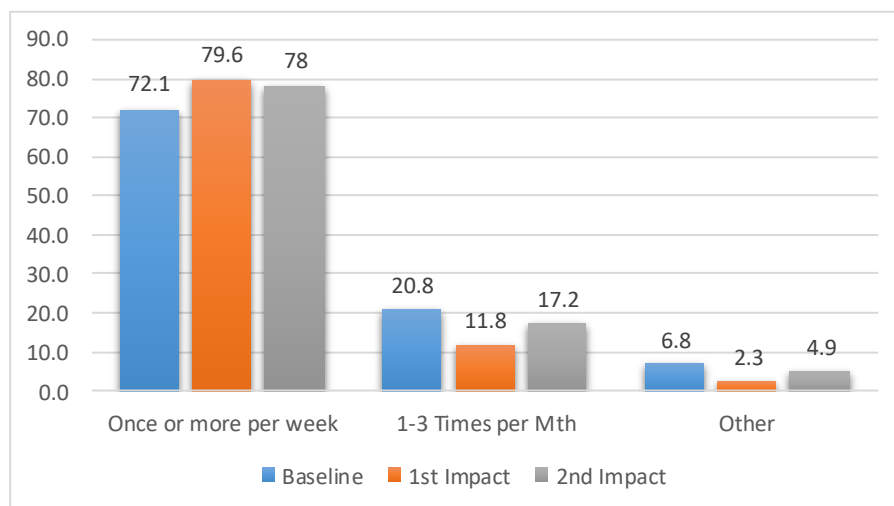

Fig. 1. Frequency of library visits

Table 4

Impact study results on digital inclusion

DIGITAL INCLUSION			
Baseline 2014	**Impact 2016**	**Impact 2017**	**COMMENTS**
24%	26%	23%	Accessed the Internet for the first time at the library
25%	37%	72%	Are able to use social media as a result of public library services
22%	51%	38%	Are able to do basic things such as use a mouse and turn on a computer
25%	39%	57%	Have acquired skills in conducting basic online search as a result of public libraries

As per table 4 above, persons evaluated the provision of public access computers as having a positive impact on their ability to use ICTs.

Table 5

Impact study results on education

EDUCATION			
Baseline 2014	**Impact 2016**	**Impact 2017**	**COMMENTS**
46%	43%	-	Indicated that as a result of utilizing public libraries they have seen improvements in their academic performance
57%	60%	57%	Use the public library services to complete their homework
56%	60%	58%	Indicated that the availability of technology at public libraries has had a positive impact on their reading habits
71%	74%	75%	View the library as a place they go to learn about subjects in which they have an interest

Table 5 above indicates education is another key area in which significant progress has been made in the areas of training and development to equip people with the requisite skills necessary for their integration in the society regardless of age, residence or disability.

Table 6

Impact study results on economic activity

ECONOMIC IMPACT			
Baseline 2014	**Impact 2016**	**Impact 2017**	**COMMENTS**
5%	8%	11%	Research agricultural information
10%	13%	13%	Communicate with other for business
8%	11%	14%	Identify business partner, customer or promote service
13%	9%	10%	Saved money by utilizing available technology at the public library

Impact study results for other CIMS indicators, particularly in the areas of community, health, government and governance are indicated in the following table:

Table 7

Impact study results for other CIMS indicators

INDICATORS	RESULTS
Community	**93%** of users say that the public library plays an important role in the community *(from 85%)*
Health	**43 %** of adult users have responded to health-related information they found at the library *(from 10%)*
	38% of users have shared health related information acquired at the public library (from 29%)
Government and Governance	**15%** of users have shared government information they found at the library *(from 18%)*
	30 % of users are now able to better exercise their rights based on the use public libraries *(from 19%)*

In all the studies, users (74.7% in 2017, 74% in 2016 and 71% in 2014) viewed the public library as the place of choice to learn about subjects in which they have an interest. Therefore, it is not surprising that in the 2017 study, 39.8% of users went to the public library to research health issues and used the information found, compared to 38% in the 2016 study (Centre for Leadership*, JLS Impact Study* 2017 33). The data gathered from the Impact Studies showed that libraries are supporting development through the programmes, products and services.

Project Outcomes

Outcomes in the library context can be defined as "the consequences of deploying services on the people who encounter them or on the communities served" (Markless and Streatfield xx). Key outcomes of the project included:

- Library users have increased access to technology
- Library users increase their use of technology to fulfil their goals
- Library users know how to use technology to fulfil their goals
- Library users increase usage of the programmes and services
- Library staff have the training and resources necessary to deliver new/enhanced programmes and services that meet user needs
- Library staff know how to manage technology. (Jamaica Library Service. *Proposal*)

Library Users have Increased Access to Technology

The project provided an increase in state-off-the-art ICT resources for public libraries as outlined in table 8, which follows.

Table 8

Resources acquired under the project

Resources	Pre-Project	Project Additions
Computers	663	810
Wireless Access Points	22	151
WAN *(Funded by the Universal Service Fund)*	35 locations	44 locations
Internet Access *(Including the use of TV 3 white spaces)*	96 locations	103 locations
Tablet Computers	-	271
Gaming Consoles and Televisions	-	19/40

Other resources acquired included:

- Finch robots for teaching programming concepts and logic

- Cameras for photography clubs

- Lighting kits for green rooms (photography)

- Projectors and screens

- New public computer reservation and print management software to manage public computer access

- Software, including Microsoft Office Suite and Visual Studio, for programming, valued at US $1.1m donated by Microsoft for all the organization's computers.

Library Users Increase their Use of Technology

The ICT infrastructure upgrade has resulted in 85% increase in the use of public access computers at the libraries when the figures for the end of 2013 are compared with those for the end of March 2017. Refer to table 9, which follows.

Table 9

ICT usage trends 2013- 2017

Year *(as at March)*	Public Access Computers	ICT Usage
2013	663	957,041
2014	630	1,101,625
2015	577	1,127,190
2016	1,036	1,307,543
2017	1,221	1,768,219

As of March 2017 every public library across Jamaica has state-of-the-art computers for public access; 86.5% connected to the Internet and offer wireless access. The remaining 13.5% are equipped to provide Internet connectivity once the infrastructure is in place in the community.

Library Staff Knows how to Manage Technology in Libraries and have the Training and Resources Necessary to Deliver New Programmes and Services

Using the findings of the Needs Assessment and the Baseline Study, a comprehensive training programme was implemented with approximately 24 training initiatives completed to promote personal, organizational and national development and to ensure that library staff know how to use and manage technology. Over 600 staff members were trained with 258 specifically trained in ICT.

Library Users Know how to Use Technology to Fulfil their Goals

With the development of the capacities of the staff, the organization was able to expand ICT training programmes from the main libraries in parish capitals to branch libraries in rural areas. Additionally, the programmes were also expanded from Basic Computer Applications to include courses in the following areas:

- Microsoft Office Suite
- Social Media
- Digital Literacy
- Tablet Tutorial

- Typing Tutorial
- Kudo Software for children
- Programming for children

By the end of the project, approximately 10,025 library users/members from the Tiny Tots to the Senior Citizens were exposed to ICT training to improve their competencies to fulfil their personal and professional goals. Refer to table 10, which follows.

Table 10

Public library user training 2010-2017

PERIOD (ending March)	No. of Users and Members Trained					No. of Training Programmes Offered
	Seniors	*Adults*	*Juniors*	*Tiny Tots*	**Total**	
2013 - 2017 Project	3,049	2,078	2,134	2,764	**10,025**	8
2010 - 2012 Pre –Project	964	-	-	-	**964**	1

Specific groups benefitting from the technology training and development also included:

- Essential services, that is, police officers and nurses, who were enabled to use technology to do their jobs
- Teachers - enabled to apply technology in education
- Farmers - enabled to use online resources to improve productivity
- Self-employed persons – enabled to file income tax returns online
- Children with disabilities – enabled to use basic technology
- Unemployed individuals – enabled, through partnership with the Ministry of Labour and Social Security, to access employment assistance databases, for example, The Labour Market Information System. This database allows job seekers and potential employees to gain easier access to employment opportunities.

Library Users Increase Usage of the Programmes and Services of the Library

Due to the fact that many of the resources acquired were not made available at many locations until the last few months of the project, the full impact of the use of the programmes and services is not yet available. However, there were some areas which showed increased participation, for example, the Annual Summer Programme. Attendance at summer programmes for children increased by 70% from 2,662 to 4,534 over the three year period, 2014-2016.

Marketing and Advocacy

Significant work was also undertaken during the project to raise public awareness of the value of public libraries and to promote the programmes and services offered. The needs assessment revealed that 22.3% of non-users were not aware that they could access computers at the public library and 43.7% of non-users were not aware they could access the Internet at the public library free of cost. Additionally, among non-users there was a low level of familiarity with some of the programmes on one hand and a high level of perceived relevance of these programmes to development on the other. These results suggest that there were significant gaps in the awareness of programmes and services offered by the public libraries among both users and non-users. The marketing campaign was therefore important to increase public awareness of existing library programmes and services offered, new technology programmes and services, and to encourage membership.

An aggressive membership drive during the last six months of the project resulted in the registration of 17,694 new members as of March 2017, exceeding the target by 48%. Additionally, 1,572 dormant readers reactivated their membership. The total membership as of March 2017 was 443,180 of which 41% (183,266) were adults and 59% (259,954) juniors (Centre for Leadership, *JLS: Using Technology* 16).

The JLS Driving Progress Across the UN 2030 Agenda

The table which follows, table 11, represents a selection of programmes and services offered by the JLS in support of the goals, all of which integrated the use of technology in content delivery.

Table 11

JLS programmes and services supporting SDGs

SDGs	JLS Programmes

Goal 1 - No Poverty
 	
(End poverty in all its forms everywhere)
	• Provision of FREE Access to computers, tablets and the Internet to improve digital and media literacy skills to increase employability.
	
	• Provision of FREE computer and internet training to enable digital inclusion. Fifty three (53) libraries including inner-city and rural communities offering computers/internet training. These include:
	   - Basic Computer Applications
	   - Digital Literacy
	   - Social Media
	   - Programming for Children
	   - Typing Tutorial
	   - Tablet Tutorial

Goal 2 - No Hunger (End hunger, achieve food security and improved nutrition and promote sustainable agriculture)	• Provision of FREE access to information on agriculture and ICT training for farmers through partnership with the Rural Agricultural Development Authority (RADA).
Goal 3 – Ensure Healthy Lives and Promote Wellbeing	• Access to health information contributing to wellbeing through leisure opportunities, summer programmes for children, club activities- craft, training and gaming
Goal 4 - Quality Education (Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all)	"We Likkle But We Tallawah: Parents Reading with Babies and Toddlers" - supporting early literacy interventions for babies, toddlers and young children 0-4 years. • Reading Programmes - Story Hour Sessions, Storytelling, Arm Chair Travel, Reading Tours, National Reading Competition, Basic Remedial Reading Sessions, Reading Clubs • School Curriculum Support - Daily Homework Assistance for Students, Grade Six Achievement Test (GSAT) Club, Quiz Competitions, Coordinated Class and School Visits, Exhibitions and Displays, Subject Marathons for Caribbean Secondary Examination (CSEC) Students provided in partnership with eLearning Jamaica Limited.
Goal 8 - Good Jobs and Economic Growth Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all.	• Access the Labour Market Information System database from the Ministry of Labour and Social Security, which allows job seekers and potential employees to gain easier access to employment opportunities. • Mock interviews & assistance with resume writing.
Goal 9 - Innovation and Infrastructure Build resilient infrastructure, promote inclusive and sustainable industrialisation and foster innovation	Programmes to support innovation through activities for children and youth such as: • Technology Clubs • App Development Competition • Robotics/ Coding for Children

Goal 10 - Reduced Inequalities	• Programmes and services provided to:
	   - Rural and urban poor
	   - 7 correctional institutions
	   - 8 hospitals and infirmaries and
	   - 1 Children's Home
	• Services to visually impaired and persons with disabilities.

Goal 13 - Protect the Planet (Take action to combat climate change and its impact)	• Climate change training sessions for children and youth in partnership with Ja Reeach Project II.
Goal 17 - Partnerships	• Continued engagement with private, public sectors and NGO's through various interactions

Conclusion and Recommendations

The world today is experiencing a period of unprecedented and rapid change in technology, politics, economics and other areas. These changes have impacted all aspects of society, including libraries. Technology has become a catalyst for the transformation of libraries. The JLS, like many libraries around the globe, continues to embrace the change by re-inventing itself to meet the needs of individuals and communities to enable Jamaicans to "achieve their fullest potential" (Planning Institute of Jamaica 16). The findings of the impact assessments have illustrated the extent to which the organization is improving people's lives and by extension contributing to national development. They also indicate the need for evidence-based research to inform decisions for meeting individual community needs.

The JLS's technology programme may be considered small steps in support of development; however, these steps can assist in the transformation of the country to a knowledge-based, ICT intensive society, which will serve as a stimulus towards desired levels of growth and development. To make "Jamaica the place of choice to live, work, raise families and do business" (Jamaica. Planning 2) by 2030 and to support the country in achieving the UN 2030 Agenda, the JLS will:

- Improve on its programmes and services offerings to reflect technology changes, other societal changes
- Continuously engage communities, especially those who are most vulnerable
- Increase the number of consultations with stakeholder groups to ascertain the needs in developing programmes and services for young people
- Continue to support lifelong learning for all citizens
- Improve and expand mobile library services to communities without fixed libraries
- Acquire and expand e-resources
- Improve the physical library spaces to enhance user experience – more user friendly, accessible spaces that reflect new ways of learning – quiet, creative and collaborative, active and flexible spaces
- Achieve 100% Internet enabled libraries
- Continue maintaining and upgrading its ICT resources
- Increase adaptation of technology in operations to improve efficiencies

- Increase use of social media platforms to connect with users and potential users
- Develop mobile apps to make access to library content easier and faster

In order to guarantee its relevance to future development, JLS must be able to respond rapidly to changes and continually build the capacity of the staff to deliver services. Investing in information technology is a key driver of economic development. For the JLS to continue on this trajectory, the government, development partners, civil society, the private sector and all other stakeholders, must provide tangible support, and recognise the JLS as a valuable partner in the thrust towards achieving the country's developmental goals. The organization will therefore continue to engage stakeholders at all levels to ensure sustainability of the impact.

