OER in the Caribbean Higher Education

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OER IN THE CARIBBEAN HIGHER EDUCATION

OER in the Caribbean Higher Education Institutions

This study is about the OER current status in some Caribbean Higher Education Institutions was launched under the aegis of the ACP Connect Project, co-financed by the European Commission, for the Caribbean Knowledge Learning Network — CKLN.

ASTEC

Astec Global ICT Consortium
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OER in the Caribbean Higher Education
OER IN THE CARIBBEAN HIGHER EDUCATION CONTEXT

Disclaimer

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Executive Summary

Purpose

The present study provides a snapshot of ICT implementation and Open Educational Resources (OER) development and use in some Higher Education Institutions in the Caribbean region. This was carried out in preparation for the "Capacity Building on Development and Use of OER Workshop", which took place in Jamaica, July 2013, under the ACP Connect Project, for CKLN – Caribbean Knowledge and Learning Network.

Methodology

The study involved a dual qualitative and quantitative analysis of the status of OER adoption in the Caribbean Region, with 3 main activities: i) a Desk review of current literature and studies on the use and impact of OER in TEI, around the world and in particular in the Caribbean region; ii) application of a joint survey administered to the NREN with a question specifically oriented to OER; and iii) an institutional survey.

 Due to time and geographical constraints, the institutional survey was answered by a small sample of 23 Institutions, from 4 countries.

The Commonwealth of Learning has been promoting the integration of OER in educational context in the Caribbean, through the integration of OER into broader ICT policies in education, as a way to promote organizational change. The institutional survey addressed the ICT Policy, followed by OER Policy and OER use and development in the institutions surveyed.

There are several definitions of OERs. For the purposes of this study, the definition provided by Hewlett Foundation, in 2007 was considered.

 "Teaching, learning, and research resources that reside in the public domain or have been released under an intellectual property license that permits their free use and re-

purposing by others. Open educational resources include full courses, course materials, modules, textbooks, streaming videos, tests, software, and any other tools, materials, or techniques used to support access to knowledge."

(Atkins, Brown and Hammond, 2007)

Hewlett Foundation

The importance of OER in the Caribbean Region

More and more governments are considering OERs as a public good that require being legislated and taken into consideration when funding education. The adoption of OER presents benefits at national and institutional levels by providing opportunities to diversify curriculum offerings in a cost effective manner, and simultaneously position the Higher Education Institutions in the global learning market, with unique contents[1]. The cost of developing high quality educational materials is lowered significantly when shared across several institutions becoming a cost effective approach. Open textbooks can also reduce the average amount spent up to 80%, presenting an enormous cost reduction for governments, when subsidizing textbooks, and parents.

Moreover, higher education institutions and bodies are also reviewing their existing educational policies to integrate OER in them, by changing the types of licensing, participating or creating OER repositories. OERs decrease the development costs of their content, increase the quality and media diversity of educational content, enhance the institutions reputation, position their offering among new students and communities, crate new educational partnerships and alliances, and provide a marketing tool to recruit new students.

In the USA, all contracts and grants funded by the California Community Colleges Chancellor's Office are made available under a Creative Commons Attribution license (CC BY).

The European Commission announced a new Initiative "Opening-up Education", launched on September 2013, "it acknowledges that openness has the potential to widen access to education and to improve, amongst others, access, cost-efficiency

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[1] http://wikieducator.org/Educators_care/OER_Benefits_and_myths#cite_note-1

and quality of teaching and learning". It also addresses the potential of OER and its policy objectives "Increased use of Open Educational Resources (OER), ensuring that educational materials produced with public funding are available to all".[2]

The Commonwealth of Learning has been actively promoting the adoption of OER by the Caribbean Ministries of Education, leading several high level workshops during which national OER Policies were drafted.

The Caribbean NRENs are currently being supported through the ACP Connect Project with the aim to successfully launch and link them to each other, through C@ribNET[3], and to international research and education networks. To fully achieve this, it is fundamental to have dedicated high capacity broadband networks in place, at national and regional levels, allowing for all the Caribbean countries to have access to the critical infrastructure and Support Services, namely ODL and OER Repositories and Open Access, critical to diminish the digital gap among the different countries and accelerate the move towards a Knowledge Economy.

Main Findings

In the Caribbean region, the use/development of Open Educational Resources is still in a very embryonic stage, as found during the desk review.

CARICOM and the different countries will need to define Open Education Initiatives, where OER are objectively tackled. The Caribbean educational institutions still have a long way to go to catch-up with the current OER trends. As previously stated the institutional survey addressed ICT and OER Policies.

ICT Policy

- 60% of the institutions analyzed already have ICT Policies in place;
- The small-sized institutions (1-50 staff) tend not to have ICT Policies;
- The institutional ICT policies mainly address "Infrastructure and technical support", followed by "Staff professional development" and "ODL and e-Learning". "Student assessment" is the least considered area;

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[2] http://europa.eu/rapid/press-release_IP-13-859_en.htm
[3] www.ckln.org

- It is interesting to note that "Research" is a key area, with five of the institutions planning to integrate it in their ICT Policy, although it is currently the second least considered;

- Regarding the type of systems and applications the institutions have in place, the majority of them have "student registrations applications", "Open Access Journals" and "Library Subscriptions", and "Virtual Learning Environments";

- Furthermore, there is an uptake of planned "mobile applications", and "cloud services", along with more focus on Human Resources applications;

- In the institutions surveyed, the internet is mainly used by the administrative staff. The teachers are the next group with internet access, followed by the students. The researchers are the group with the least access to the internet. This may be due to several factors, namely the lack of research being undertaken in the institutions analyzed. This finding is also aligned with the IESALC, UNESCO[4] findings "Low legitimacy of scientific activity, where scientific knowledge is not fully valued nor supported".

OER Policy

- Each country has different needs and timeframes for OER policy introduction;

- Sharing of OER is limited at national level;

- Of the 23 institutions surveyed, only 1 has a OER Policy and only half are planning to define a OER Policy;

- Institutional OER policies are not considered in the plans of the largest TEIs in the surveyed institutions;

- The main reasons considered for the adoption of OERs in institutions were as part of Open Education Policy, Open Access and open source software, and as part of the educational strategy. The reason considered the least important was Public Good.

- The main barriers constraining the adoption of OERs ranged from investment, and the quality of the OERs to the teaching culture.

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[4] "Trends in Higher Education in Latin America and the Caribbean", p 30, UNESCO, 2008

- The main type of license being used is Copyright, followed by Creative Commons and Public Domain. It seems that there is a misconception regarding the different types of licensing available.

Main Recommendations

It is critical for Caribbean governments to create a policy context conducive to the full adoption of OERs in particular, and Open Education in general, by TEIs.

Furthermore, these recommendations must be considered from a systemic perspective and their analysis extended to the whole educational system.

OER may represent a huge shift in the Caribbean Knowledge and Research Economy.

By utilizing the existent C@ribNET infrastructure, the Education Ministries and Higher Education Institutions are able to promote Regional OER Repositories in general and thematic areas, decreasing the costs of high quality contents, which represent a large percentage of the Ministries of Education budgets.

Policy makers

Considering the current international trend to adopt OERs as a Public Good by international funding agencies, governments and educational institutions, it is critical for CARICOM and the Ministries of Education to clarify their approach to Public Good and advocate for it within the Educational System, thus creating the required buy-in by key stakeholders to make it a reality in the Caribbean Region. This clarification will allow for the creation of a broader perspective as to openness, open education, and the required motivation for change towards a knowledge economy.

Create licensing mechanisms that will allow for a broader range of licenses. This is critical for the development of OER. The current licensing systems in the Caribbean

countries do not support Creative Commons, and the region is in fact, the only one that does not have a country represented in CC Affiliated Network.[5]

Promote and galvanize the creation of OER repositories at national or Caribbean level, addressing thematic areas. These OER repositories may showcase knowledge unique to the Caribbean region, thus placing them internationally as OER references.

Strengthen the capacity of local TEIs to use OERs, supported, for instance, on Open Education and Open Distance Learning Policies.

When planning awareness raising strategies, a major focus should be placed on OER training, coupled with the development of networks and communities of practice to build on the sharing and learning started previously.

Higher Education Leaders

It is fundamental to either integrate OER as part of the institutional policies, or create specific OER policies.

OERs also need to become part of the Human Resources policies, particularly in terms of staff development and teamwork, and should be closely related to the development of Leadership skills.