Although many are predicting the demise of libraries, it is not all doom and gloom. It may be the end of libraries as they are known in the traditional sense; but public libraries as community hubs have begun to effectively utilize technology for information, knowledge and recreation and will therefore continue to positively impact personal, community and national development. The organization's entrance into a whole new digital world promises exciting possibilities, not only for public library users but also for the staff. The future is filled with possibilities. As the JLS looks to the future, there is support for the comment of Elaine Ng, Chief Executive Officer of the National Library Board of Singapore: "How libraries look and what libraries do may change but the inherent desire to create better lives for people through discovery, learning and creation endures" (Ng 7).

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Appendix 1

The Jamaica Library Service
Impact Assessment Study

SECTION A: MEMBERSHIP AND USE OF LIBRARY	
Q1a. Have you used a main/ parish, branch or mobile library within the last 12 months?	**Q1b.** Which library was this?

1. ☐ Yes (Continue Survey)
 2. ☐ No (End Survey and move to next person)
	i. Name of Library:_____
	 ii. Type of Library:
	     1. ☐ Main/Parish Library
	     2. ☐ Branch Library
	     3. ☐ Mobile Library
	 iii. Parish of Library:
	 _____

Q1ci. Which public library do you use most frequently?	**Q1cii.** How often do you visit this library (The library that you use the most frequently)? Choose one

i. Name of Library:_____
 ii. Type of Library:
     1. ☐ Main/Parish Library
     2. ☐ Branch Library
     3. ☐ Mobile Library
 	
 iii. Parish of Library:
 _____
	1. More than once per week ☐
	 2. About once per week ☐
	 3. About 2-3 times per month ☐
	 4. About once per month ☐
	 5. About once every six months ☐
	 6. About once per year or less often ☐
	 7. This is my first visit ☐
	 8. Don't know ☐

Q1d. Are you currently a member of any library in Jamaica?	**Q1e.** Which library is this?

1. ☐ Yes
 2. ☐ No (Go to Q1g)
	i. Name of Library:_____
	 ii. Type of Library:
	     1. ☐ Main/Parish Library
	     2. ☐ Branch Library
	     3. ☐ Mobile Library
	     4. ☐ Postal Reader
	 iii. Parish of Library:
	 _____

Q1f. What encouraged you to become a member of this library? INT: Ask, anything else?	**Q1g.** What do you think would encourage more people to become members of this library? INT: Ask, anything else?

SECTION B: DIGITAL INCLUSION

Q2a. As a result of public library services (e.g., Internet, computers, training or assistance from library staff or outside experts), I learned to: (Please select all that apply):

1.☐ Turn computer on or off
2.☐ Use a mouse
3.☐ Software engineering (i.e. computer programming)
4.☐ Website development
5.☐ Networking and security
6.☐ Database and information management
7.☐ Computer hardware repair and/or software troubleshooting
8.☐ Use Microsoft Office (or productivity-based) software products (e.g., Outlook, Word, Excel)
9.☐ Conduct advanced online search for information (e.g., searching within websites, using a filter to narrow results)
10.☐ Use the Internet to access government information
11.☐ Use other online services (e.g., e-banking, paying bills, purchasing goods online)

| 12.☐ Use social media (e.g. Facebook and Twitter) |
| 13.☐ Conduct a basic search online for information (e.g., by using Google or Bing) |
| 14.☐ Send/receive email |
| 15.☐ Use communications software/applications (e.g. Skype) |
| 16.☐ Scientific computing (e.g., simulation, optimization, and data analysis) |

Q2b. The first time that I ever used the Internet, I was:(Please select one)

1.☐ At work
2.☐ At home
3.☐ In a public building (other than a library) where people can access computers, the Internet, and other digital technologies (a telecenter or community center)
4.☐ In an Internet cafe
5.☐ In a public library
6.☐ In a school, university or college
7.☐ On a mobile phone
8.☐ Somewhere else
9.☐ Don't know
10.☐ I have never used the Internet

Q2ci. The first time that I ever used a computer, I was: (Please select one)

1.☐ At work
2.☐ At home
3.☐ In a public building (other than a library) where people can access computers, the Internet, and other digital technologies (a telecenter or community center)
4.☐ In an Internet cafe
5.☐ In a public library
6.☐ In a school, university or college
7.☐ Somewhere else
8.☐ Don't know
9.☐ I have never used a computer

Q2cii. Were you formally trained to use the computer?	**Q2ciii. Where were you formally trained to use the computer?**
1.☐ Yes (If 'Yes' move to Q2ciii) 2.☐ No (If 'No' move to Q2d)	

Q2d. Which of the following activities have you engaged in at a public library in the last 12 months? (Please select all that apply)

1.☐ Browsed/ read books or newspapers
2.☐ Borrowed/ returned/ renewed books or other material such as DVDs, CDs, Videos, CD-ROMS
3.☐ Used a computer (e.g. to use word processing/ database/ spreadsheet packages etc.)
4.☐ Accessed the Internet on a library computer or on my own mobile device or laptop using library WiFi (this includes using the Internet for Facebook or Skype)
5.☐ Used photocopier/ fax
6.☐ Used other facilities for example toilet
7.☐ Received one-to-one advice on how to find information on the Internet or use a computer
8.☐ Participated in an in-person course or training session
9.☐ Attended an event/exhibition/meeting
10.☐ Done voluntary work at a library
11.☐ Something else
12.☐ Don't know

Q2dii. Please indicate how important you think each of the following public library services is, on a scale of 1 to 5, where 1 means 'Not at all important' and 5 means 'Extremely important':

	0 – Not at all important	1 - Somewhat Important	2 - Important	3 – Very important	4- Extremely important
1. Books to read / borrow	0	1	2	3	4

		0	1	2	3	4	
2.	Newspapers / magazines to read	0	1	2	3	4	
3.	CDs / DVDs to borrow	0	1	2	3	4	
4.	A space where the local community can meet	0	1	2	3	4	
5.	Free access to computers	0	1	2	3	4	
6.	Free access to the Internet	0	1	2	3	4	
7.	Services to job seekers (e.g. advice on how to write CVs, job search facilities)	0	1	2	3	4	
8.	Information for businesses (e.g. on how to start a business, seeking business opportunities)	0	1	2	3	4	
9.	Access to information about government services, like tax, forms, etc.	0	1	2	3	4	
10.	Computer and Internet skills training	0	1	2	3	4	
11.	School books and text books for children	0	1	2	3	4	
12.	Study materials and text books for adults	0	1	2	3	4	
13.	Information about/for the local community	0	1	2	3	4	
14.	Photocopiers/printers	0	1	2	3	4	

Q2e. Because of services provided by the public library (e.g., access to computers, Internet, WiFi, or other technology; assistance or training from library staff): - I feel confident in my ability to use the Internet

1.☐ Agree
2.☐ Disagree
3.☐ Don't know

Q2f. Because of services provided by the public library (e.g., access to computers, Internet, WiFi, or other technology; assistance or training from library staff): - I use technology more than I would if I did not have access to the public library

1.☐ Agree
2.☐ Disagree
3.☐ Don't know

Q2g. How often did you use the Internet in a public library in the last 12 months?

1.☐ More than once per week
2.☐ About once per week
3.☐ About 2-3 times per month
4.☐ About once per month
5.☐ About once every three months
6.☐ About once every six months
7.☐ About once per year or less often
8.☐ This is my first visit
9.☐ Don't know

Q2h. I have used technology (e.g., WiFi, Internet, computers, Facebook, Skype, etc.) at the public library in the last 12 months to: (Please select all that apply)

1.☐ Create online content (e.g.., posting on a wall or comment board, blogging, updating an online profile, uploading photos, designing websites or web content)
2.☐ Learn about the news
3.☐ Communicate with my family and friends using email
4.☐ Communicate with my family and friends using Skype, Facebook or other online tools (excluding email)
5.☐ Buy products or services
6.☐ Sell products or services
7.☐ Access online banking services (e.g., checking, savings, payment or loan services)
8.☐ Search for information that will help me to create a resume or CV
9.☐ Search for agricultural products (e.g., farming equipment, seeds)
10.☐ Find information that will allow me to buy or sell a product or service (e.g., information related to finding a market for products, competitive pricing information, product improvement information, goods or products that I may want to buy)
11.☐ Search for government information (e.g., laws or regulations, descriptions of government programs and services, forms,

or government jobs)

12.☐ Use a government service (e.g., download/ fill out/ submit forms, pay taxes, or request documents/licenses)

13.☐ Participate in governance processes (e.g., research politicians or citizens' rights, interact with public authorities or elected officials, learn how to volunteer for political events, or participate in political movements

Q2i. Because of technology (e.g., WiFi, Internet, computers, Facebook, e-books, etc) at the public library: - I saved money (e.g., by using WiFi or Skype and saving on technology and communication costs, by purchasing goods or completing government forms online and saving on travel costs or because prices are cheaper online)

1.☐ Agree
2.☐ Disagree
3.☐ Don't know

Q2j. I can access the Internet at no charge in the following locations: (Please select all that apply)	**Q2k. I visit the public library:** *(choose one)*
1.☐ At work	1.☐ More than once per week
2.☐ At home	2.☐ About once per week
3.☐ In a public building (other than a library) where people can access computers, the Internet, and other digital technologies (a telecenter or community center)	3.☐ About 2-3 times per month
	4.☐ About once per month
	5.☐ About once every three months
4.☐ In an Internet cafe	6.☐ About once every six months
5.☐ In a public library	7.☐ About once per year or less often
6.☐ In a school, university or college	8.☐ This is my first visit
7.☐ On a mobile phone	9.☐ Don't know
8.☐ Don't know	

Q2l. While online today, I did the following:

1.☐ Searched for or created new information related to my cultural heritage [Culture and Leisure]

2.☐ Watched movies, played games [Culture and Leisure]

3.☐ Read the news [Culture and Leisure]

4.☐ Searched for or created new information about local activities/events, neighborhood groups, volunteer activities, or rallies [Culture and Leisure]

5.☐ Participated in online course or training session [Education]

6.☐ Communicated with others (using email, Skype, Facebook, instant messaging, or any other online communication tool) [Communication]

7.☐ Searched for agricultural information [Economic Development]

8.☐ Bought or sold goods or services (e.g., using eBay or other websites) [Economic Development]

9.☐ Searched for or applied for a job [Economic Development]

10.☐ Created or updated my resume/CV [Economic Development]

11.☐ Searched for, shared or used health information (e.g., related to health providers, prevention, treatment, etc.) [Health]

12.☐ Searched for government information or used a government service [Government & Governance]

13.☐ Studied or completed my homework [Education]

14.☐ Researched or applied to an educational program or institution [Education]

15.☐ Researched politicians or citizens' rights, interacted with public authorities or elected officials, or learned how to volunteer for a political event or participate in political movements [Government & Governance]

16.☐ Something else, please say if possible _____

SECTION C: CULTURE AND LEISURE

Q3a. Because of technology (e.g., WiFi, Internet, computers, Facebook, e-books, etc.) at the public library: - my awareness about community or civic activities (e.g., related to local associations or neighborhood groups, volunteer activities, rallies, etc.) has increased	**Q3b. Because of technology (e.g., WiFi, Internet, computers, Facebook, e-books, etc.) at the public library: - my awareness of or ability to promote recreational activities, events or clubs has increased**
1.☐ Agree	1.☐ Agree
2.☐ Disagree	2.☐ Disagree
3.☐ Don't know	3.☐ Don't know

Q3c. I have used technology (e.g., WiFi, Internet, computers, Facebook, Skype) at the public library in the last 12 months to:

(Please select all that apply)

1. ☐ Create online content (e.g., posting on a wall or comment board, blogging, updating an online profile, uploading photos, designing websites or web content)
2. ☐ Learn about the news
3. ☐ Communicate with my family and friends using email
4. ☐ Communicate with my family and friends using Skype, Facebook or other online tools
5. ☐ Communicate with others for business purposes (using email, Skype, Facebook or any other online tools)
6. ☐ Search for agricultural information (e.g., farming equipment or techniques, crop prices, weather information)
7. ☐ Buy products or services
8. ☐ Sell products or services
9. ☐ Search for government information (e.g., laws or regulations, descriptions of government programs and services, forms, or government jobs)
10. ☐ Use a government service (e.g., download/ fill out/ submit forms, pay taxes, or request documents/licenses)
11. ☐ Participate in governance processes (e.g., research politicians or citizens' rights, interact with public authorities or elected officials, learn how to volunteer for political events, or participate in political movements)
12. ☐ Access entertainment (e.g., listen to music, watch films, play games)
13. ☐ Preserve my culture (e.g., by planning or promoting cultural heritage or language events, by creating or sharing cultural information)

Q3d. Because of services provided by the public library (e.g., access to computers, Internet, WiFi, or other technology; assistance or training from library staff): I am more aware off things happening in my community

1. ☐ Agree
2. ☐ Disagree
3. ☐ Don't know

SECTION D: EDUCATION

Q4a. I have used technology (e.g., WiFi, Internet, computers, Facebook, Skype) at the public library in the last 12 months to: (Please select all that apply)	Q4b. I have used public library services (e.g., technology, physical space for meetings or study sessions, informal training or assistance by library staff or external experts) in the last 12 months to: (Please select all that apply):
1. ☐ Search for informal education resources (e.g., free courses online or in-person, training sessions, study groups or learning circles) 2. ☐ Apply to postsecondary programs (e.g., college or university courses/programs, degree or credential programs, technical or professional apprenticeship certificate programs) 3. ☐ Apply for postsecondary scholarships (e.g., for a college, university, degree, credential or certificate program 4. ☐ Participate in an online course	1. ☐ Participate in informal learning opportunities (e.g., free courses online or in-person, training session, study groups or learning circles) 2. ☐ Seek education-related information on behalf of someone else 3. ☐ Complete my homework 4. ☐ Search for preventative health information (i.e. information about preventing or slowing the course of an illness or disease, about nutrition, diet, exercise or fitness) 5. ☐ Search for health treatment information (e.g., medical procedures, health providers)

Q4c. I have shared information with others on how to access informal education resources (e.g., free courses online or in-person, training sessions, study groups or learning circles).

1. ☐ Agree
2. ☐ Disagree
3. ☐ Don't know

Q4d. I have completed an online course that I participated in by using technology (e.g., WiFi, computer, Internet) at the public library.

1. ☐ Agree
2. ☐ Disagree
3. ☐ Don't know

| Q4e. Because of technology (e.g., WiFi, Internet, computers, Facebook, e-books, etc.) at the public library: I read more than I would read if I did not have access to the public library | Q4f. By using public library services (e.g., access to computers, Internet, WiFi, or other technology; assistance or training from library staff) I was able to participate in informal learning opportunities (e.g., free courses, training sessions, online learning |

circles):

1.☐ Agree	1.☐ Agree
2.☐ Disagree	2.☐ Disagree
3.☐ Don't know	3.☐ Don't know
	4.☐ Not Applicable

Q4g. I obtained postsecondary admission after applying to a postsecondary program using technology (e.g., WiFi, computer, Internet) at the public library.

Q4h. As a result of resources, information, and opportunities I accessed using public library services (e.g., computers, Internet, WiFi, or other technology; assistance or training from library staff or outside experts): I am better qualified to get a job than I would be if I hadn't received these services

1.☐ Agree	1.☐ Agree
2.☐ Disagree	2.☐ Disagree
3.☐ Don't know	3.☐ Don't know
4.☐ Not Applicable	4.☐ Not Applicable

Q4i. As a result of resources, information, and opportunities I accessed using public library services (e.g., computers, Internet, WiFi, or other technology; assistance or training from library staff or outside experts): - my academic performance has improved

1.☐ Agree
2.☐ Disagree
3.☐ Don't know
4.☐ Not Applicable

Q4j. The public library is a place where I go to learn about subjects that interest me.

1.☐ Agree
2.☐ Disagree
3.☐ Don't know

Q4k. As a result of resources, information, and opportunities I accessed using public library services (e.g., computers, Internet, WiFi, or other technology; assistance or training from library staff or outside experts): - my earnings have increased

1.☐ Agree
2.☐ Disagree
3.☐ Don't know
4.☐ Not Applicable

SECTION E: COMMUNICATION

Q5a. I communicate more with my family and friends as a result of the technology (e.g., WiFi, computer, Internet) at the public library than I would communicate with them if I did not have access to the public library.

1.☐ Agree
2.☐ Disagree
3.☐ Don't know

Q5b. I feel more connected to my family and friends because I communicate with them using technology (e.g., WiFi, computer, Internet) at the public library.

1.☐ Agree
2.☐ Disagree
3.☐ Don't know

SECTION F: ECONOMIC DEVELOPMENT

Q6a. I have used technology (e.g., WiFi, Internet, computers, Facebook, Skype) at the public library in the last 12 months to: (Please select all that apply)

1.☐ Communicate with others for business purposes (using email, Skype, Facebook or any other online tools)
2.☐ Identify potential customers for my business
3.☐ Promote my services or products
4.☐ Identify potential business partners or employees
5.☐ Create a website (or have one created by outside experts) for my business
6. ☐ Search for agricultural information (e.g., farming equipment or techniques, crop prices, weather information)

| Q6b. I have used agricultural information (e.g., farming equipment or techniques, crop prices, weather information) that I found using technology (e.g., WiFi, computer, Internet, Facebook, Skype) at the public | Q6c. I have shared agricultural information (e.g., farming equipment or techniques, crop prices, weather information) that I found using technology (e.g., WiFi, computer, Internet, Facebook, Skype) at the public library. |

library.	
1.☐ Agree 2.☐ Disagree 3.☐ Don't know	1. ☐ Yes 2. ☐ No

Q6d. I have used public library services (e.g., technology, physical space for meetings or study sessions, informal training or assistance by library staff or external experts) in the last 12 months to:(Please select all that apply)

1.☐ Write a resume or CV	3.☐ Apply for a job
2.☐ Find job listings or employment opportunities	4.☐ Seek job listings or employment information on behalf of someone else

Q6e. I have saved time by using technology (e.g., WiFi, computer, Internet, Skype, email) at the public library to communicate for my business.

1.☐ Agree
2.☐ Disagree
3.☐ Don't know

Q6f. As a result of resources, information, and opportunities I accessed using public library services (e.g., computers, Internet, WiFi, or other technology; assistance or training from library staff or outside experts):
my business has grown (e.g., number of customers, employees and/or revenue has increased

1.☐ Agree
2.☐ Disagree
3.☐ Don't know
4.☐ Not Applicable

Q6g. As a result of resources, information, and opportunities I accessed using public library services (e.g., computers, Internet, WiFi, or other technology; assistance or training from library staff or outside experts): - my business' profit has grown

1.☐ Agree
2.☐ Disagree
3.☐ Don't know
4.☐ Not Applicable

Q6h. As a result of resources, information, and opportunities I accessed using public library services (e.g., computers, Internet, WiFi, or other technology; assistance or training from library staff or outside experts): - my agricultural productivity/yield has increased

1.☐ Agree
2.☐ Disagree
3.☐ Don't know
4.☐ Not Applicable

Q6i. As a result of resources, information, and opportunities I accessed using public library services (e.g., computers, Internet, WiFi, or other technology; assistance or training from library staff or outside experts): - my farming/agricultural income has increased

1.☐ Agree
2.☐ Disagree
3.☐ Don't know
4.☐ Not Applicable

Q6j. I saved money by using technology (e.g., WiFi, computer, Internet) at the public library to buy products or services.	**Q6k. I received a job offer after using public library services (e.g., WiFi, computer, Internet, training or assistance from library staff or outside experts) to apply for the job.**
1.☐ Agree 2.☐ Disagree 3.☐ Don't know 4.☐ Not Applicable	1.☐ Agree 2.☐ Disagree 3.☐ Don't know 4.☐ Not Applicable

SECTION G: HEALTH

Q7a. I have used public library services (e.g., technology, physical space for meetings or study sessions, informal training or assistance by library staff or external experts) in the last 12 months to:(Please select all that apply)

1.☐ Find health information that meets my needs (e.g., related to medical conditions, medical treatment, health providers, diet, nutrition, fitness or exercise)
2.☐ Search for preventative health information (i.e. information about preventing or slowing the course of an illness or

disease, about nutrition, diet, exercise or fitness

3.☐ Search for health treatment information (e.g., medical procedures, health providers)

4.☐ Seek health information on behalf of someone else

Q7b. I have used health information that I found as a result of public library services (e.g., WiFi, computer, Internet, training or assistance from library staff or outside experts).

1.☐ Agree

2.☐ Disagree

3.☐ Don't know

Q7c. Health information that I found as a result of public library services informed a decision I made about my health.

1.☐ Agree

2.☐ Disagree

3.☐ Don't know

4.☐ Not Applicable

Q7d. Health information that I found as a result of public library services helped to improve my health.	Q7e. Health information that I found as a result of public library services and then shared with another person helped to inform that person's health decisions.
1.☐ Agree	1.☐ Agree
2.☐ Disagree	2.☐ Disagree
3.☐ Don't know	3.☐ Don't know
4.☐ Not Applicable	4.☐ I did not share health information

SECTION H: GOVERNMENT AND GOVERNANCE

Q8a. I have shared government information that I found using technology at the public library (e.g., WiFi, computer, Internet).

1.☐ Agree

2.☐ Disagree

3.☐ Don't know

4.☐ Not Applicable

Q8b. By accessing a government service using technology at the public library (e.g., WiFi, computer, Internet):(Please select all that apply)

1.☐ I saved money

2.☐ I saved time

3.☐ I received money, subsidies or support owed to me by the government

4.☐ Not Applicable

Q8ci. By searching for government information using technology at the public library: I found a job	Q8cii. By searching for government information using technology at the public library: I am better able to exercise my rights as a citizen
1.☐ Agree	1.☐ Agree
2.☐ Disagree	2.☐ Disagree
3.☐ Don't know	3.☐ Don't know
4.☐ Not Applicable	

Q8cd. As a result of public library services (e.g., Internet, computers, training or assistance from library staff or outside experts), I learned about: (Please select all that apply):

1.☐ The structure of government such as the duties of each branch of government (the roles and responsibilities of the executive, legislature, judiciary)

2.☐ The political issues of today (the history of these issue, the relevant facts and the alternatives that are proposed)

3.☐ The current political leaders of Jamaica as well as of other nations

4.☐ The political affairs of other countries

5.☐ Important political groups in Jamaica

SECTION I: AWARENESS AND ADVOCACY

Q9a. In your opinion, how important is it for public libraries to be in every community in Jamaica?

0. ☐ Unimportant

1. ☐ Somewhat unimportant

2. ☐ Neither unimportant nor important
3. ☐ Somewhat important
4. ☐ Very important

Q9b. Would you say the library plays an important role in your community? For example literacy campaigns, health, education, cultural activities, religious activities, community development etc.

1.☐ Agree
2.☐ Disagree
3.☐ Don't know

Q9c. If you needed to use the Internet at no charge to you, where would you go?

Q9d. If you wanted to borrow a book to read, educational DVDs or CDs where would you go?

Q9e. How aware are you of the work of the Jamaica Library Service?

0 ☐ Not at all aware
1 ☐ Slightly aware
2 ☐ Somewhat aware
3 ☐ Moderately aware
4 ☐ Extremely aware

Q9f. Are you aware of the Jamaica Foundation for Lifelong Learning's (JFLL) High School Education Diploma Programme?	Q9g. Are you aware that the library will offer access to training modules for all levels of the Diploma Programme?
1. ☐Yes 2. ☐No	1. ☐Yes 2. ☐No

Q9h. Would you be interested in enrolling in the Jamaica Foundation for Lifelong Learning's (JFLL) High School Education Diploma Programme?

1. ☐Yes
   Why?
_____

_____

2. ☐No
   Why not?
_____

_____

SECTION J: DEMOGRAPHICS

Q10a. What is your gender?	Q10b. Would you say you live in a:	Q10c. What is your age at your last birthday? (allow numerical answers)
1.☐ Male 2.☐ Female	1.☐ Rural area 2.☐ Urban area 3.☐ I don't know	

Q10d. Do you have a disability?

1.☐ Yes
2.☐ No
3.☐ Prefer not to say

Q10e. In your home, do you have the following technology: (Select all that apply)

1.☐ Computer
2.☐ Internet
3.☐ Mobile phone

Q10g. What is your highest level of education?

1.☐ No Formal Education
2.☐ Primary / Prep School Education
3.☐ All-Age School / Some Secondary Education

4.☐ Completed Secondary School Education
5.☐ Vocational / Skills Training
6.☐ University Degree
7.☐ Some Professional Training Beyond University
8.☐ Graduate Degree (MSc, PhD etc.)

Q10h. In terms of work, which of these best describes your present situation?

1.☐ Employed, Full-Time Job
2.☐ Employed, Part-Time Job
3.☐ Self-Employed
4.☐ Unemployed, Out of work
5.☐ Seasonally Employed
6.☐ Student
7.☐ Sick/Disabled
8.☐ Retired
9.☐ Other – Please state _____

Q10i. What is your occupation?	Q10j. Which would you say best represents your present position in Jamaican society?
	1.☐ Lower class 3. ☐Middle class
	2.☐ Upper-middle class 4. ☐Upper class

Q10k. What is your annual income? If you would prefer not to respond to this question, you may leave it blank. (Allow numerical answer)

Q10l. What is your Nationality?	Q10m. What is the name of the Community where you live?

Q10n. Which parish do you currently reside in?

1.☐ Kingston	4.☐ St. Ann	7.☐ St. Elizabeth	10.☐ Portland	13. ☐Manchester
2.☐ St. Thomas	5.☐ St. James	8.☐ Clarendon	11.☐ Trelawny	14. ☐St. Catherine
3.☐ St. Mary	6.☐ Westmoreland	9.☐St. Andrew	12.☐ Hanover	

VALIDATION

Q99a.Telephone Number for Participant:_____

Q99b. Name of Interviewer:_____

Q99c. Date of Interview: _____ - 09 - 2016

Q99d. Field Supervisor:_____

Q99e. Date of validation:_____

Q99f. Internal Validation: ☐ 1. Yes ☐ 2. No

Q99g. Internal Validator:_____ _____

Q99h. Special Comments:_____

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INTERVIEWER DECLARATION

I ………………………………………………………………….. who work on behalf of the CLG, certify that the present questionnaire was administered according to the instructions given during the briefing. Any change made intentionally to the methodology, the data collection or the questionnaire data will be ground for cancellation of that questionnaire, its payment and the payment of all work done for this survey. I hereby fully accept this liability.

Appendix 2

COVER SHEET

The Jamaica Library Service
Impact Assessment Study

My name is _____ and I have been contracted by the Centre for Leadership and Governance, a research unit in the Department of Government, University of the West Indies (Mona) to conduct an Impact Assessment Study of the impact of libraries in facilitating the use of information and communication technologies (ICT) in Jamaica. This Impact Assessment Study is part of a comprehensive ICT programme that has been commissioned by the Jamaica Library Service (JLS) to, among other things:

- Provide Jamaicans with increased access to ICT services
- Provide ICT and other training programmes to promote personal, organizational and national development
- Provide new and enhanced programmes and services responsive to users'/non- users'/stakeholders' needs
- Promote programmes and services to existing and potential users to increase library usage
- Create greater awareness of the value of public libraries in communities to build local and national support

The programme is funded through the Global Libraries Initiative and the Government of Jamaica.

I am inviting you to participate in this research study by completing this questionnaire. The questionnaire will require approximately 20 minutes to complete. Participation is strictly voluntary and you may refuse to participate at any time. Please be assured that all the information that you will be providing shall be kept strictly confidential. Your name or other identifying information will not appear on any study report. We will be doing a follow-up study next year and therefore we are kindly asking you to share your telephone number so that we may contact you for this interview.

If you have any questions or concerns please do not hesitate to call the Field Supervisor for this survey - Mr. Gavin Daley at 386-1591.

We thank you again for your cooperation.

The Centre for Leadership and Governance Management Team
Centre for Leadership and Governance
Department of Government
University of the West Indies
Mona Campus
Phone: 1-876-977-5935

Appendix 3

The Jamaica Library Service
BASELINE STUDY

SECTION A: MEMBERSHIP AND USE OF LIBRARY

Q1a. Have you used a main/parish, branch or mobile library within the last 12 months?