Furthermore, it is critical to change the teaching culture, not only to accommodate the use and development of OERs, but also in order to better align the institution with the knowledge economy.

Report structure

This report was divided into five chapters as presented below:

Chapter 1 – Methodological framework - It presents the rationale behind the methodological choices and tools used during the study.

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[5] http://wiki.creativecommons.org/CC_Affiliate_Network

Chapter 2 – Overview Human Development and ICT in the Caribbean - the current status of the national ICT Policy implementation is analyzed, as well as the broadband penetration in the Caribbean countries, under the ACP Connect Project, with a view to leading into C@rinNET and NRENs sustainability. The Human Development of the some of the Caribbean countries is also addressed.

Chapter 3 - NRENs and OER - the NRENs in the Caribbean, will be critical for the uptake and adoption of ICT, Open Education and OER, in particular. The results of a preliminary NREN survey are presented.

Chapter 4 – Tertiary Education Institutions, ICT and OER – The fulfilled surveys Institutional level are analyzed in detail.

Chapter 5 – Conclusions and Recommendations - it presents the conclusions and recommendations at policy and institutional level, providing a framework to build upon the OER advocacy and implementation.

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ACRONYMS

CARICOM	Caribbean Community
CC	Creative Commons
CKLN	Caribbean Knowledge and Learning Network
ICT	Information and Communications Technology
IT	Information Technology
LMS	Learning Management System
MOOC	Massive Online Open Courses
ODL	Open Distance Learning
OECD	Organization for Economic Co-operation and Development
OER	Open Educational Resources
TEI	Tertiary Educational Institution

CHAPTER 1 – METHODOLOGICAL FRAMEWORK

In chapter 1, it is presented the rationale behind the methodological choices and tools used during the study.

Rationale for the study

The current study aimed to provide a quick glance to the ICT and OER use and development in the Caribbean Region, as a needs analysis for the "Capacity Building on Development and Use of OER Workshop", which took place July 2013, in Jamaica. The results from this study facilitated the tailoring of the workshop program and content to address the main study findings. It also aimed to present a snapshot of the ICT and OER panorama to support policy makers and institution leaders in the countries covered.

Methodology

Considering the embryonic status of OER adoption in the Caribbean region, time and geographical constraints, this study followed a dual qualitative and quantitative analysis, with three key moments that ended up in the "Capacity Building on Development and Use of OER Workshop", as previously referred, and in the present report.

1. Desk review of current literature and studies on the use, impact of OER in TEI, around the world and in particular in the Caribbean region.

2. Application of two surveys:

Method	Target group	Aim
National survey	NRENs Heads (5 NRENs)	Obtain a common and global overview of needs and expectations of NREN´s, in the short and medium term in several key areas, namely OER.
Institutional survey	Tertiary Educational Institutions, Statutory Agencies, Libraries (23 institutions from 4	Identify the current ODL and OER Policies implementations at institutional level, as well as the OER practicum panorama in the

	countries)	institutions.

The institutional survey was launched on May 20th . The respondents had until June 14th to return the filled-in surveys. Due to the time constraints faced by the respondent organizations, the deadline was postponed until the end of June.

There were 23 respondent institutions. The distribution of the survey differed between Jamaica and the rest of the countries. In Jamaica, the survey was sent to 80 institutions, through J-TEC, with a response rate of 23.75% (19 respondents). In the other countries, the survey was sent to 3 NRENs and the 9 member countries of the OECS REN, which distributed the survey later. In all 4 surveys were received, 2 from British Virgin Islands, 1 from Trinidad & Tobago and 1 from Saint Vincent and the Grenadines.

For the purposes of this study, the definition of Open Educational Resources provided by Hewlett Foundation, in 2007 is considered.

 "Teaching, learning, and research resources that reside in the public domain or have been released under an intellectual property license that permits their free use and re-purposing by others. Open educational resources include full courses, course materials, modules, textbooks, streaming videos, tests, software, and any other tools, materials, or techniques used to support access to knowledge."

(Atkins, Brown and Hammond, 2007)

Study limitations

This study has two major limitations that must be taken into consideration by policy makers in particular, and readers in general. 1) The sample is not representative of the Caribbean Higher Education Institutions universe, posing limitations to extend the results obtained to other countries, and even within the TEIs respondent countries. 2) The persons responsible for fulfilling the institutional surveys may not represent their institutions views on ICT and OER Policies.

CHAPTER 2 – OER IN THE WORLD AND THE CARIBBEAN

In this chapter, the current status of the OER in the world and in the Caribbean region is briefly analyzed, some institutional best practices are presented.

Brief history of OER

There are different definitions of Open Educational Resources (OER). As previously mentioned, for this study the definition by the William and Flora Hewlett Foundation OER is adopted.. The Organization for Economic Co-operation and Development (OECD) defines OER as: "digitised materials offered freely and openly for educators, students, and self-learners to use and reuse for teaching, learning, and research. OER includes learning content, software tools to develop, use, and distribute content, and implementation resources such as open licences". The Commonwealth of Learning has adopted the widest definition of Open Educational Resources (OER) as 'materials offered freely and openly to use and adapt for teaching, learning, development and research'.

The OER is supported on the "Learning Object" definition (Hodgins, 1994), providing the granularity required to remix, reuse the content in a variety of learning situations. In 1998, Wiley described the term "open content" creating the analogy to the open source movement[6].

In 2001, Creative Commons, led by Larry Lessig, released a set of licenses that provided a strong legal framework, and was easy to use by the content development community[7].

In 2002, MIT launched the Open CourseWare project that pushed the OER movement internationally. In UNESCO's 2002 "Forum on the Impact of Open Courseware for Higher Education in Developing Countries Final Declaration", the term Open Educational Resources is formally coined "their satisfaction and their wish to develop together a universal educational resource available for the whole of humanity, to be referred to henceforth as Open Educational Resources."[8]

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[6] http://en.wikipedia.org/wiki/Open_educational_resources
[7] http://creativecommons.org/
[8] http://unesdoc.unesco.org/images/0012/001285/128515e.pdf, last accessed on October 28, 2013

The Learning Resource Exchange for schools (LRE) from European Schoolnet (EUN), created in 2004, is a "service that enables schools to find educational content from many different countries and providers... to provide Ministries of Education with access to a network of learning content repositories and associated tools that allow them to more easily exchange high quality learning resources that 'travel well' and can be used by teachers in different countries."[9]

In 2005, the OpenCourseWare Consortium was founded with the objective to extend the reach and impact of open course materials and foster new open course materials. It currently counts more than 280 institutions from 40 countries, and over 30.000 modules, in 29 languages[10].

UNESCO created a global OER Community wiki in 2005, with the support of the Hewlett Foundation, "to share information and work collaboratively on issues surrounding the production and use of Open Educational Resources"[11].

In 2006, the African Virtual University (AVU) released 73 modules of its Teacher Education Programs as Open Education Resources to make the courses freely available for all.

It released the Cape Town Open Education Declaration, January 2008, in which were defined three strategies: "Educators and learners: First, we encourage educators and learners to actively participate in the emerging open education movement. Open educational resources: Second, we call on educators, authors, publishers and institutions to release their resources openly. Open education policy: Third, governments, school boards, colleges and universities should make open education a high priority."[12]

Up to 2008, the South African Institute for Distance Education (Saide) received seed funding from the William and Flora Hewlett Foundation to launch OER Africa.[13]

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[9] http://lreforschools.eun.org/web/guest/about
[10] http://www.ocwconsortium.org/
[11] http://www.unesco.org/new/en/communication-and-information/access-to-knowledge/open-educational-resources/
[12] http://www.capetowndeclaration.org/read-the-declaration last accessed on October 28, 2013
[13] http://www.oerafrica.org/sites/default/files/oer%20broc2013%20FINAL.pdf

In 2010, Commonwealth of Learning, in collaboration with UNESCO, launched an initiative ""Taking OER beyond the OER Community: Policy and Capacity" that aims to expand the understanding of OER by educational decision makers and to promote their wider use".[14]

The 2012 Paris OER Declaration "marks a historic moment in the growing movement for Open Educational Resources and calls on governments worldwide to openly license publicly funded educational materials for public"[15] . The Declaration was formally adopted at the 2012 World Open Educational Resources (OER) Congress.