1. ☐ Yes **(Continue Survey)**
2. ☐ No **(End Survey and move to next person)**

Q1b. Which library was this?

i. Name of Library:_____

ii. Type of Library:
  ☐ Main/Parish Library
  ☐ Branch Library
  ☐ Mobile Library

iii. Parish of Library: _____

Q1c. Which public library do you use most frequently?

i. Name of Library:_____
ii. Type of Library:
  ☐ Main/Parish Library
  ☐ Branch Library
  ☐ Mobile Library

iii. Parish of Library: _____

Q1cii. How often do you visit this library (The library that you use the most frequently)? Choose one

1. More than once per week ☐
2. About once per week ☐
3. About 2-3 times per month ☐
4. About once per month ☐
5. About once every six months ☐
6. About once per year or less often ☐
7. This is my first visit ☐
8. Don't know ☐

Q1d. Are you currently a member of any library in Jamaica?

1. ☐ Yes
2. ☐ No (Go to Q1g)

Q1e. Which library is this?

i. Name of Library:_____

ii. Type of Library:
  ☐ Main/Parish Library
  ☐ Branch Library
  ☐ Mobile Library
  ☐ Postal Reader

iii. Parish of Library: _____

Q1f. What encouraged you to become a member of this library? INT: Ask, anything else?

Q1g. What do you think would encourage more people to become members of this library? INT: Ask, anything else?

SECTION B: DIGITAL INCLUSION

Q2a. As a result of public library services (e.g., Internet, computers, training or assistance from library staff or outside experts), I learned to: (Please select all that apply):

1.☐ Turn computer on or off
2.☐ Use a mouse
3.☐ Software engineering (i.e. computer programming)
4.☐ Website development
5.☐ Networking and security
6.☐ Database and information management
7.☐ Computer hardware repair and/or software troubleshooting
8.☐ Use Microsoft Office (or productivity-based) software products (e.g., Outlook, Word, Excel)
9.☐ Conduct advanced online search for information (e.g., searching within websites, using a filter to narrow results)
10.☐ Use the Internet to access government information
11.☐ Use other online services (e.g., e-banking, paying bills, purchasing goods online)
12.☐ Use social media (e.g. Facebook and Twitter)
13.☐ Conduct a basic search online for information (e.g., by using Google or Bing)
14.☐ Send/receive email
15.☐ Use communications software/applications (e.g. Skype)
16.☐ Scientific computing (e.g., simulation, optimization, and data analysis)

Q2b. The first time that I ever used the Internet, I was:(Please select one)

1.☐ At work
2.☐ At home
3.☐ In a public building (other than a library) where people can access computers, the Internet, and other digital technologies (a telecenter or community center)
4.☐ In an Internet cafe
5.☐ In a public library
6.☐ In a school, university or college
7.☐ On a mobile phone
8.☐ Somewhere else
9.☐ Don't know
10.☐ I have never used the Internet

Q2ci. The first time that I ever used a computer, I was: (Please select one)

1.☐ At work
2.☐ At home
3.☐ In a public building (other than a library) where people can access computers, the Internet, and other digital technologies (a telecenter or community center)
4.☐ In an Internet cafe
5.☐ In a public library
6.☐ In a school, university or college
7.☐ Somewhere else
8.☐ Don't know
9.☐ I have never used a computer

Q2cii. Were you formally trained to use the computer? **Q2ciii. Where were you formally trained to use the computer?**

1.☐ Yes (If 'Yes' move to Q2ciii)
2.☐ No (If 'No' move to Q2d)

Q2d. Which of the following activities have you engaged in at a public library in the last 12 months? (Please select all that apply)

1.☐ Browsed/ read books or newspapers
2.☐ Borrowed/ returned/ renewed books or other material such as DVDs, CDs, Videos, CD-ROMS
3.☐ Used a computer (e.g. to use word processing/ database/ spreadsheet packages etc.)
4.☐ Accessed the Internet on a library computer or on my own mobile device or laptop using library WiFi (this includes using the Internet for Facebook or Skype)
5.☐ Used photocopier/ fax
6.☐ Used other facilities for example toilet
7.☐ Received one-to-one advice on how to find information on the Internet or use a computer
8.☐ Participated in an in-person course or training session
9.☐ Attended an event/exhibition/meeting
10.☐ Done voluntary work at a library
11.☐ Something else
12.☐ Don't know

Q2dii. Please indicate how important you think each of the following public library services is, on a scale of 1 to 5, where 1 means 'Not at all important' and 5 means 'Extremely important':

	1 – Not at all important	2	3	4	5 – Extremely important
15. Books to read / borrow	1	2	3	4	5
16. Newspapers / magazines to read	1	2	3	4	5
17. CDs / DVDs to borrow	1	2	3	4	5
18. A space where the local community can meet	1	2	3	4	5
19. Free access to computers	1	2	3	4	5
20. Free access to the Internet	1	2	3	4	5
21. Services to job seekers (e.g. advice on how to write CVs, job search facilities)	1	2	3	4	5
22. Information for businesses (e.g. on how to start a business, seeking business opportunities)	1	2	3	4	5
23. Access to information about government services, like tax, forms, etc.	1	2	3	4	5
24. Computer and Internet skills training	1	2	3	4	5
25. School books and text books for children	1	2	3	4	5
26. Study materials and text books for adults	1	2	3	4	5
27. Information about/for the local community	1	2	3	4	5
28. Photocopiers/printers	1	2	3	4	5

Q2e. Because of services provided by the public library (e.g., access to computers, Internet, WiFi, or other technology; assistance or training from library staff): - I feel confident in my ability to use the Internet

1.☐ Agree
2.☐ Disagree
3.☐ Don't know

Q2f. Because of services provided by the public library (e.g., access to computers, Internet, WiFi, or other technology; assistance or training from library staff): - I use technology more than I would if I did not have access to the public library

1.☐ Agree
2.☐ Disagree
3.☐ Don't know

Q2g. How often did you use the Internet in a public library in the last 12 months?

1.☐ More than once per week
2.☐ About once per week
3.☐ About 2-3 times per month
4.☐ About once per month
5.☐ About once every three months
6.☐ About once every six months
7.☐ About once per year or less often
8.☐ This is my first visit
9.☐ Don't know

Q2h. I have used technology (e.g., WiFi, Internet, computers, Facebook, Skype) at the public library in the last 12 months to: (Please select all that apply)

1.☐ Create online content (e.g.., posting on a wall or comment board, blogging, updating an online profile, uploading photos, designing websites or web content)

2.☐ Learn about the news

3.☐ Communicate with my family and friends using email

4.☐ Communicate with my family and friends using Skype, Facebook or other online tools (excluding email)

5.☐ Buy products or services

6.☐ Sell products or services

7.☐ Access online banking services (e.g., checking, savings, payment or loan services)

8.☐ Search for information that will help me to create a resume or CV

9.☐ Search for agricultural products (e.g., farming equipment, seeds)

10.☐ Find information that will allow me to buy or sell a product or service (e.g., information related to finding a market for products, competitive pricing information, product improvement information, goods or products that I may want to buy)

11.☐ Search for government information (e.g., laws or regulations, descriptions of government programs and services, forms, or government jobs)

12.☐ Use a government service (e.g., download/ fill out/ submit forms, pay taxes, or request documents/licenses)

13.☐ Participate in governance processes (e.g., research politicians or citizens' rights, interact with public authorities or elected officials, learn how to volunteer for political events, or participate in political movements

Q2i. Because of technology (e.g., WiFi, Internet, computers, Facebook, e-books) at the public library: - I saved money (e.g., by using WiFi or Skype and saving on technology and communication costs, by purchasing goods or completing government forms online and saving on travel costs or because prices are cheaper online)

1.☐ Agree

2.☐ Disagree

3.☐ Don't know

Q2j. I can access the Internet at no charge in the following locations: (Please select all that apply)	**Q2k. I visit the public library:** *(choose one)*
1.☐ At work	1.☐ More than once per week
2.☐ At home	2.☐ About once per week
3.☐ In a public building (other than a library) where people can access computers, the Internet, and other digital technologies (a telecenter or community center)	3.☐ About 2-3 times per month
	4.☐ About once per month
	5.☐ About once every three months
	6.☐ About once every six months
4.☐ In an Internet cafe	7.☐ About once per year or less often
5.☐ In a public library	8.☐ This is my first visit
6.☐ In a school, university or college	9.☐ Don't know
7.☐ On a mobile phone	
8.☐ Don't know	

Q2l. While online today, I did the following:

1.☐ Searched for or created new information related to my cultural heritage [Culture and Leisure]

2.☐ Watched movies, played games [Culture and Leisure]

3.☐ Read the news [Culture and Leisure]

4.☐ Searched for or created new information about local activities/events, neighbourhood groups, volunteer activities, or rallies [Culture and Leisure]

5.☐ Participated in online course or training session [Education]

6.☐ Communicated with others (using email, Skype, Facebook, instant messaging, or any other online communication tool) [Communication]

7.☐ Searched for agricultural information [Economic Development]

8.☐ Bought or sold goods or services (e.g., using eBay or other websites) [Economic Development]

9.☐ Searched for or applied for a job [Economic Development]

10.☐ Created or updated my resume/CV [Economic Development]

11.☐ Searched for, shared or used health information (e.g., related to health providers, prevention, treatment, etc.) [Health]

12.☐ Searched for government information or used a government service [Government & Governance]

13.☐ Studied or completed my homework [Education]

14.☐ Researched or applied to an educational program or institution [Education]
15.☐ Researched politicians or citizens' rights, interacted with public authorities or elected officials, or learned how to volunteer for a political event or participate in political movements [Government & Governance]
16.☐ Something else, please say if possible _____

SECTION C: CULTURE AND LEISURE

Q3a. Because of technology (e.g., WiFi, Internet, computers, Facebook, e-books) at the public library: - my awareness about community or civic activities (e.g., related to local associations or neighborhood groups, volunteer activities, rallies, etc.) has increased

1.☐ Agree
2.☐ Disagree
3.☐ Don't know

**Q3b. Because of technology (e.g., WiFi, Internet, computers, Facebook, e-books) at the public library:
- my awareness of or ability to promote recreational activities, events or clubs has increased**

1.☐ Agree
2.☐ Disagree
3.☐ Don't know

Q3c. I have used technology (e.g., WiFi, Internet, computers, Facebook, Skype) at the public library in the last 12 months to: (Please select all that apply)

14. ☐ Create online content (e.g., posting on a wall or comment board, blogging, updating an online profile, uploading photos, designing websites or web content)
15. ☐ Learn about the news
16. ☐ Communicate with my family and friends using email
17. ☐ Communicate with my family and friends using Skype, Facebook or other online tools
18. ☐ Communicate with others for business purposes (using email, Skype, Facebook or any other online tools)
19. ☐ Search for agricultural information (e.g., farming equipment or techniques, crop prices, weather information)
20. ☐ Buy products or services
21. ☐ Sell products or services
22. ☐ Search for government information (e.g., laws or regulations, descriptions of government programs and services, forms, or government jobs)
23. ☐ Use a government service (e.g., download/ fill out/ submit forms, pay taxes, or request documents/licenses)
24. ☐ Participate in governance processes (e.g., research politicians or citizens' rights, interact with public authorities or elected officials, learn how to volunteer for political events, or participate in political movements)
25. ☐ Access entertainment (e.g., listen to music, watch films, play games)
26. ☐ Preserve my culture (e.g., by planning or promoting cultural heritage or language events, by creating or sharing cultural information)

Q3d. Because of services provided by the public library (e.g., access to computers, Internet, WiFi, or other technology; assistance or training from library staff): I am more aware off things happening in my community

1.☐ Agree
2.☐ Disagree
3.☐ Don't know

SECTION D: EDUCATION

**Q4a. I have used technology (e.g., WiFi, Internet, computers, Facebook, Skype) at the public library in the last 12 months to:
(Please select all that apply)**

1.☐ Search for informal education resources (e.g., free courses online or in-person, training sessions, study groups or learning circles)
2.☐ Apply to postsecondary programs (e.g., college or university courses/programs, degree or credential programs,

**Q4b. I have used public library services (e.g., technology, physical space for meetings or study sessions, informal training or assistance by library staff or external experts) in the last 12 months to:
(Please select all that apply):**

1.☐ Participate in informal learning opportunities (e.g., free courses online or in-person, training session, study groups or learning circles)
2.☐ Seek education-related information on behalf of someone else

technical or professional apprenticeship certificate programs)
3.☐ Apply for postsecondary scholarships (e.g., for a college, university, degree, credential or certificate program
4.☐ Participate in an online course

3.☐ Complete my homework
4.☐ Search for preventative health information (i.e. information about preventing or slowing the course of an illness or disease, about nutrition, diet, exercise or fitness)
5. ☐ Search for health treatment information (e.g., medical procedures, health providers)

Q4c. I have shared information with others on how to access informal education resources (e.g., free courses online or in-person, training sessions, study groups or learning circles).
1.☐ Agree
2.☐ Disagree
3.☐ Don't know

Q4d. I have completed an online course that I participated in by using technology (e.g., WiFi, computer, Internet) at the public library.
1.☐ Agree
2.☐ Disagree
3.☐ Don't know

Q4e. Because of technology (e.g., WiFi, Internet, computers, Facebook, e-books) at the public library: I read more than I would read if I did not have access to the public library
1.☐ Agree
2.☐ Disagree
3.☐ Don't know

Q4f. By using public library services (e.g., access to computers, Internet, WiFi, or other technology; assistance or training from library staff) I was able to participate in informal learning opportunities (e.g., free courses, training sessions, online learning circles):
1.☐ Agree
2.☐ Disagree
3.☐ Don't know
4.☐ Not Applicable

Q4g. I obtained postsecondary admission after applying to a postsecondary program using technology (e.g., WiFi, computer, Internet) at the public library.
1.☐ Agree
2.☐ Disagree
3.☐ Don't know
4.☐ Not Applicable

Q4h. As a result of resources, information, and opportunities I accessed using public library services (e.g., computers, Internet, WiFi, or other technology; assistance or training from library staff or outside experts): I am better qualified to get a job than I would be if I hadn't received these services
1.☐ Agree
2.☐ Disagree
3.☐ Don't know
4.☐ Not Applicable

Q4i. As a result of resources, information, and opportunities I accessed using public library services (e.g., computers, Internet, WiFi, or other technology; assistance or training from library staff or outside experts): - my academic performance has improved
1.☐ Agree
2.☐ Disagree
3.☐ Don't know
4.☐ Not Applicable

Q4j. The public library is a place where I go to learn about subjects that interest me.
1.☐ Agree
2.☐ Disagree
3.☐ Don't know

Q4k. As a result of resources, information, and opportunities I accessed using public library services (e.g., computers, Internet, WiFi, or other technology; assistance or training from library staff or outside experts): - my earnings have increased
1.☐ Agree
2.☐ Disagree
3.☐ Don't know
4.☐ Not Applicable

SECTION E:COMMUNICATION

Q5a. I communicate more with my family and friends as a result of the technology (e.g., WiFi, computer, Internet) at the public library than I would communicate with them if I did not have access to the public library.