The World Bank launched the "Open Access Policy" effective July 1, 2012. The Open Access Policy requires that all research outputs and knowledge products published by the Bank must be licensed under a Creative Commons Attribution license(CC BY).[16]

The European Commission launched the Initiative "Opening-up Education", September 2013, "it acknowledges that openness has the potential to widen access to education and to improve, amongst others, access, cost-efficiency and quality of teaching and learning". It also addresses the potential of OER and its policy objectives "Increased use of Open Educational Resources (OER), ensuring that educational materials produced with public funding are available to all".[17]

In California, USA all contracts and grants funded by the California Community Colleges Chancellor's Office are made available under a Creative Commons Attribution license (CC BY).

In 2013, the OER repositories World Map identified 90 OER Repositories around the world. The Caribbean region is not present on this map.

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[14] http://www.col.org/resources/crsMaterials/Pages/OCW-OER.aspx
[15] http://www.unesco.org/new/en/communication-and-information/access-to-knowledge/open-educational-resources/what-is-the-paris-oer-declaration/

[16]http://web.worldbank.org/WBSITE/EXTERNAL/NEWS/0,,contentMDK:23164491~pagePK:64257043~piPK:437376~theSitePK:4607,00.html
[17] http://europa.eu/rapid/press-release_IP-13-859_en.htm

PICTURE 1 - OER REPOSITORIES WORLD MAP, MAY 2013[18]

OER in the Caribbean

Although some higher education institutions are already integrating OER in educational context around the Caribbean region, there is still a lack of awareness towards OER and a systematized approach to their development.

The Commonwealth of Learning has been promoting the integration of OER in educational context, in the Caribbean, through the adoption of OER into broader ICT policies in education as a way to promote organizational change. Several high level workshops have taken place, and a national OER policy template has been developed and presented in the different countries.

Although some institutions are already playing a more active role in developing OER, most institutions are still just reusing and remixing existing content. The institutions have also been investing in training teachers in OER use and development.

Some these institutions and initiatives that have taken place or currently happening, are analysed based on the fulfilled surveys.

In 2007, the University of West Indies was one of the first signatories of the "Cape Town Open Education Declaration: Unlocking the promise of open educational resources".

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[18] http://oerqualityproject.wordpress.com/author/jatenas/

In 2010, the UWI, Open Campus, in Barbados, launched a joint project with Athabasca University to understand if OER was available in sufficient quantity and quality to support the development of university courses. This project concluded that it was possible to create courses supported by OER contents albeit the variable quality and the medium variety.

In Jamaica, the Bethlehem Moravian College has already developed some OER course materials, in addition to using and remixing OER, in different subject areas including Mathematics, Sciences, Social Sciences, Education, and Business and Management. The Mico University College is also in a similar situation having already developed main course materials as OER, and have used full course materials, tests and software.

The Portmore Community College has been using OER as supplementary course material, additional readings and assessments in Mathematics, Computing and Engineering and Sciences.

The G. C. Foster College of Physical Education and Sport reused and remixed OER Education thematic content as additional readings, from Curriki.org and OER Commons.org. The University College of the Caribbean is also using OER in Business Management subject area.

Vector Technology Institute has been using Learning Platform and other collaborative applications under a GNU General Public Licenses, with OER as main and supplementary course content within their educational context.

St Joseph's Teachers' College staff is currently being trained in the use of OER.

In the British Virgin Islands, The Learning Resource Centre from H. Lavity Stoutt Community College is in the process of developing a collection of main course material, as well as textbooks and tests, in the subject area of sciences and environmental sciences.

The University of Trinidad and Tobago, have been using OER course materials and textbooks in Sciences and Environmental Sciences, Agriculture, Food Technology, Mathematics and in basic Sciences, such as Chemistry.

CHAPTER 3 - NRENS AND OER

NRENs play a fundamental role for the development of a knowledge economy and society in the countries where they exist. The NRENs in the Caribbean, will be critical for the uptake and adoption of ICT, Open Education and OER in particular.

The NRENs – National Research and Educational Networks, around the world, play a fundamental role providing Support Services to Higher Education, Government, Research Institutes, Primary and Secondary Education, Hospitals. Some of the Support Services provided are E-Learning / ODL; housing, storage, hosting and content-delivery services, namely Repositories of OER/Open Access; and supporting group collaboration with the establishment of communities of practice, e-Research.

The Caribbean NRENs are currently being supported through the ACP Connect Project with the aim to successfully launch them linking through C@ribNET[19] to each other, and to the international research and education networks. To fully achieve this, it is fundamental to have dedicated high capacity broadband networks in place, at national and Caribbean level, allowing for all the Caribbean countries to have access to the basic infrastructure and Support Services, critical to diminish the digital gap among the different countries.

The Caribbean suffers from a double ultra-peripheral situation, islands away from mainland and separated from each other, posing enormous challenges to their economic and human development.

The Caribbean territories considered under this project were:

- Jamaica
- Trinidad and Tobago
- Barbados
- OECS

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[19] www.ckln.org

- Belize

- Suriname

- The Bahamas

- Guyana

- Haiti

In April, the NREN survey was sent to the NREN Heads addressed by the ACP Connect Project. The NRENs Heads are nominated by the Ministries of Education of their countries. A qualitative analysis of the surveys that were fulfilled by 5 Heads of NRENs is presented next.

It is to be noted that the NREN´s heads survey was developed along with the other consultant team for the ACP Connect Project, with the objective to obtain a common and global overview of needs and expectations, in the short and medium term in the areas covered by both consultancies. For the purposes of this study, only the response regarding OER specifically was analysed.

"What are the prioritized activities and products/tools you would like to see implemented, in/by/for your NREN, in the short (2-6 months) and medium term (1-2 years) (kindly specify) in each of the following areas?...Open Educational Resources"

From the analysis of the respondents, the following conclusions were reached regarding the prioritization of OER in the short and medium term:

- Each country presents different needs and timeframes, from short (to 6 month) to medium (1 to 2 years) timeframes, although most of the NRENs consider it a short term priority.

- There is a need to involve different institutions from all education levels using a sharable repository "Establishment of a Datacenter with sharable data for the benefit of primary, secondary and tertiary educational institutions".

- The capacity of local Tertiary Educational Institutions (TEIs) to use Open Educational resources (OER) needs to be strengthened.

- Research and sharing occur at institutional level with a limited availability of shared open educational resources at national level.

- There is a need for specific OER contents, with the creation of varying thematic databases and repositories that could cover such diverse topics as WI slave records.

CHAPTER 4 – TERTIARY EDUCATION INSTITUTIONS, ICT AND OER

Chapter 4 analysis in detail the results obtained with the survey fulfilled at Institutional level, in the different countries.

The institutional survey was developed to identify the current ICT and OER Policies implementations at institutional level, as well as the OER practicum panorama in the institutions.

Profile of the respondent institutions

There were 23 respondent institutions from four different countries: Jamaica, British Virgin Islands, St Vincent and the Grenadines and Trinidad and Tobago.
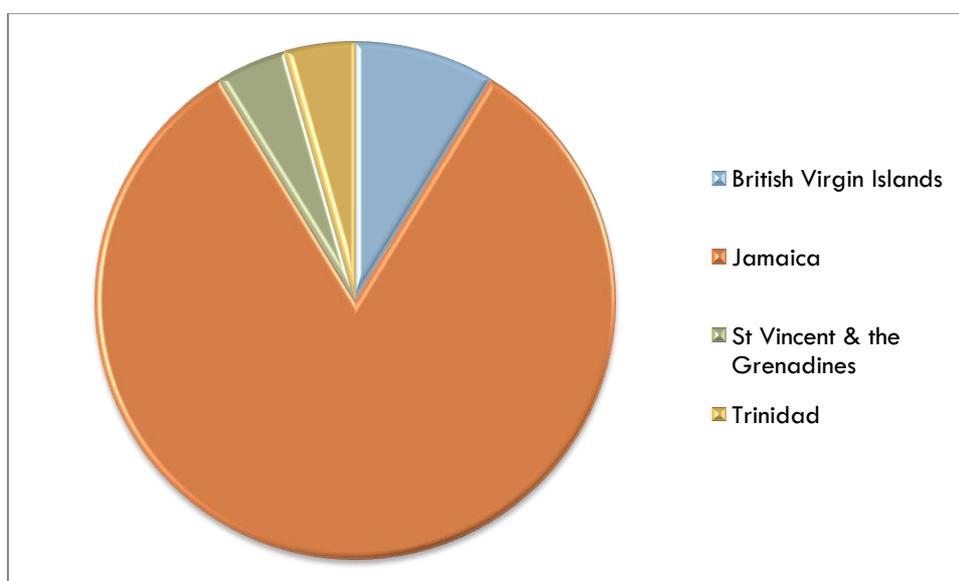
GRAPH 1 – INSTITUTIONS COUNTRIES

It is worth noting that some of the respondent institutions come from the small Island states of St Vincent and the Grenadines and British Virgin Islands demonstrating their involvement in moving forward with ICT in Education and Open Education.

These institutions were mainly Community Colleges (9 respondents), followed by Universities, Teachers Colleges. Libraries (2 responses), a Vocational Educational Training Institution and a Statutory Agency have also responded to the survey.
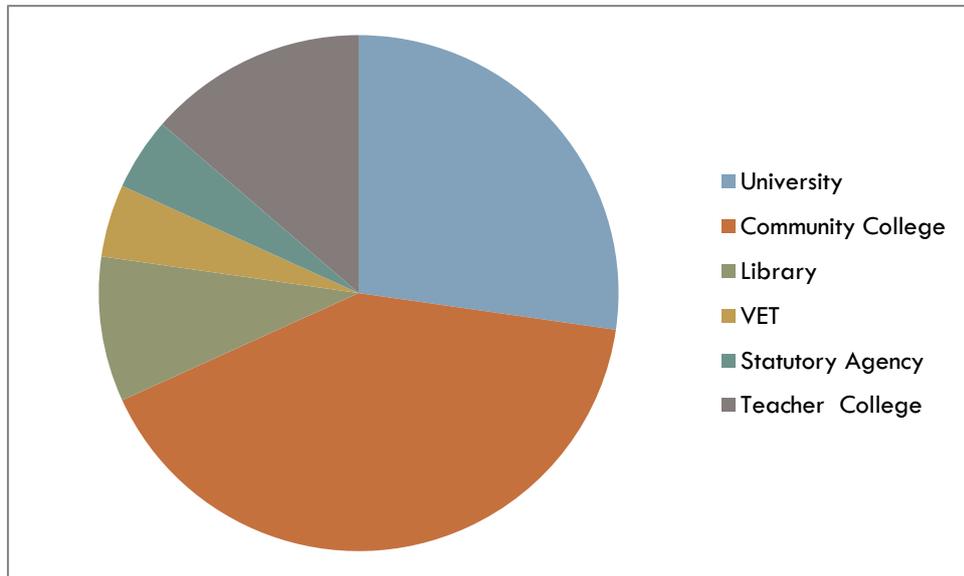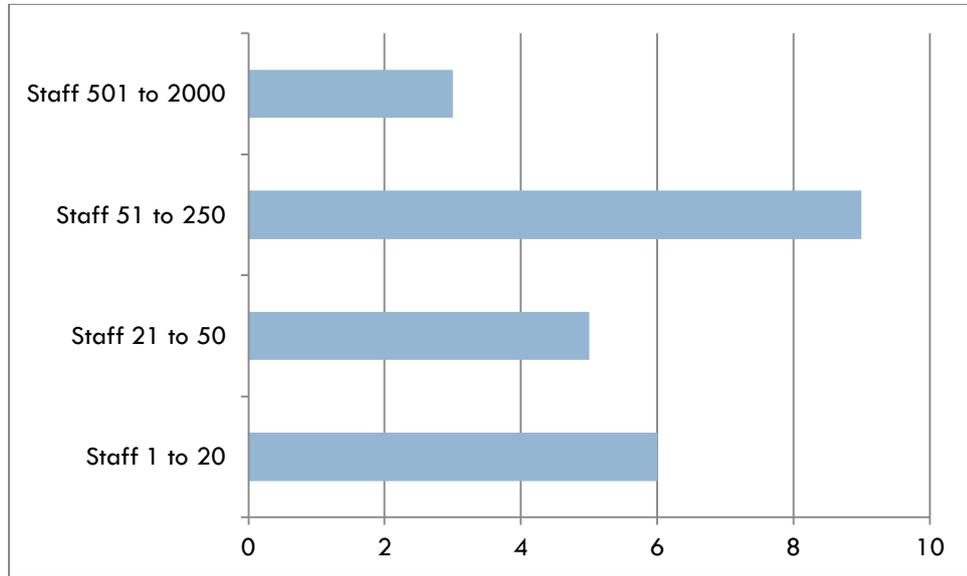

GRAPH 2 – TYPE OF INSTITUTION

From these 23 institutions, 65.2% were publicly owned while 34.8% were privately held institutions.
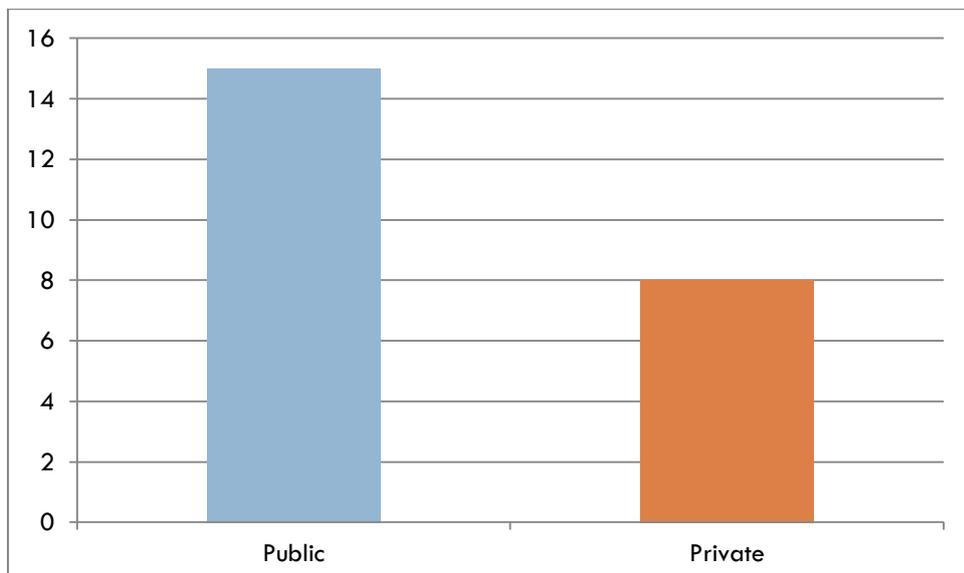
GRAPH 3 - LEGAL TYPE

The majority of the respondent institutions have between "21 to 250" staff, followed by small sized institutions with "1-202 and medium sized institutions with 221-502 staff. Three big universities, 2501-20002 staff also participated in the survey.

GRAPH 4 - INSTITUTION SIZE

The "1-20 staff" institutions are mainly private, while the remaining three groups are mainly public entities. The level of involvement and response from small private entities to this survey is worth noting .
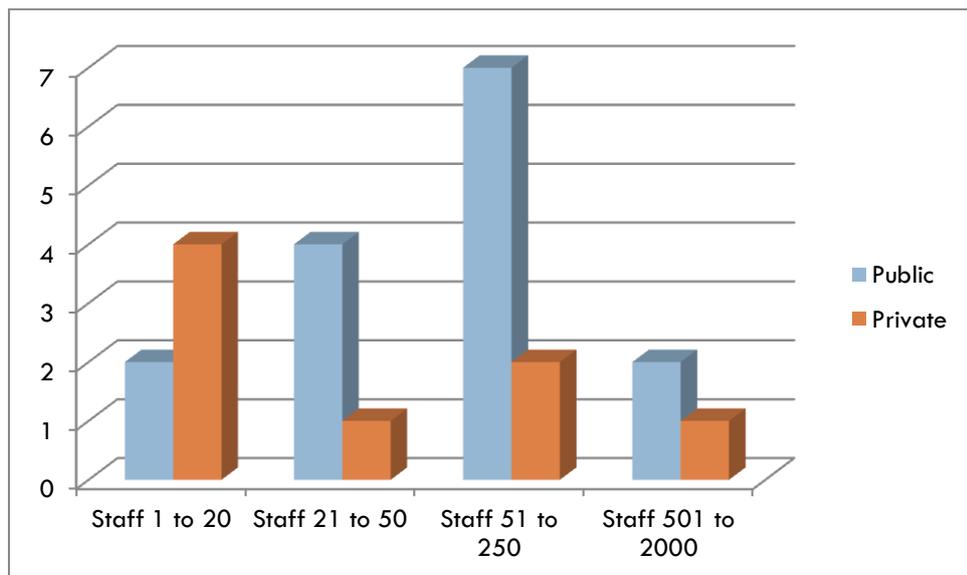
GRAPH 5 - RESPONDENT INSTITUTIONS PER SIZE AND OWNERSHIP