1.☐ Agree
2.☐ Disagree
3.☐ Don't know

Q5b. I feel more connected to my family and friends because I communicate with them using technology (e.g., WiFi, computer, Internet) at the public library.

1.☐ Agree
2.☐ Disagree
3.☐ Don't know

SECTION F: ECONOMIC DEVELOPMENT

Q6a. I have used technology (e.g., WiFi, Internet, computers, Facebook, Skype) at the public library in the last 12 months to: (Please select all that apply)

1.☐ Communicate with others for business purposes (using email, Skype, Facebook or any other online tools)
2.☐ Identify potential customers for my business
3.☐ Promote my services or products
4.☐ Identify potential business partners or employees
5.☐ Create a website (or have one created by outside experts) for my business
6. ☐ Search for agricultural information (e.g., farming equipment or techniques, crop prices, weather information)

Q6b. I have used agricultural information (e.g., farming equipment or techniques, crop prices, weather information) that I found using technology (e.g., WiFi, computer, Internet, Facebook, Skype) at the public library.

1.☐ Agree
2.☐ Disagree
3.☐ Don't know

Q6c. I have shared agricultural information (e.g., farming equipment or techniques, crop prices, weather information) that I found using technology (e.g., WiFi, computer, Internet, Facebook, Skype) at the public library.

1. ☐ Yes
2. ☐ No

Q6d. I have used public library services (e.g., technology, physical space for meetings or study sessions, informal training or assistance by library staff or external experts) in the last 12 months to:(Please select all that apply)

1.☐ Write a resume or CV
2.☐ Find job listings or employment opportunities
3.☐ Apply for a job
4.☐ Seek job listings or employment information on behalf of someone else

Q6e. I have saved time by using technology (e.g., WiFi, computer, Internet, Skype, email) at the public library to communicate for my business.

1.☐ Agree
2.☐ Disagree
3.☐ Don't know

Q6f. As a result of resources, information, and opportunities I accessed using public library services (e.g., computers, Internet, WiFi, or other technology; assistance or training from library staff or outside experts):
my business has grown (e.g., number of customers, employees and/or revenue has increased

1.☐ Agree
2.☐ Disagree
3.☐ Don't know
4.☐ Not Applicable

Q6g. As a result of resources, information, and opportunities I accessed using public library services (e.g., computers, Internet, WiFi, or other technology; assistance or training from library staff or outside experts): - my business' profit has grown

1.☐ Agree

2.☐ Disagree
3.☐ Don't know
4.☐ Not Applicable

Q6h. As a result of resources, information, and opportunities I accessed using public library services (e.g., computers, Internet, WiFi, or other technology; assistance or training from library staff or outside experts): - my agricultural productivity/yield has increased

1.☐ Agree
2.☐ Disagree
3.☐ Don't know
4.☐ Not Applicable

Q6i. As a result of resources, information, and opportunities I accessed using public library services (e.g., computers, Internet, WiFi, or other technology; assistance or training from library staff or outside experts): - my farming/agricultural income has increased

1.☐ Agree
2.☐ Disagree
3.☐ Don't know
4.☐ Not Applicable

Q6j. I saved money by using technology (e.g., WiFi, computer, Internet) at the public library to buy products or services.	**Q6k. I received a job offer after using public library services (e.g., WiFi, computer, Internet, training or assistance from library staff or outside experts) to apply for the job.**
1.☐ Agree	1.☐ Agree
2.☐ Disagree	2.☐ Disagree
3.☐ Don't know	3.☐ Don't know
4.☐ Not Applicable	4.☐ Not Applicable

SECTION G: HEALTH

Q7a. I have used public library services (e.g., technology, physical space for meetings or study sessions, informal training or assistance by library staff or external experts) in the last 12 months to:(Please select all that apply)

1.☐ Find health information that meets my needs (e.g., related to medical conditions, medical treatment, health providers, diet, nutrition, fitness or exercise)
2.☐ Search for preventative health information (i.e. information about preventing or slowing the course of an illness or disease, about nutrition, diet, exercise or fitness
3.☐ Search for health treatment information (e.g., medical procedures, health providers)
4.☐ Seek health information on behalf of someone else

Q7b. I have used health information that I found as a result of public library services (e.g., WiFi, computer, Internet, training or assistance from library staff or outside experts).

1.☐ Agree
2.☐ Disagree
3.☐ Don't know

Q7c. Health information that I found as a result of public library services informed a decision I made about my health.

1.☐ Agree
2.☐ Disagree
3.☐ Don't know
4.☐ Not Applicable

Q7d. Health information that I found as a result of public library services helped to improve my health.	**Q7e. Health information that I found as a result of public library services and then shared with another person helped to inform that person's health decisions.**
1.☐ Agree	1.☐ Agree
2.☐ Disagree	2.☐ Disagree
3.☐ Don't know	3.☐ Don't know
4.☐ Not Applicable	4.☐ I did not share health information

SECTION H: GOVERNMENT AND GOVERNANCE

Q8a. I have shared government information that I found using technology at the public library (e.g., WiFi, computer, Internet).

1.☐ Agree
2.☐ Disagree
3.☐ Don't know
4.☐ Not Applicable

Q8b. By accessing a government service using technology at the public library (e.g., WiFi, computer, Internet):(Please select all that apply)

1.☐ I saved money
2.☐ I saved time
3.☐ I received money, subsidies or support owed to me by the government
4.☐ Not Applicable

Q8ci. By searching for government information using technology at the public library: I found a job

1.☐ Agree
2.☐ Disagree
3.☐ Don't know
4.☐ Not Applicable

Q8cii. By searching for government information using technology at the public library: I am better able to exercise my rights as a citizen

1.☐ Agree
2.☐ Disagree
3.☐ Don't know

Q8cd. As a result of public library services (e.g., Internet, computers, training or assistance from library staff or outside experts), I learned about: (Please select all that apply):

1.☐ The structure of government such as the duties of each branch of government (the roles and responsibilities of the executive, legislature, judiciary)
2.☐ The political issues of today (the history of these issue, the relevant facts and the alternatives that are proposed)
3.☐ The current political leaders of Jamaica as well as of other nations
4.☐ The political affairs of other countries
5.☐ Important political groups in Jamaica

SECTION I: AWARENESS AND ADVOCACY

Q9a. In your opinion, how important is it for public libraries to be in every community in Jamaica?

5. ☐ Very Important
4. ☐ Somewhat Important
3. ☐ Neither Important Nor Unimportant
2. ☐ Somewhat Unimportant
1. ☐ Very Unimportant

Q9b. Would you say the library plays an important role in your community? For example literacy campaigns, health, education, cultural activities, religious activities, community development etc.

1.☐ Agree
2.☐ Disagree
3.☐ Don't know

Q9c. If you needed to use the Internet at no charge to you, where would you go?

Q9d. If you wanted to borrow a book to read, educational DVDs or CDs where would you go?

Q9e. How aware are you of the work of the Jamaica Library Service?

5 ☐ Extremely aware
4 ☐ Moderately aware
3 ☐ Somewhat aware
2 ☐ Slightly aware

1 ☐ Not at all aware

Q9f. Are you aware of the Jamaica Foundation for Lifelong Learning's (JFLL) High School Education Diploma Programme? Q9a.	Q9g. Are you aware that the library will offer access to training modules for all levels of the Diploma Programme?
1. ☐Yes	1. ☐Yes
2. ☐No	2. ☐No

Q9h. Would you be interested in enrolling in the Jamaica Foundation for Lifelong Learning's (JFLL) High School Education Diploma Programme?

1. ☐Yes
   Why?

2. ☐No
   Why not?

SECTION J: DEMOGRAPHICS

Q10a. What is your gender?	Q10b. Would you say you live in a:	Q10c. What is your age at your last birthday? (allow numerical answers)
1.☐ Male	1.☐ Rural area	
2.☐ Female	2.☐ Urban area	
	3.☐ I don't know	

Q10d. Do you have a disability?

1.☐ Yes
2.☐ No
3.☐ Prefer not to say

Q10e. In your home, do you have the following technology: (Select all that apply)

1.☐ Computer
2.☐ Internet
3.☐ Mobile phone

Q10g. What is your highest level of education?

1.☐ No Formal Education
2.☐ Primary / Prep School Education
3.☐ All-Age School / Some Secondary Education
4.☐ Completed Secondary School Education
5.☐ Vocational / Skills Training
6.☐ University Degree
7.☐ Some Professional Training Beyond University
8.☐ Graduate Degree (MSc, PhD etc.)

Q10h. In terms of work, which of these best describes your present situation?

1.☐ Employed, Full-Time Job
2.☐ Employed, Part-Time Job
3.☐ Self-Employed
4.☐ Unemployed, Out of work
5.☐ Seasonally Employed
6.☐ Student
7.☐ Sick/Disabled
8.☐ Retired
9.☐ Other – Please state _____

Q10i. What is your occupation?	Q10j. Which would you say best represents your present position in Jamaican society?
	1.☐ Lower class 3. ☐Middle class
	2.☐Upper-middle class 4. ☐Upper class

Q10k. What is your annual income? If you would prefer not to respond to this question, you may leave it

blank. (allow numerical answer)

Q10l. What is your Nationality?   Q10m. What is the name of the Community where you live?

Q10n. Which parish do you currently reside in?

1.☐ Kingston   4.☐ St. Ann   7.☐ St. Elizabeth   10.☐ Portland   13.☐Manchester
2.☐ St. Thomas   5.☐ St. James   8. ☐ Clarendon   11.☐ Trelawny   14.☐St. Catherine
3.☐ St. Mary   6.☐ Westmoreland   9.☐St. Andrew   12.☐ Hanover

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VALIDATION

Q99a.Telephone Number for Participant :_____
Q99b. Name of Interviewer:_____
Q99c. Date of Interview: _____ - 6 - 2014
Q99d. Field Supervisor:_____
Q99e. Date of validation:_____
Q99f. Internal Validation: ☐ 1. Yes☐☐ 2. No
Q99g. Internal Validator:_____ _____
Q99h. Special Comments:_____

For Official use only
INTERVIEWER DECLARATION

I ……………………………………………………………….. who work on behalf of the CLG, certify that the present questionnaire was administered according to the instructions given during the briefing. Any change made intentionally to the methodology, the data collection or the questionnaire data will be ground for cancellation of that questionnaire, its payment and the payment of all work done for this survey. I hereby fully accept this liability.

Appendix 4

COVER SHEET
The Jamaica Library Service
<u>Baseline Study</u>

My name is _____ and I have been contracted by the Centre for Leadership and Governance, a research unit in the Department of Government, University of the West Indies (Mona) to conduct a Baseline Study of the impact of libraries in facilitating the use of information and communication technologies (ICT) in Jamaica. This Baseline Study is part of a comprehensive ICT programme that has been commissioned by the Jamaica Library Service (JLS) to, among other things:

- Provide Jamaicans with increased access to ICT services
- Provide ICT and other training programmes to promote personal, organizational and national development
- Provide new and enhanced programmes and services responsive to users'/non- users'/stakeholders' needs
- Promote programmes and services to existing and potential users to increase library usage
- Create greater awareness of the value of public libraries in communities to build local and national support

The programme is funded through the Global Libraries Initiative and the Government of Jamaica.

I am inviting you to participate in this research study by completing this questionnaire. The questionnaire will require approximately 20 minutes to complete. Participation is strictly voluntary and you may refuse to participate at any time. Please be assured that all the information that you will be providing shall be kept strictly confidential. Your name or other identifying information will not appear on any study report. We will be doing a follow-up study next year and therefore we are kindly asking you to share your telephone number so that we may contact you for this interview.

If you have any questions or concerns please do not hesitate to call the Field Supervisor for this survey - Mr. Gavin Daley 876-386-1591.

We thank you again for your cooperation.

The Centre for Leadership and Governance Management Team
Centre for Leadership and Governance
Department of Government
University of the West Indies
Mona Campus
Phone: 876-977-5935

Revisiting Disaster Management after Hurricane Ivan: The Case of The University of the West Indies (UWI), Mona Library

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The University of the West Indies, Mona

Abstract

Purpose: This paper seeks to highlight the observations made and the lessons learnt by an academic library from a category five hurricane, Hurricane Ivan, which devastated Jamaica in September 2004. It describes how these observations and lessons transformed the library's disaster management programme and its preparation, mitigation and management of future tropical storms and hurricanes.

Methodology: Using a case study approach, this paper describes the damage caused by Hurricane Ivan, subsequent tropical storms and hurricanes up to 2016, to determine whether the impact of Hurricane Ivan truly resulted in lessons learnt as evidenced by changes in the disaster management programme at the Mona Library. These lessons, arranged under themes identified using Strauss' "in-vivo coding", highlight both the challenges faced and successes achieved and are presented in pictorial and textual forms.

Findings: The observations made and lessons learnt from the devastating impact of Hurricane Ivan facilitated a number of capacity building initiatives such as staff training, the acquisition of resources and improvements in the physical infrastructure throughout the library.

Research Limitations / Implications: This study is based on one institution's experience so some of the challenges and solutions identified may be unique. A comparative study of the experiences of libraries in other small island developing states in the Caribbean and elsewhere might identify issues and solutions that are common to this group. However, the literature identifies some common themes that seem to apply to many, if not all library disasters.

Originality / Value: This will be the first published paper on the impact of Hurricane Ivan on an institution in Jamaica. For The University of the West Indies (Mona), Library this hurricane became, in terms of disaster management, the benchmark against which other tropical cyclones are measured. This paper is of value as it will provide the library and information community with further insights into disaster management. Additionally, it highlights a number of practical and creative solutions to challenges that arise, particularly from water damage, which can be adopted by other institutions and may be particularly useful to those in developing countries.

Paper type: Research paper

Keywords: Hurricane Ivan, natural disasters, University of the West Indies, Mona Library, Disaster management, Tropical cyclones, Jamaica

Introduction

"A library or archives disaster is an unexpected event which puts collections at risk. No institution can be excluded from or is immune to such a possibility" ("Disaster Planning" 2). The UWI, Mona Library exemplifies this quotation.

From 2001 to 2016 Jamaica experienced two tropical storms and nine hurricanes: Michelle in 2001, Charley and Ivan in 2004, Dennis, Emily, and Wilma in 2005, Dean in 2007, Sandy in 2012 and Mathew in 2016, as well as two tropical storms: Gustav in 2008 and Nicole in 2010. Hurricane Ivan battered the island of Jamaica on September 10 and 11, 2004, causing severe damage to buildings, machinery, equipment, collections, and disruptions in major services throughout various sectors of the island's economy. The library and information sector was not excluded. All the other tropical disturbances that occurred between 2001 and 2016 combined, did not cause as much devastation and damage as Hurricane Ivan, even though some were of similar wind speed and rainfall.

Jamaica's experience of and response to Hurricane Ivan revealed a number of issues and lessons related particularly to disaster planning, preparation, mitigation and management to be learnt by the country's institutions and organization. This paper documents the lessons observed and learnt by the Mona Library and discusses how they transformed the planning, preparation, mitigation and restoration exercises for future tropical storms and hurricanes. Due to the experience of Hurricane Ivan, the level and type of damage and destruction reported in 2004 never reoccurred in subsequent tropical storms and hurricanes. The Library's disaster management efforts, therefore, can be considered proof that the lessons were not just observed but were also lessons learnt.

Background

The UWI, Mona Library

The then University College of the West Indies was established in Jamaica in 1948 as a college of the University of London. Coinciding with Jamaica's independence in 1962, it achieved full university status and became known as The University of the West Indies (UWI). The UWI is now a multi-locational university with four main campuses across the Caribbean: Mona, Jamaica

(the campus of focus for this paper); St. Augustine, Trinidad and Tobago; Cave Hill, Barbados; and the Open Campus. The UWI offers programmes at the undergraduate and graduate levels in Medicine, Law, Humanities and Education, Social Sciences and Science and Technology.

Each campus has a library system headed by a Campus Librarian who provides leadership for the respective campus; the University Librarian has the overall leadership of all UWI's libraries. At Mona, the library system (hereafter referred to as Mona Library) is comprised of five (5) libraries: the Main Library (ML), established in 1952; the Science & Engineering Branch Library (SEBL) established 1973; the Medical Branch Library (MBL) established in 1973; the Law Branch Library (LBL) established in 2011 and the Library at the Western Jamaica Campus (WJC Library) established in 2008 in Montego Bay. The ML serves mainly the Faculties of Humanities and Education as well as Social Sciences, while the three other branch libraries provide dedicated services to the faculties of Science and Technology, Medicine, and Law. WJC Library, although a smaller branch library with less clients, provides services to all the faculties.

The UWI, Mona Library and Disaster Preparedness
Prior to 1990, the Mona Library had no official disaster manual, but early in the 1990s, a series of leaflets dealing with various types of disasters, for example, fires, hurricanes and earthquakes, was compiled. During this period, the Main and Branch Libraries carried out their individual disaster efforts. It was not until 2003 that an official disaster manual was created (*The Library's Disaster Preparedness Handbook*). This disaster manual was based on the series of leaflets but it also included far more comprehensive disaster related information. For example, the manual delineated clearly lines of responsibility and the associated activities for protecting human lives as well as library resources in the event of any type of disaster.

In addition to these efforts, in 2006 a Conservation and Preservation Librarian was appointed to carry out not only the Library's preservation programme but also to provide leadership for its disaster and emergency management programme. The Preservation and Conservation Librarian also provides guidance to other UWI libraries as required and, along with select librarians, paraprofessionals and support staff, constitutes the Library's Disaster Committee. Each member of the committee is assigned a specific role which, together with the duties and responsibilities

associated with it, is listed in the manual. In addition to the committee members, all other staff members receive orientation and training and is assimilated into disaster exercises in order to undertake and perform these activities effectively and efficiently.

The Disaster Committee meets at least once a semester and more frequently during the hurricane season, especially when there is a threat of a tropical storm or hurricane. Each year the committee creates an action plan to address issues in the vulnerable areas in the Main and branch libraries; discusses the feedback from the previous year's efforts, its successes, failures, observations and lessons from actual or threatened disasters; and plans for training new staff and committee members.

The university has recognized the need to focus on disaster preparedness in general, as well as heavy rainfall, tropical storms and hurricanes in particular, the most prevalent natural disasters occurring in Jamaica. Initially, the library was the only department on the Mona campus with an established disaster committee and a custodian assigned when there is an impending tropical disaster. The custodian remains in the building during the passage of the hurricane to deal with minor problems and inform the administration of major issues. Modeling the success of the library's disaster and emergency planning, preparation and management programme, faculty, other departments and centres have implemented a similar custodian programme. In 2016 with the impending passage of Hurricane Mathew, the custodian programme was officially institutionalized with its operations and management assigned to the Office of the Campus Registrar. In addition, the library's disaster plan has been integrated into the university's emergency management system. The campus administration wanted to ensure that it made every effort to prevent or at least minimize the damage to the university's facilities and its contents during the passage of any tropical storm or hurricane.

Literature Review

Birkland argues that post-disaster "lessons learnt" documents are often fantasy documents as it is difficult to test whether learning happened after an extreme event because insufficient time has lapsed between the event, the creation of the report, and any subsequent tests of the lessons (146-147). He believes instead that "these documents really focus on 'lessons observed' or, more

simply, the observations that officials and experts made about the preparations before and responses to the crisis or disaster" (147). He notes that this is not true in all cases, but the general trend is towards producing such documents to prove that some authoritative actor has done something (147). A review of the literature reveals a number of important lessons from library disasters in the United States, which are presented in this section. Whether these lessons were truly learnt or were merely observed is not the focus of this section, it seeks only to highlight some of the lessons identified from experiences with major natural disasters.

In order to highlight some of the important lessons learnt from this literature, the lessons reported were coded using Strauss' "in-vivo coding". This involved selecting from the literature, words or phrases that stood out as potentially significant to showcase the lessons. These words or phrases were used as themes (same as codes and categories), they were: (a) information, inventory and communication; (b) resource acquisition; (c) training, testing and practice; (d) fluidity, change and flexibility; (e) partnerships; and (f) stand-by or reserve advantage. These identified themes were further used to discuss and analyse lessons observed and learnt from Hurricane Ivan by the Mona Library.

Information, Inventory and Communication
Two dimensions of information, inventory and communication are highlighted in the literature: (a) preparing an inventory of important documents such as a disaster plan, a list of keys, clearly labelled, with their location and contact information to facilitate communication and access and (b) preparing an inventory of the library's physical resources. Ellis made the point, "evacuating multiple copies of disaster plans, insurance policies, inventories, and contact information should be a requirement" (110). He cautions however "the type of disaster and whether there is any warning beforehand will factor into how this information is distributed and kept safe" (110). Oliver, reflecting on the handling of a library disaster, reiterated the importance of information, inventory and communication (20). In the aftermath of Katrina, the librarian he refers to revealed that she should have completed the previous year's inventory and updated her phone list with a copy at home. Similarly, Clareson and Long noted, "The sheer magnitude of Katrina's impact has led task force members to examine new issues such as clarifying policies and procedures regarding communications after disasters. No one anticipated that library staff would be so

widely scattered, separated from each other and their institutions for so long" (39). In the same vein, the experiences of Donahue and Tuohy also highlighted communication as a recurring lesson (5). They stated:

> Our systems of command, control, and coordination are predicated on being able to communicate. As one expert told us, "For thirty years, we've said that communications is our biggest problem because it's a house of cards: When communications fails, the rest of the response fails." A major challenge of large disasters is that they destroy our physical infrastructure, including our communications equipment. The most recent example of this comes from Hurricane Katrina, which "destroyed an unprecedented portion of the core communications infrastructure throughout the Gulf Coast region. …" (Donahue and Tuohy 7).

Both Corrigan and Young pointed out the same lesson but offer solutions. Corrigan further stated that, "it would be best to include in these alternate contact points such as Hotmail or Yahoo email addresses and to maintain a library blog or news group on a remote server as a safe central point that staff members can check for information" (304). Young added that the best advice is to have a plan that everyone is aware of and knows what his/her roles and responsibilities are (23).

Addressing the issue of preparing an inventory of the library's physical resources, Clareson and Long noted: "one of the most important things is to be aware of what you have" (38). Bruce and Schultz also made the same point. All raise the question: How good or current is your catalog, inventory or shelf list? Corrigan's response was that while experience has shown that holdings information from the library catalog is useful, it may be incomplete in capturing the actual number of physical items owned, hence periodic shelf counts are highly recommended as probably the most reliable source for an accurate item count. Clareson and Long made the additional point that it is also important to be aware of what you would like to save first and Corrigan added "leaving a data trail to follow in the wake of a disaster is essential to determining losses (Corrigan 304). Again, it is not just the preparation of an inventory of the library's physical resources that is important, but there must also be a system of communication in place to ensure accessibility in times of need.

Resource Acquisition
The review of the literature revealed that the term resource acquisition has a tangible component (physical aspect) as well as an intangible component (human aspect). Ellis expressed the view

that the library should "maintain a disaster kit at all times and replenish supplies as needed, and depending on the institution's needs, they may require multiple disaster kits at several locations for one collection" (111). In a similar vein, Donahue and Tuohy stated:

> Large-scale, long-duration incidents demand more resources – personnel, equipment, supplies, commodities, specialized capabilities – than any agency or government can keep on hand, so these resources must be obtained rapidly when a disaster occurs. This makes resource acquisition and management a major function of incident management. Unfortunately, while some materials are cached and pre-deployed, they are often inadequate to meet actual need. This means that resources must be obtained "real-time" (8).

Similarly, a New Orleans librarian, reflecting on how she handled her library's disaster, revealed that she should have ensured she had identified in advance those people who were in a position to help her obtain crucial resources, which speaks to the human aspect of resource acquisition (Oliver 20). She added that she should have ensured there were flashlights and spare batteries on the premises and acquired basic Personal Protective Equipment (PPE) in the library for herself and her volunteer staff, including a pair of boots on-site. Bruce and Schultz highlighted the human component of resource acquisition; they stressed the importance of having a recovery contractor on retainer. The acquisition of physical resources should be specific to geographical location; the type of library, category and type of disaster. Additionally, the acquisition of both human and material resources will, to some extent, be influenced by the type and size of the library.

Training, Testing and Practice

The theme training, testing and practice ties in closely with resource acquisition, as the various resources that are involved in disaster planning, preparation and management require training, testing and practice. Ellis noted "regularly testing and implementing ideas is a start to further preparation" (110). He further explained "having an idea about how one might respond to a disaster and putting that plan into action are two different scenarios, and every disaster is different" (110). Additionally, "Julia Young, Director of the Archives and Library Division of the Mississippi Department of Archives and History, believes traditional disaster training should be reevaluated in light of Katrina. She recommends that it be more realistic and more frequent" (Clareson and Long 39). Similarly, the librarian referred to by Oliver recognized that she should have ensured that she had a day of training for her volunteer staff so that they would have been

better prepared. (20). Similar trends have been observed and noted as a consequence of the effects of the various tropical storms and hurricanes at other institutions where disasters have occurred. Donahue and Tuohy, who also identified training and exercises as an important lesson (5), went further making an important point, "We spend a lot of time writing [After Action Reviews], which gives us the sense that we learned lessons, but the lessons are not consolidated into a training regimen, and so we don't actually learn them" (Donahue and Tuohy 14). They identified some reasons why plans fail:

> Ultimately these weaknesses go unnoticed because actual plans are not trained fully or exercised realistically. Plans are often developed by mid-level managers. Senior managers and political officials may have the plan on their shelves, but get no formal training on what is in it or how to use it. Similarly, plans are not disseminated to supervisors or training academies. When the time comes for implementation, those on the front lines don't know what the plan calls for (Donahue and Tuohy 8).

They concluded by asserting that "following the analysis through which lessons are identified and appropriate remedies understood, practice is required to inculcate new behavior" (14).

Training should be comprehensive, complete and all inclusive. Senior managers should be mandated to attend the training as they are and will be the key personnel in budgeting and allocating resources that will be needed in the planning, preparation, prevention and restoration exercise if a disaster occurs. Exposure to training will ensure that they fully understand and appreciate the importance and magnitude of the disaster preparation, prevention and recovery exercise. Similarly, Jaeger, et al. noted the need for all librarians to be included in disaster training exercises (211). They state:

> Provide public librarians with disaster preparedness, relief, and clean-up strategies. Librarians do not typically receive training in hurricane (or other types of disaster) preparedness. The ground zero preparations, plans, resources, and other activities that may occur prior to, during, and after a hurricane (or other disasters) are not well   known among public librarians and are unlikely to be taught in schools of library and information science. Thus the state library, regional networks (such as SOLINET in the Southeast), and other organizations may need to rethink the need for such training, the frequency with which it is offered, and the various methods by which such training can be provided (211).

While Donahue and Tuohy suggested useful training tips, they also recognised the challenges associated with the implementation of training particularly the lack of adequate funding to sustain corrective action, training programmes for staff and the acquisition of equipment (17). Their recognition of this challenge highlights the need to identify creative ways of generating funds for training. Clareson and Long also recognised the importance of training and added another dimension to the discussion by highlighting the importance of training content: "Training needs to teach people critical thinking and flexibility, not just how to deal with artefacts and collections" (39). The key to learning lessons, according to Donahue and Tuohy, is "to improve the way we train and exercise. Most importantly, exercises must be recast as learning activities targeted at improving performance, not as punitive tests where failure is perceived as threatening an organization's ability to garner funding" (18).