Most of the respondents occupied very high level managerial positions, such as Academic Dean, Principal, Vice Presidents, Executive Director, Head of e-College, Heads of Department, Directors. The surveys were also filled in by a Chief University Librarian, a Network Member and teachers.
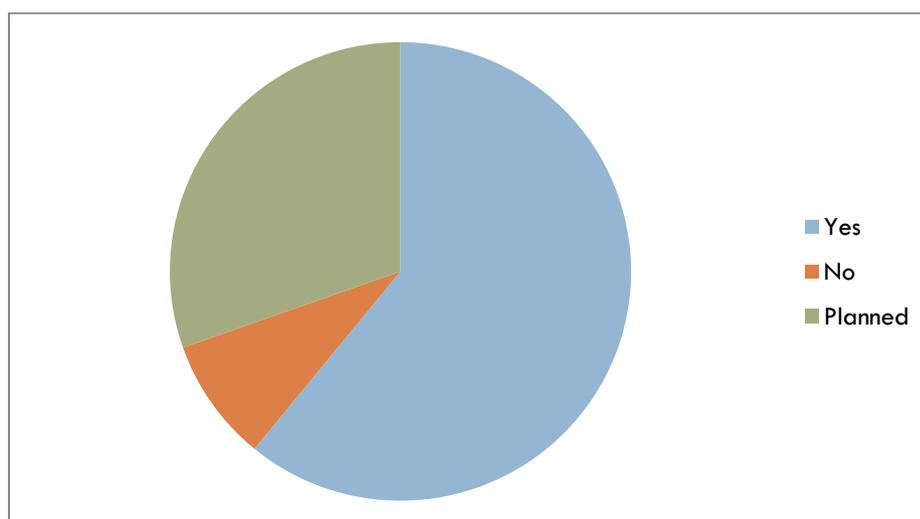
ICT Policy

As previously highlighted, the Commonwealth of Learning has been integrating OER policies into broader ICT in education policies which provide a greater opportunity to promote the idea of educational change. Simply adding ICTs and OER onto existing approaches will just add to teacher workload and costs and will ultimately fail. Furthermore, the ultimate goal is to develop learners for knowledge-based economies.

Based on this high level policy approach already being implemented in the Caribbean, the survey also questioned the institutions on whether there were ICT policies in place and, if so, what did they cover. The question was also asked about the areas which were considered for inclusion in the ICT Policy.
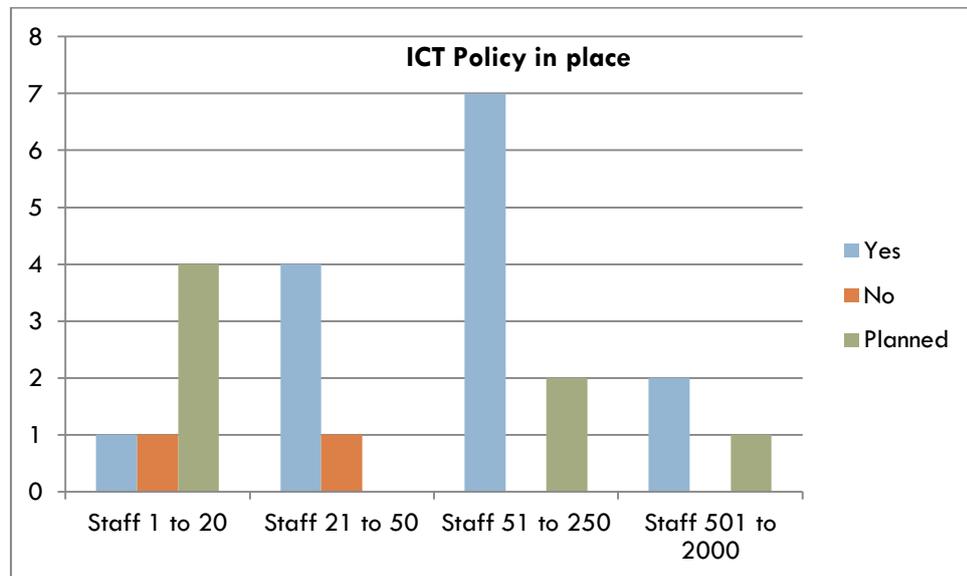
Moreover, the level of ICT readiness of the institutions was also analyzed.

Q: Is there an ICT Policy in place in your Institution?

GRAPH 6 - % INSTITUTIONS HAVE AN ICT POLICY IN PLACE

60.9% of the institutions have an ICT Policy in place, while 30.4% are planning to define it, and only 8.7% do not have any policy and are not planning to have one.
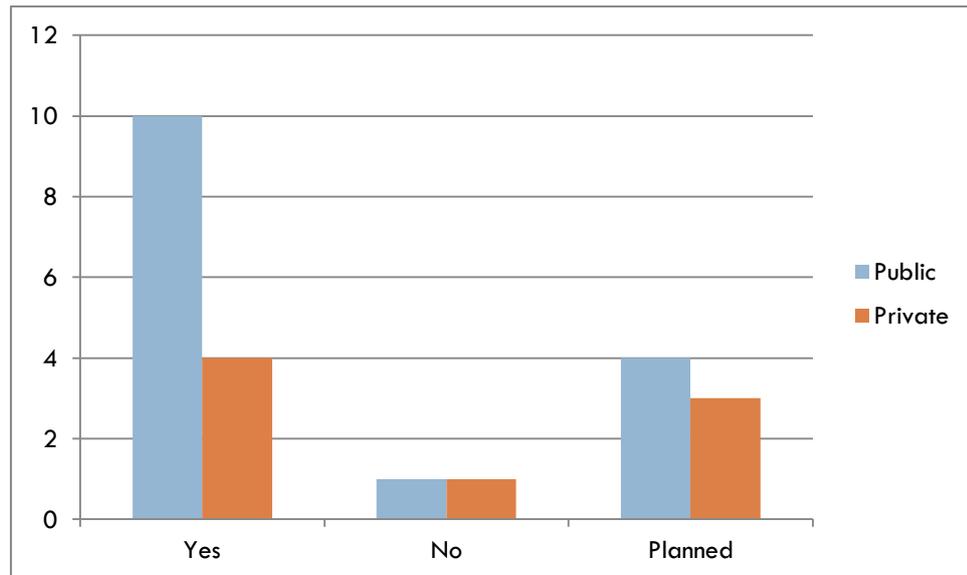

GRAPH 7 - ICT POLICY IN PLACE PER INSTITUTION SIZE

From the analysis of the respondent institutions, only one of the "1 to 20 staff" has ICT Policies in place, while four are planning to have it, and one does not intend to have.

Four of the "21 to 50 staff" have already ICT Policies, with only one responding "no".

The "51 to 250 staff" have already ICT Policies or are planning to have, as well as the "501 to 2000 staff".

GRAPH 8 - ICT POLICY IN PLACE PER OWNERSHIP

The public and private sectors are both involved in implementing or planning their institutional ICT Policies.

Q: Which areas does your ICT Policy address?

The respondents were questioned as to which areas their ICT Policy addresses, namely "Infrastructure and technical support", "Student assessment", "Developing digital literacy of students", "Professional development of the academic staff", "Open Distance Learning, e-Learning", "Research" and other areas not covered in the question.
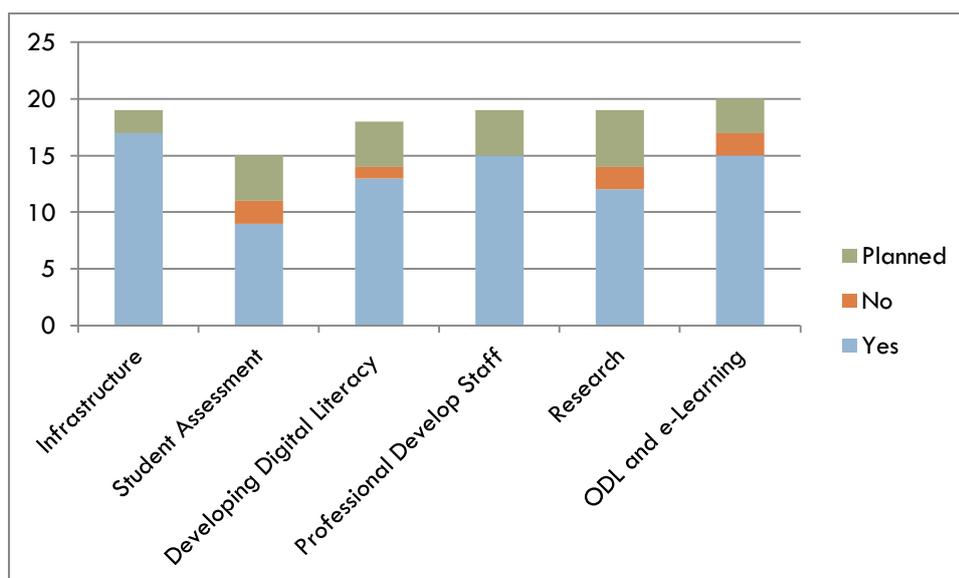
GRAPH 9 - AREAS ADDRESSED IN ICT POLICY

The institutional ICT policies mainly address "Infrastructure and technical support", followed by "Staff professional development" and "ODL and e-Learning". "Student assessment" is the least considered area.

It is interesting to note that "Research" is a key area, with five of the institutions planning to integrate it in their ICT Policy, although currently it is the second least considered area.

In the "Others", the respondents also have in place, user policies, internet and mail use.

Q: Which Systems and Applications are in place?

Regarding the type of systems and applications the institutions have in place, the majority of them have "student registrations applications" (16), "Open Access Journals" and "Library Subscriptions" (15), and "Virtual Learning Environments" (14).

Furthermore, there is an uptake of planned "mobile applications", dependant on the broadband mobile penetration in the country, as previously observed, and "cloud services", along with more focus on Human Resources applications.
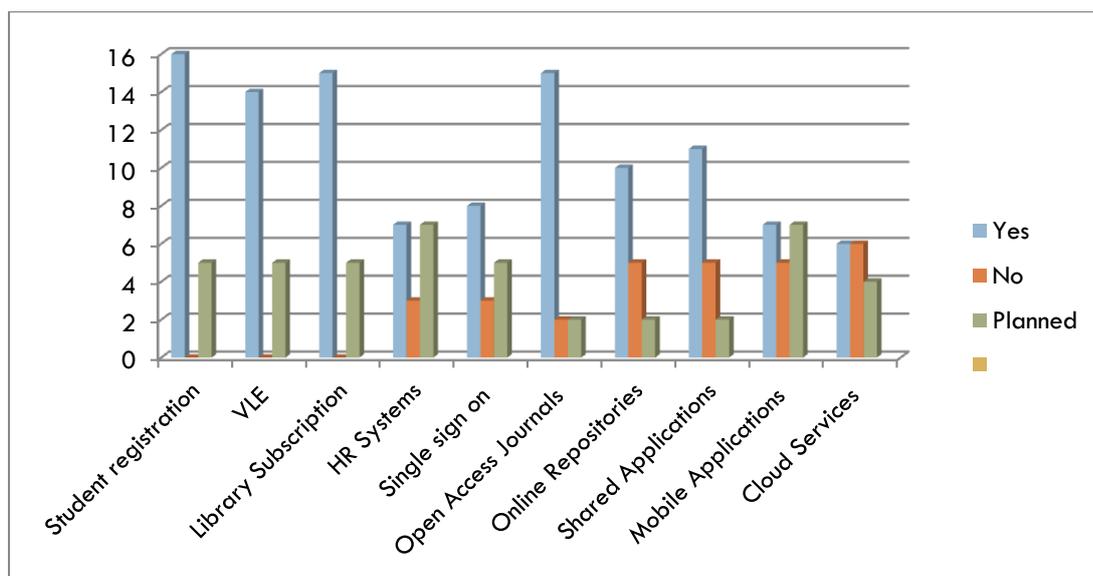
GRAPH 10 – SYSTEMS AND APPLICATIONS

## Q: What is the Internet connection and bandwidth in use?

The institutions have very different types of bandwidth and connections, from 2Mbits to 100Mbits, with dedicated lines to ADSL, fiber, cable modems.

Q: Indicate the percentage of Internet access that each of these groups has.

The internet in the institution is mainly used by the administrative staff, with 74% having between 100% to 75% access to it. The teachers are the next group with the most internet access (65.2%), followed by the students (56.5%). The researchers are the group with the least access to the internet. This may be due to several factors, namely the lack or diminutive research in the institutions analyzed.

This is also aligned with the IESALC, UNESCO[20] findings "Low legitimacy of scientific activity, where scientific knowledge is not fully valued nor supported."

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[20] "Trends in Higher Education in Latin America and the Caribbean", p 30, UNESCO, 2008
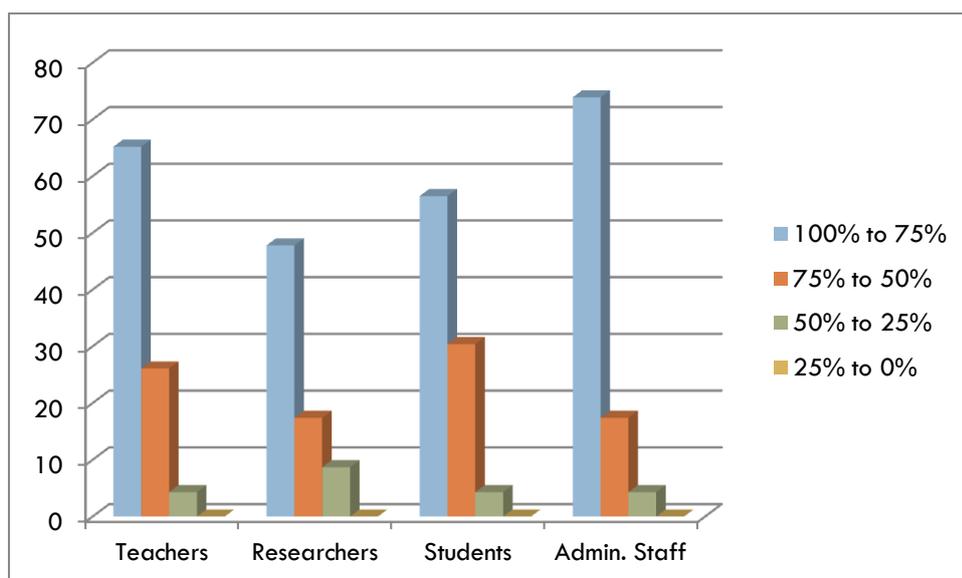
GRAPH 11 – INSTITUTION INTERNET ACCESS PER USERS

Q: Indicate the percentage of access to the Institution's computers/laptops that each of these groups has

The PC/Laptops coverage of the different groups is significantly led by the administrative staff, while the other groups present a similar access on the 100%-75% range. The teachers are the next group, in the 75% to 50% range, with higher access to PC/Laptops in the institutions analyzed. Once again, the researchers have limited access to PC/laptops critical for researching and participating in research networks.
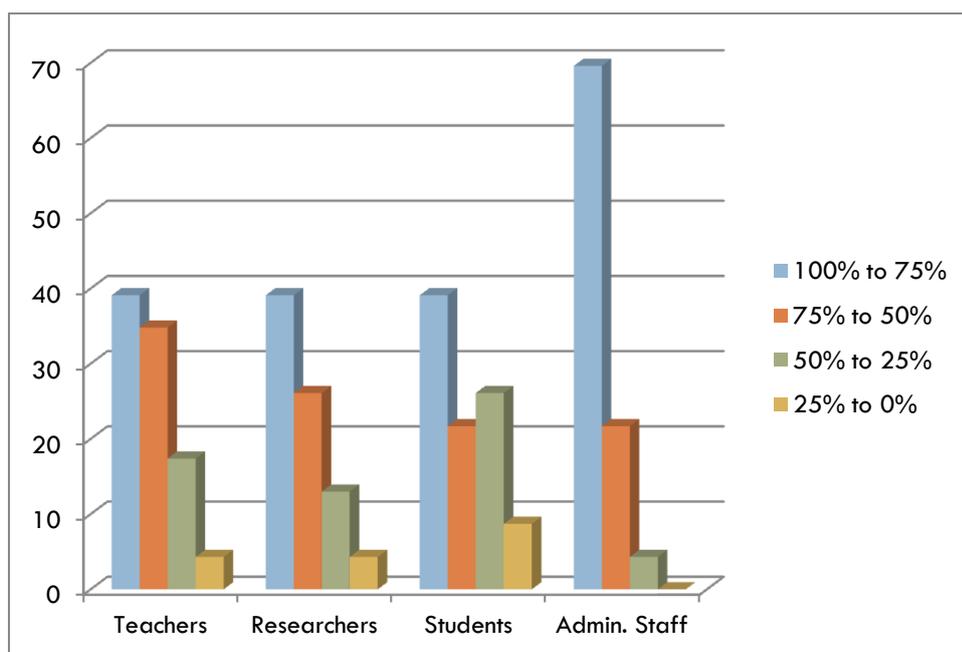
GRAPH 12 – INSTITUTION PC /LAPTOPS PER USER

Open Educational Resources (OER) Policy

The Open Educational Resources are becoming strategically relevant for governments and educational/training institutions around the world. The Caribbean educational institutions still have a long way to go to catch-up with the current OER trends .