Fluidity, Change and Flexibility

Several aspects of the recurring theme fluidity, change and flexibility overlap with training, testing and practice. When ongoing training, testing and practice are in place, fluidity, change and flexibility will be possible, meaningful, successful and sustainable. Ellis highlighted his experience dealing with Katrina: "this storm taught us that disaster planning is a fluid process since we cannot accurately plan for the unknown. Incorporating the knowledge learned from each disaster is a must, but realizing that each disaster will have its own unique variables is also important to recognize before a disaster strikes" (111). Donahue and Tuohy added to the discussion by pointing out: "Learning is, at its core, a process of growth; thus a successful learning process requires a commitment to change. Organizational change is notoriously difficult, but particular challenges attend change in the emergency response arena" (10). They also highlight some challenges associated with change, notably:

> Even following a major event, it is hard to sustain a commitment to change long   enough to accomplish it. After an incident, it takes time to conduct an analysis and identify lessons. Washington D.C. and the public have very short time horizons; neither waits for these reports to move ahead. The government tends to focus on fast (and inexpensive) solutions – quick wins they can point to before public attention wanes. This kind of nearsightedness is inconsistent with meaningful change. By the time reports come out, there is no will (nor funding) to implement changes. By then, leadership has either turned over or moved on to something else. (Donahue andTuohy 11).

The response to this challenge is to find creative ways to maintain the interest of leaders, administrators, politicians, key players in civil society and the institutional heads, including those in libraries who are responsible for leading meaningful change. In addition, effective and proactive leadership is needed at all levels in order to engage the concepts continuity, long-term commitment and the long view in disaster planning, prevention, and management.

Partnerships

Partnership is also a recurring theme that can be used to categorise some of the lessons libraries have identified in the aftermath of natural disasters. Clareson's and Long's report acknowledges the need for formal partnerships with municipal and state agencies and first responders, but they also highlight the benefit of less formal arrangements: "We had a good rapport with the local police department and state troopers so we were able to call upon them informally" (39). Jaeger et al, confirmed that partnership is an important lesson to be learnt. They note: "The state library can also serve as a clearinghouse for disaster preparedness information, such as making libraries aware of good disaster plans, models for how local libraries can coordinate efforts with local government, and coordinating training related to disaster preparedness. In addition, the state library has the ability to coordinate library services during a hurricane with other state agencies" (209). In a similar vein, Corrigan stated:

> Our experience appears to show that in the case of major disaster events libraries do not need their own individual pre-prepared disaster response plans as much as they need to be included in an overall general campus plan that makes effective use of a qualified disaster mitigation company. The reason is simple: in the event of an actual disaster, the type of equipment, expertise, and organization required (especially for library or other document salvage but also for critical building environmental control) is obviously far beyond what an individual library or even an individual institution could reasonably hope to continually prepare for….While library oversight and involvement is critical, much of the response itself is better left to the experts (304).

While partnerships and outside assistance may be good, library administrators should be cognizant of their disadvantages or limitations, Corrigan warns:

> Be wary of the quick fix, easier said than done but important nonetheless. Possible sources of assistance such as insurers, government agencies, and top level university administrators may have little understanding of the specific nuances of how libraries work: about assessing losses of collections or library equipment or staff; about the difficulty of replacing even recently acquired collections; about how even donated materials have significant costs associated with cataloging and physical processing; about

the continuing importance of physical spaces to house library collections. A basic rule of thumb for library administrators in disaster-affected libraries might be to grab for opportunities, but test each one against how or whether it would benefit the institution as a whole two or three years down the road (304-305).

Jaeger et al. also noted that outside help cannot always be relied on. They contended:

A further lesson is that public libraries may not be able to rely on immediate outside support after a disaster…. A clear lesson from the affected communities during the 2004 and 2005 hurricane seasons is that public libraries should be ready to do as much as possible to help their communities survive and recover from a disaster without relying on immediate outside support from the federal government. As the federal government may or may not be prepared and able to help your community in the aftermath of a disaster, your library needs to be ready to do everything it can independently (210).

Therefore, while it can be beneficial for library administrators to partner with their parent body as well as with organisations outside their institutions, they will have to determine the level and the nature of partnerships. In addition, they should determine the extent to which they will allow outside persons to steer their recovery efforts. Library administrators should be an integral part of the planning and the execution of any initiative and also should be outspoken about the type of assistance that would be beneficial for the institution. Hence, whenever a partnership, collaboration or networking for assistance is being considered library administrators will need to balance the benefits of independence against those of partnerships so that in the end, the library and its clients, and the community benefit.

Standby / Reserve Advantage

The advantage of a standby/reserve is also a recurring theme that can be used to categorise some of the lessons libraries have identified in the aftermath of natural disasters. This theme overlaps with resources acquisition. In order to provide standby/reserve advantage, the necessary resources will need to be procured and secured. Jaeger et al. noted "library technology infrastructure is critical to disaster recovery and it should be protected to ensure operability" (211). There is therefore a need for server storage and also other forms of back-up systems on and off site. Corrigan explained: "Backing up important electronic office data – Excel files, Word documents, etc. –will come in handy only if the backup copy is safe" (304). He further adds, library personnel should be encouraged to save and store important distributed documents to create multiple backups as server storage alone can be vulnerable. One should back up the

office PC files and they should be periodically copied to a portable hard drive, which he notes is very cheap, is about the size of an average personal digital assistant (PDA) and is very simple to evacuate (Corrigan 304). Similarly, Young reported: "My automation program was loaded on my laptop, so I was able to print out a "collection value" report if requested by insurance adjusters" (23). The foregoing suggests that having a standby/reserve provides the advantages of continuity and access to the library products and services in the event of a disaster. The importance of backing up any data, electronic or print, cannot be overstated. In most library environments, significant aspects of the resources and operations are electronic. Therefore, without a backup or any "reserve" commencing service to the clienteles after a disaster will, in itself, be another disaster.

Conclusion

The themes categorised and discussed: information, inventory and communication; resource acquisition; training, testing and practice; fluidity, change and flexibility; partnerships; and stand-by/reserve advantage, make clear that planning, coordination, and communications are all important in maintaining an effective and sustainable disaster management programme. Additionally, resource management, situational awareness and analysis, and training and practice provide useful observations, and ultimately lessons for librarians to consider as they plan and prepare to mitigate the destructive effects of natural disasters especially tropical cyclones. The similarities in the experiences reported in the literature underscore the need for libraries to learn from the circumstances of others and see how best these observation and lessons can be utilised in their own unique situation. The relevance of this paper, therefore, is that it seeks to contribute to the disaster management literature with the hope that the observations made and the lessons learnt at the Mona Campus can inform and guide other members of the library community in the execution of their disaster management efforts in their own unique situations. The paper seeks to answer the following questions:

1. What lessons did the Mona Library observe and learnt from Hurricane Ivan in 2004?
2. How did these observations and lessons learnt contribute to the transformation of the disaster management programme at the Mona Library?
3. How did the transformed disaster management programme facilitate the Mona Library to prepare, plan and manage subsequent tropical storms and hurricanes?

Methodology

Qualitative data analysis is frequently interested in "eliciting the stories behind particular individuals or groups" (Bamberger 15). Case studies contribute to our knowledge of group and organizational related phenomena (Yin 1). They also allow studies to retain the meaningful characteristics of organisational activities (Yin 2). Therefore, a case study approach was the particular qualitative method adopted to elicit the story of The UWI, Mona Library's experience and the lessons observed and learnt from the passage of Hurricane Ivan and how this influenced its planning, preparation, mitigation and management of future tropical storms and hurricanes.

The initial step was to identify, from the literature reviewed, words or phrases that stood out as potentially significant for showcasing the lessons learnt and observations made; applying Strauss' "in-vivo coding", these words and phrases were used as themes (same as codes or categories). The themes that emerged were: information, inventory and communication, resource acquisition, training, testing and practice, fluidity, change and flexibility, partnerships, and stand-by/reserve advantage.

During the period 2004-2006, the library's administration and disaster team made extensive case notes on the lessons and observations. The codes (themes) that had emerged from the literature reviewed were used to code these contemporaneous case notes, input from participant observers, financial records and the strategies and initiatives that were subsequently implemented. In-vivo coding was also applied to see if any new themes (codes) would emerge; however none did. Guided by Patton, the aim was to go beyond the descriptive data "attaching significance to what was found, offering explanations, drawing conclusions, extrapolating lessons, making inferences, building linkages, attaching meanings, imposing order" (423).

Data Presentation and Analysis

The Impact of Hurricanes and Tropical Storms 2001-2016

The first hurricane of the new millennium to affect Jamaica was Michelle in 2001, a category 4 hurricane, which, despite its strength, did not cause much damage to the Mona Library. "On August 10 [2004], Hurricane Charley, a category 1 storm, passed along the island's south coast. It caused extensive flooding in sections of southern parishes. Four weeks later, Hurricane Ivan,

followed a similar path, though with far more devastating results." (Carby). Hurricane Charley caused slight damage to the Mona Library but the effects of Hurricane Ivan were, to use Carby's description, "devastating". It caused extensive flooding which resulted in serious infrastructural and collection damage. In the ML the entire ground floor was flooded with water rising to a level of seven inches in some sections. The West Indies and Special Collections (WISCs), the Humanities Collection, the Microfilm Collection, the Oversized Books, and the Maps and Atlases Collections, all housed on the ground floor, were the worst damaged. Figure 1 shows one of the flooded areas.
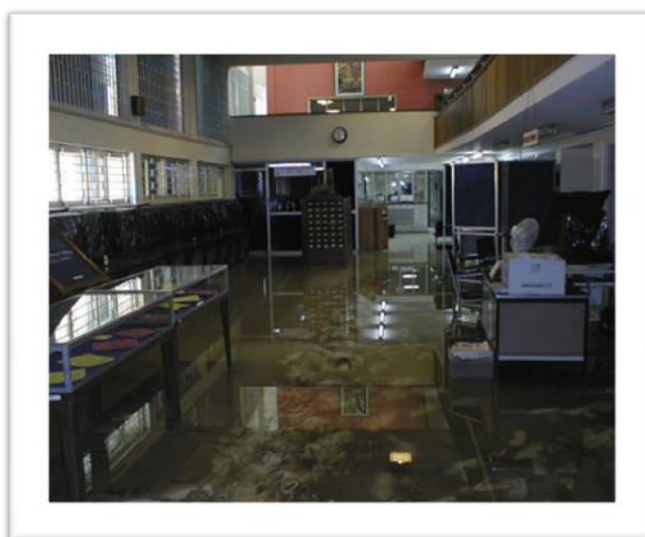

Fig.1. The Catalogue Hall under water

The total damage/loss from WISCs was 4,882 items, and from the Open Shelf Collection 14,419 items. Some of the damaged items from WISCs were irreplaceable because either they were out of print or no funds were available to replace them. In the SEBL much of the damaged occurred in the basement, where the older issues (1790-1989) of journals were shelved. The manhole cover over the drain was forced off by the pressure of the water which then washed throughout the floor, dumping silt and soaking 7,700 bound and unbound volumes. Additionally, water came through the windows and windowsills on the first floor, flooding the carpet in the periodicals reading area and the postgraduate carrels. On the second floor, a window was shattered and a few storm shutters blew off, resulting in flooding in the area. There was no significant damage to the collection in the MBL, see table 1, which follows.

Table 1

The number of items, by type, damaged/destroyed as a result of Hurricane Ivan

Location	Volumes	Pamphlets	Microfilm	Microprints and microfiche	Journals
ML					
WISCs	4,000	1282	500	100 boxes	
Open shelf	14,143	276			
SEBL					7,700

Fig. 2. Damaged books

Fig. 3. Mildewed books being restored

The total number of items damaged or lost was over 19,300; the replacement value of these items was estimated to be JM$37,910,557.20 or US$611,460.60. Other costs incurred as a direct result

of the salvaging and rehabilitation exercise included costs for the clean-up and charges for the additional electricity used for the period, September 19-October 15, 2004, as a direct result of the salvaging and rehabilitation exercise. The damage to the library also affected services. When the University re-opened on September 20, 2004, the services offered to clients were drastically reduced and some sections of the Library remained closed to facilitate the salvaging of water damaged books. The salvaging and restoration exercise took almost ten years to complete. Notwithstanding the long road to recovery, the event laid a valuable framework as to how the library planned and managed subsequent and potential disasters.

Measured against the costs associated with the restoration/replacement of damaged items or the infrastructural damage caused by Ivan, the effects of subsequent hurricanes and tropical storms were negligible. In total, less than a hundred items were damaged/lost from 2004 to 2016; restoration involved salvaging the wet items by air drying. The costs associated with these instances included overtime payments to staff members for cleaning areas of the library flooded by wind-driven rain, and for air drying and rebinding damaged items including the materials used in the rebinding.

As the discussion above indicates, the cost of the restoration exercise and other related costs were a huge financial burden on the UWI for years following the disaster. Fortunately after the massive budgetary allocation for Hurricane Ivan, the only type of cost that has been recurrent it is that associated with the planning, preparation and mitigation activities which have become mandatory whenever tropical cyclones threaten. For example, massive planning, preparation and mitigation strategies were implemented in October 2016 when Jamaica was in the direct path of Matthew, a category 5 hurricane. Matthew turned toward the north and eventually caused no damage, as very little rain fell.

Table 2

Hurricanes and tropical storms 2001 to 2016 and their effect on the Library

Hurricanes/Tropical storms	Date of Occurrence	Category	Impact on the Library (Damage Assessment)
Hurricane Michelle	November 3-4, 2001	4	Wind driven rain caused few mm. of water to enter the library through windows, A/C duct and entrance/exits
Hurricane Charley	August 11, 2004	1	Wind driven rain caused few mm. of water to enter the library through windows, A/C duct and entrance/exits
Hurricane Ivan	September 10-12, 2004	5	Massive devastation (The Impact of Hurricane Ivan on The UWI Mona Library- see page 15-17)
Hurricane Dennis	July 4, 2005	4	Wind driven rain caused few mm. of water to enter the library through windows, A/C duct and entrance/exits
Hurricane Emily	July 17, 2005	4	Wind driven rain caused few mm of water to enter the library through windows, A/C duct and entrance/exits
Hurricane Wilma	October 20, 2005	5	Wind driven rain caused few mm. of water to enter the library through windows, A/C duct and entrance/exits
Hurricane Dean	August 19, 2007	4	2- 8 mm. of water entered the library, causing damage to some items
Tropical Storm Gustav	August 28, 2008	-	Wind driven rain caused a few mm. of water to enter the library through windows, A/C duct and entrance/exits
Tropical Storm Nicole	September 28-August 1, 2010	-	2-8 mm. of water entered the library, causing damage to some items
Hurricane Sandy	October 24, 2012	1	Wind driven rain caused few mm. of water to enter the library through windows, A/C duct and entrance/exits
Hurricane Mathew	October 3, 2016	5	No impact

(Compiled with data from ECLAC and reports from The UWI, Mona Library)

How Hurricane Ivan Changed the Library's Disaster Management Programme

This section highlights the lessons and observations from Hurricane Ivan that aided in the planning, preparations and mitigation for potential hurricanes and tropical storms. These are grouped according to the themes (codes) identified from the literature: (a) information, inventory & communication, (b) resource acquisition, (c) training, testing & practice (d) fluidity, change & flexibility, (e) partnerships, (f) stand-by/reserve.