Q: Is there an OER Policy in place in your Institution?

From the respondent institutions only one of them has an OER Policy in place. Eleven institutions are planning to implement OER policies while the other eleven are not considering it.
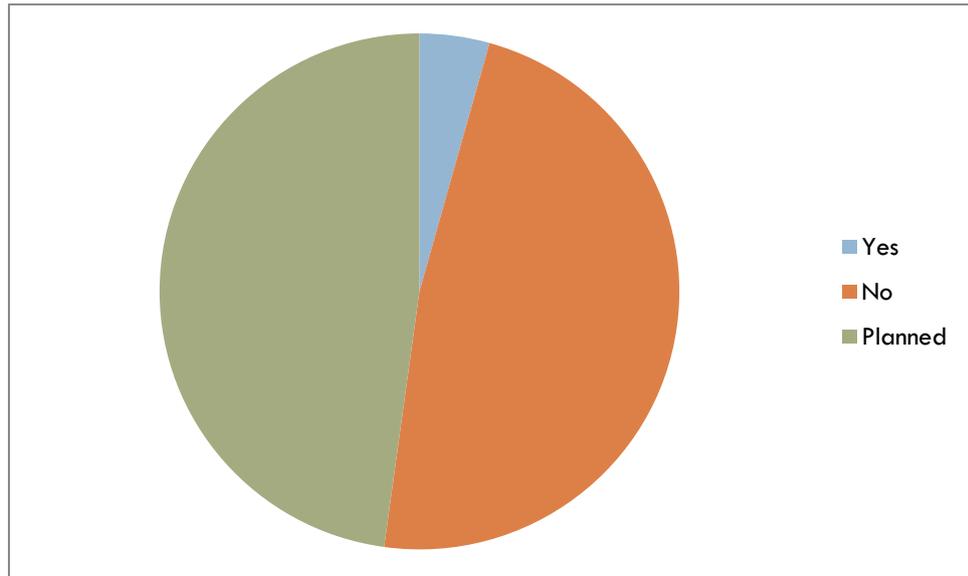
GRAPH 13 - OER POLICY IN THE INSTITUTION

When analyzing the respondents size and the uptake of OER Policy in the institutions, the "501to 2000 staff" organizations, being two public institutions and one private, as previously analyzed, are not implementing or planning to implement OER Policies in their institutions, from the responses provided.

In the "1 to 50 staff" institutions, one has already an OER Policy in place, while two are planning to implement and two are not.

Of the "51 to 250 staff" institutions, six are planning to put in place an OER Policy, while 3 are not.
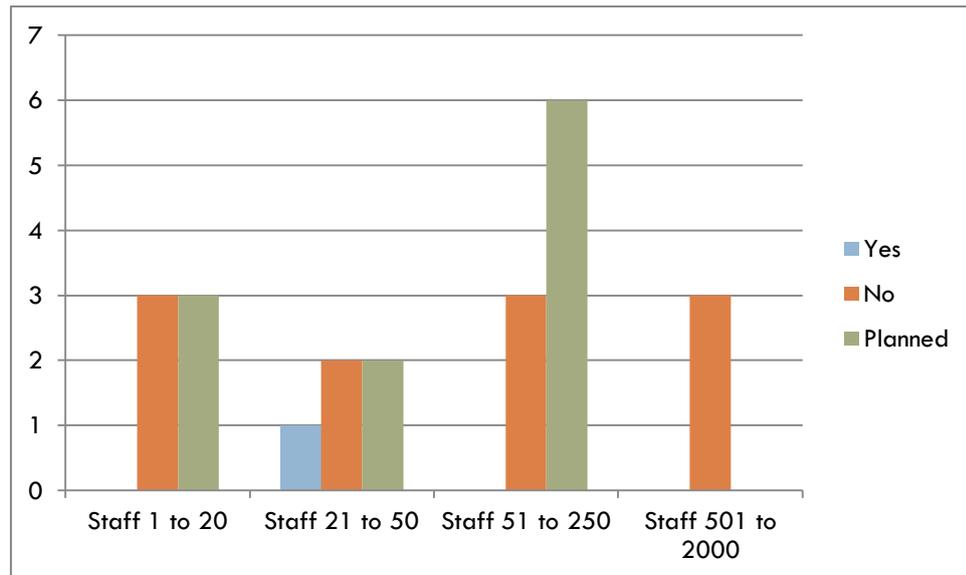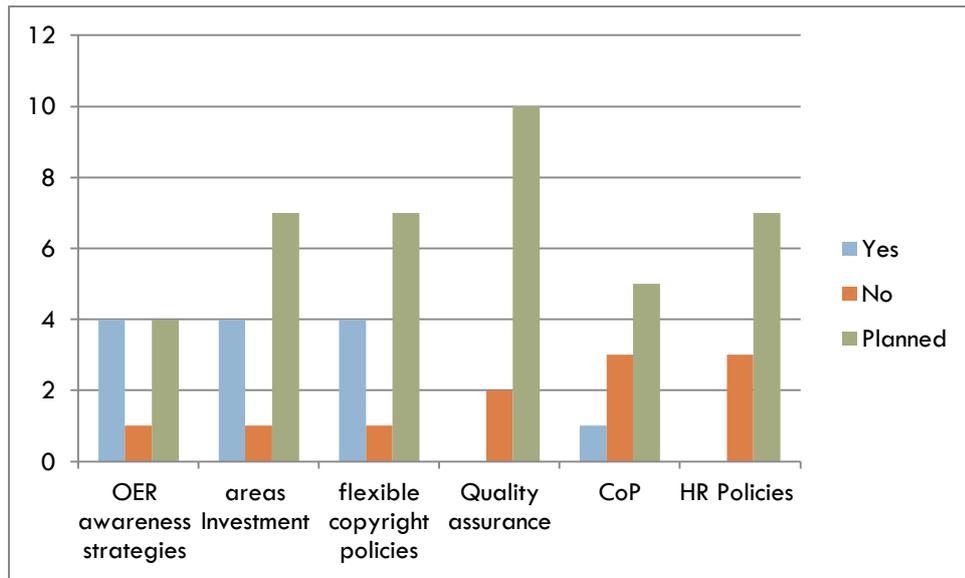
GRAPH 14 - OER POLICY AND INSTITUTION SIZE

Q: In case there is an OER policy or one is being planned, what areas does it cover?

As previously analyzed there are eleven respondent institutions that are planning to implement an OER policy, with one having already implemented it. The main areas already covered by four institutions are OER awareness strategies, strategic investments in the development, acquisition and adaptation of high quality learning material, integrating OER and adopt flexible copyright policies.

In terms of key areas to be implemented the "OER as an integral part of the Quality Assurance process of educational and research materials" tops the rank, with ten of the respondents considering it, followed by "strategic investment", "flexible copyright policies" and integrate the use and development of OER "in Human Resources Policies".