Information, Inventory and Communication.

The literature reviewed seemed to place more emphasis on preparing an inventory of the library's physical resources rather than infrastructural resources. After Hurricane Ivan, updating *The Library's Disaster Preparedness Handbook* became mandatory in order to reflect the changes to policy and procedures that had been made to address issues that became apparent during the disaster and its aftermath. Additionally, it became evident that a quick ready reference disaster guide was needed to supplement the disaster manual. Consequently, in 2008 two supplementary disaster related documents were introduced: the *Disaster Telephone Tree* and the *Emergency Guideline Handbook*.

The *Library's Disaster Telephone* Tree provides full and current contact details for all the persons to be contacted in the event of a disaster. The *Emergency Guideline Handbook* is an abbreviated version of *The Library's Disaster Preparedness Handbook*. It provides a quick summary of the steps to be followed in the event of an emergency. These documents are updated annually and circulated in both print and electronic format thus ensuring the currency and relevance of the initiatives geared towards preparation, mitigation and restoration. The updates are circulated at the committee level and committee members are expected to update the staff in their respective sections ensuring that everyone understands the steps involved in preparing for an impending hurricane or tropical storm. Initially, one printed copy of each document was available in each section. However, the print copy was found to be somewhat restrictive. Consequently, these documents are now available in electronic format thus increasing access, widening staff awareness, and encouraging staff reading.

Preparing an inventory of the library's infrastructural resources was also highlighted as a dimension of information, inventory and communication. Over the years, the library has experienced financial difficulties which have led to neglect in a few key areas of the building. The vulnerability of these areas was exposed during Hurricane Ivan and it became evident that they needed urgent attention. Consequently, the library embarked on phased improvements which included roof repairs and the installation of accordion shutters to the entrance of each library and to windows and doors to combat wind-driven effects of rain. Notwithstanding these improvements, new areas for roof repairs and the replacement of old wooden windows have been tabled for attention. This renovation exercise is ongoing.

Fig. 4. Infrastructural improvements made since Hurricane Ivan

Resource Acquisition

Ideally, disaster management and recovery equipment should be readily available on site. However, this is not always practical given the uncertainties associated with disasters and especially in developing countries where funds are limited. Following the devastating impact of Hurricane Ivan, several resources had to be acquired as certain indispensable equipment and supplies for the salvaging and restoration aspects of a disaster were not included in the list of essential equipment and supplies prior to 2004, suggesting that an impact of this magnitude was never envisaged. The number of books and other items that required drying and rebinding highlighted the need for essential disaster restoration equipment and supplies to enhance the speed of the recovery process. Consequently, the following items were purchased:

- Mobile drying rack, a quick binding machine, paper towel, blotting paper, alcohol, Lysol, bleach, clothes pins, coated wire for hanging small wet items (for example pamphlets and loose paper-based items)

- Additional items of equipment to ensure timely completion of restorative work; these included a HEPA filter vacuum cleaner to vacuum off mold; wet and dry vacuums to remove excess water; and a number of fans that were used to circulate air for drying items. Figures 5 and 6 show two of these resources in use in the salvaging and restoration processes.

Fig. 5. Drying rack being used to dry a map

Fig. 6. Quick binding machine

Without the purchase of these additional resources, the restoration and recovery time for damaged items would have been longer. Donahue and Tuohy made the point that large-scale, long-duration incidents may demand more resources such as equipment, supplies, and commodities (8). This was certainly true in the case of the Mona Library. The purchase of this equipment although a burden on the budget at the time, may have saved money in the long run as it increased the Library's ability to combat subsequent hurricanes and tropical storms as well as smaller incidents such as flooding and leakage from roof and air conditioning units in heavy rain.

Training, Testing and Practice

Training, testing and practice in disaster preparedness is vital. The impact and the magnitude of damage to the Library's collection from Hurricane Ivan taught the Library's administration that new training for the selected staff members and the Bindery staff was necessary. Despite their skill, competency and the capability in various techniques of binding and restoration, the Bindery staff needed substantial training in the areas of restoration, basic conservation, modern book binding and book repair and other preservation techniques in order to preserve and protect the library's collection after a disaster. To this end, staff training programmes in modern binding techniques and conservation were initiated. These included components on book repair, binding and restoration and were extended to staff in other sections of the Library who were co-opted to assist in the restorative activities. The training the staff received was utilised in restoring wet or water damaged items resulting from other hurricanes in 2007 and 2012 and a tropical storm in 2010. Figure 7, which follows, shows staff members assisting in salvaging activities on water damaged items from tropical storm Nicole.

Fig. 7. Non preservation staff salvaging wet books after Tropical Storm Nicole

Several areas of the Library are prone to flooding; therefore, steps have to be taken to control the proliferation of mold. Orientation and training was introduced in the identification, assessment, cleaning and treatment of mold infested items.

The Preservation Unit, along with the Bindery staff, comprises the lead team on the Mona Campus for treating mold infested documents. The team provides consultation to other departments on mold abatement and the restoration of wet items. The case of the Mona Library, seems to refute the point made by Donahue and Tuohy that "We spend a lot of time writing [After Action Reviews], which gives us the sense that we learned lessons, but the lessons are not consolidated into a training regimen, and so we don't actually learn them" (Donahue and Tuohy 14). The Mona Library has engaged the concepts of continuity and sustained long-term commitment in disaster training and practice.

A number of disaster awareness initiatives, which were introduced post Hurricane Ivan, were institutionalized in the library's operations. These included:

    a. An introduction of a zero tolerance approach to items (for example, files and documents, and equipment, for example, central processing units (CPUs)) being placed on the floors. This practice is not restricted to the hurricane season, but has become standard, to minimize the likelihood of items being soaked or equipment being damaged from flooding.

    b. The practice of shelving items on the bottom shelf was immediately discontinued in areas prone to flooding (see fig. 8, which follows).

Fig. 8. Discontinuation of shelving on the bottom shelf

c. The library secured an abundance of tarpaulins and an adequate stock of garbage bags to cover shelves, computers and other resources in vulnerable areas where the roof and windows are prone to leaks. Staff members in these vulnerable areas have responsibility for ensuring that their areas are always covered with tarpaulin and/or garbage bags not just during the hurricane season but also during periods of possible heavy rains and flooding (see figs. 9 and 10).

Fig. 9. Using garbage bags to secure workstations

Fig. 10. Using tarpaulin to secure shelves of books in the event the roof leaks

d. Sandbags are bought as the need arises. These are placed in low lying areas prone to flooding such as the basement, in front of doors and on top of drains. It seems

that this practice will continue indefinitely since, due to financial constraints, it is unlikely that any major modification to the existing building will be done to correct the underlying problems.

Fig. 11. Using sandbags in a flood prone area

All initiatives, activities and practices relating to training, practice and orientation have become the norm for the library disaster management programme and will continue even if the structural modifications are made. No one can accurately predict the impact of any hurricane or tropical storm, therefore the best that one can do is to always prepare.

Partnerships

Given the magnitude of the damage resulting from Hurricane Ivan, the Library's administration sought assistance from local and international entities and experts in disaster management. These partnership have continued through the years. Immediately following Hurricane Ivan, the Mona Library partnered with a graduate of the University who made arrangements for the Library to utilize a facility to freeze-dry books and other items that were substantially water damaged (see fig. 12, which follows).

Fig. 12. Books in freeze-dry facility

Without this partnership the Library would have lost many more items. Additionally, assistance was sought from library and information professional outside the University, who could assist in the restoration exercise.

On the international level, the library partnered with John Dean, Preservation/Conservation Consultant at Cornell University, New York. This partnership proved invaluable as his expertise in conservation restorative operations informed most of the library's restoration efforts including training and practice. For example, he devised a dehumidifying chamber, which was used to reduce mold growth (see fig. 13, which follows).
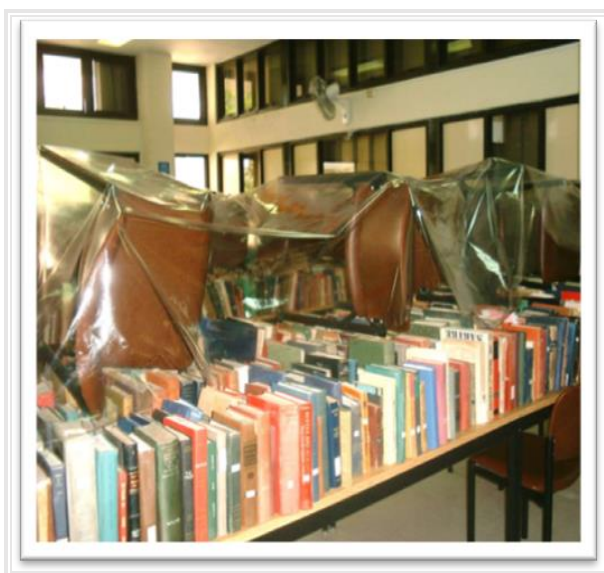
Fig. 13. Dehumidifying chamber devised by John Dean, Preservation/Conservation Consultant

The partnership with John Dean also led to the attachment of key bindery personnel at Cornell University to further their knowledge of conservation restorative operations. He also provided advice on the procurement of specialised equipment needed in the restoration process. Further, this partnership has informed subsequent training sessions in disaster planning delivered to other libraries and departments on and off the campus. Over the years, these partnerships have deepened and strengthened partially because the threat and actual incidence of hurricanes and tropical storms between 2004 and 2016 have justified the need to have this network to rely on. The benefits of partnerships to the Mona Library are therefore consistent with Corrigan's (304) and Clareson's and Long's (39) views on the value of partnerships.
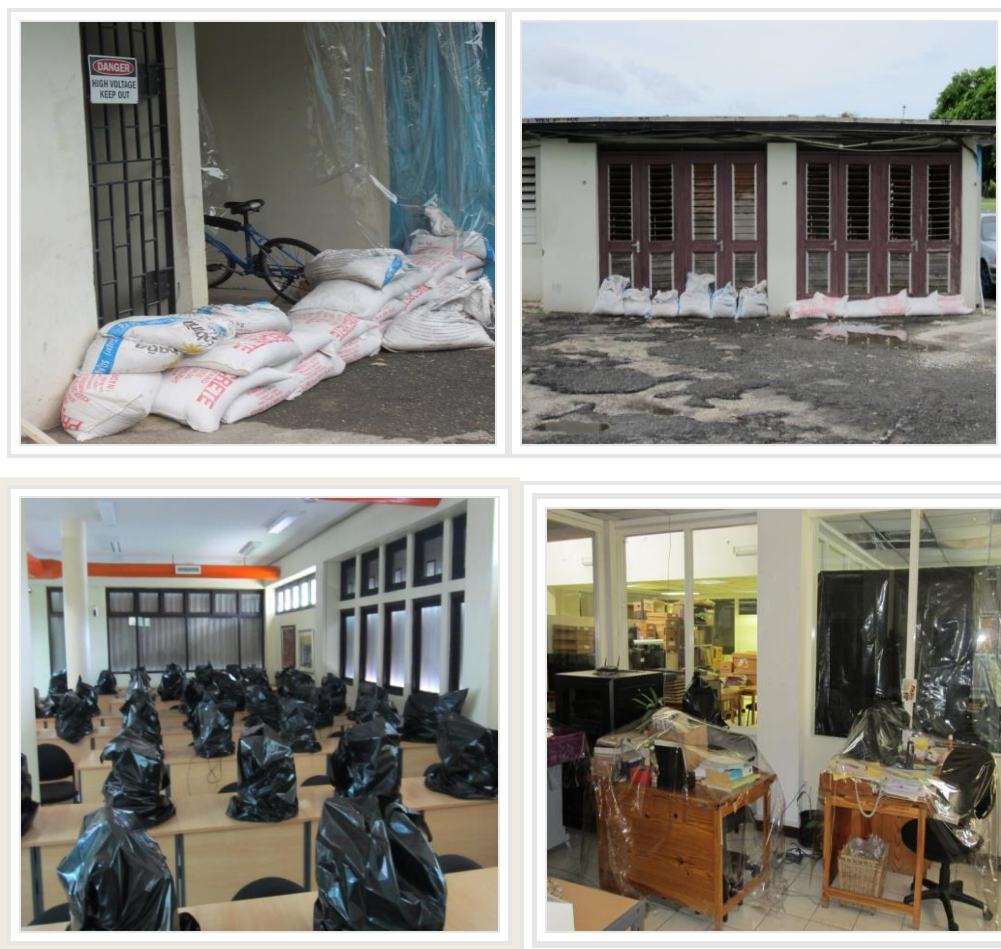

Fig. 14. Hurricane preparation practices that have continued from Hurricane Ivan to Hurricane Mathew

Conclusion and Recommendations

The devastation and damage that occurred as a result of Hurricane Ivan in 2004, presented the Library with many lessons observed and learnt which in turn influenced disaster planning, preparation and mitigation strategies for future hurricanes and tropical storms. The initiatives and strategies introduced after Ivan were documented in *The Library Disaster Preparedness Handbook,* institutionalized in the library's operations and procedures and are maintained by the Disaster Committee headed by the Preservation and Conservation Librarian. Additionally, the devastating impact of Hurricane Ivan facilitated a number of capacity building initiatives such as staff training, the acquisition of resources and improvements in the physical infrastructure throughout the library.

Between 2004 and 2016 the library has significantly improved its disaster management programme. This improvement has been facilitated by dedicated members of staff who have been exposed to ongoing training and have also taken the issue of mitigation seriously. Hurricane Ivan taught the Mona Library many lessons which were incorporated into the planning, preparation and management of subsequent hurricanes and tropical storms and will continue to inform practices into the foreseeable future.

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