GRAPH 15 - AREAS COVERED BY OER POLICY

**Q: Which were or may be the main reasons for the adoption of OER by your Institution?**

The main reasons considered by the respondent institutions very important for the adoption of OER in their institutions were as part of "Open Education Policy", in place enabling use of Open Access and open source software and the "educational strategy". The reason considered the least important was "Public Good".
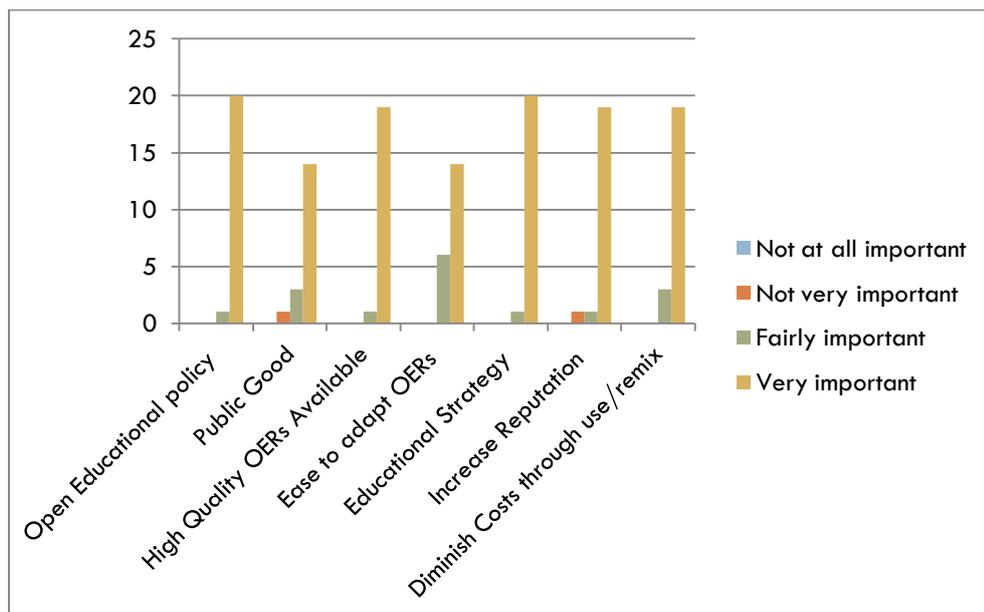
GRAPH 16 - MAIN REASONS FOR THE ADOPTION OF OER

Considering the current international trend to adopt OER as Public Good by national and regional governments, as well as by public and private educational institutions, it was further analyzed by institutions size and ownership type.

The three bigger educational institutions (staff 501-2000) present a mixed approach to Public Good, from very important to not very important, while all the smaller ones (staff 1-20) consider Public Good as very important.
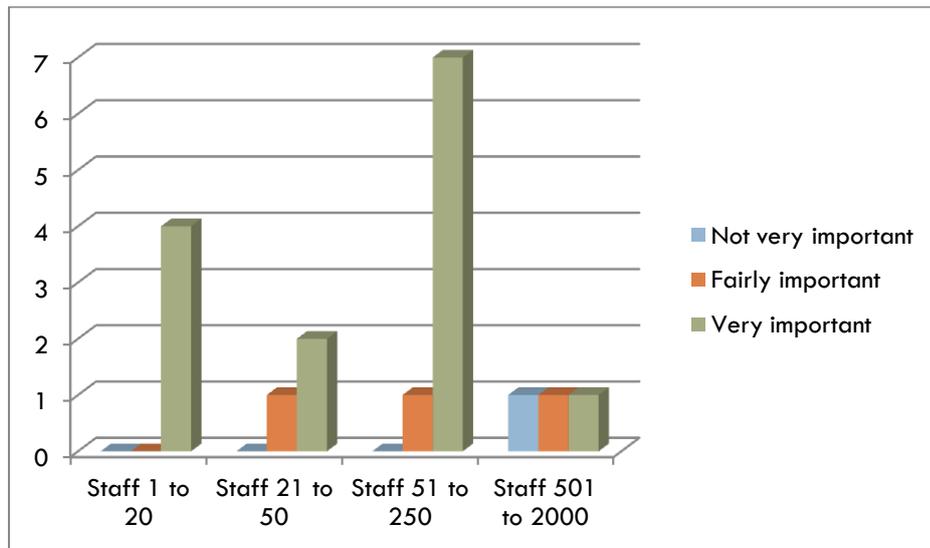
GRAPH 17 - PUBLIC GOOD PER INSTITUTION SIZE
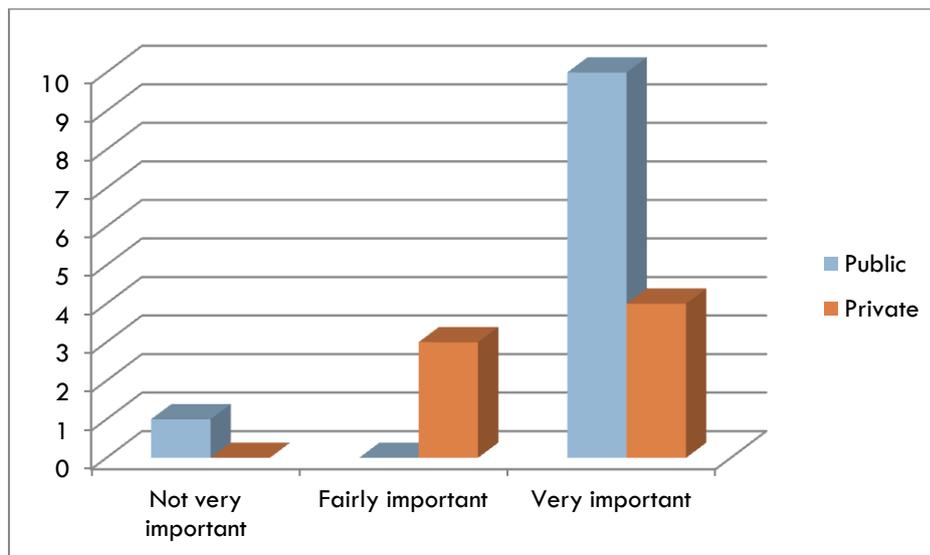
GRAPH 18 - PUBLIC GOOD AND OWNERSHIP TYPE

These results require further analysis and reflection, at Caribbean level, involving more countries and institutions, to determine whether this represents a common trend among the major educational institutions. And if it does, the reasons for public good not to be considered very important for all major (at least public) educational players in the region.

In case the Public Good approach is considered critical for the Caribbean region and the different Caribbean countries, this may have an impact on policy making and the required advocacy by the Ministries of Education.

Q: Rate the importance of the main barriers for the adoption of OER by your Institution.

The main barriers for the adoption of OER in the respondent institutions range from "required investment" to the "quality of Open Educational Resources" and the "teaching culture". These are the three main factors that hinder OER adoption. According to the survey, the least important barriers to OER adoption (not very important) are the "lack of skills of staff" and "trusted resources".
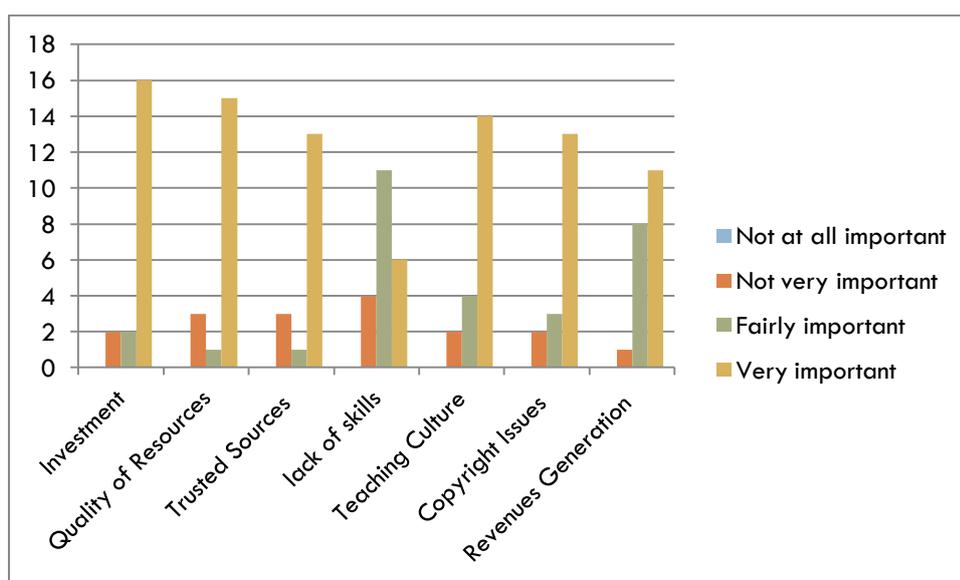

GRAPH 19 - MAIN BARRIERS FOR THE ADOPTION OF OER

Q: Which OER awareness strategies do you consider more effective for your organization?

The strategies considered the most effective to raise awareness towards OER are according twenty respondents, focused on "staff development", "capacity building" and "online training", with the "OER support centers" being considered very important by only thirteen of the respondents.

The "establishment of networks and Communities of Practice" is considered as very important.

When planning awareness strategies to raise awareness, a major focus should be put into "OER training", coupled with the "development of networks and communities of practice" to build on the sharing and development started at those more formal learning moments.
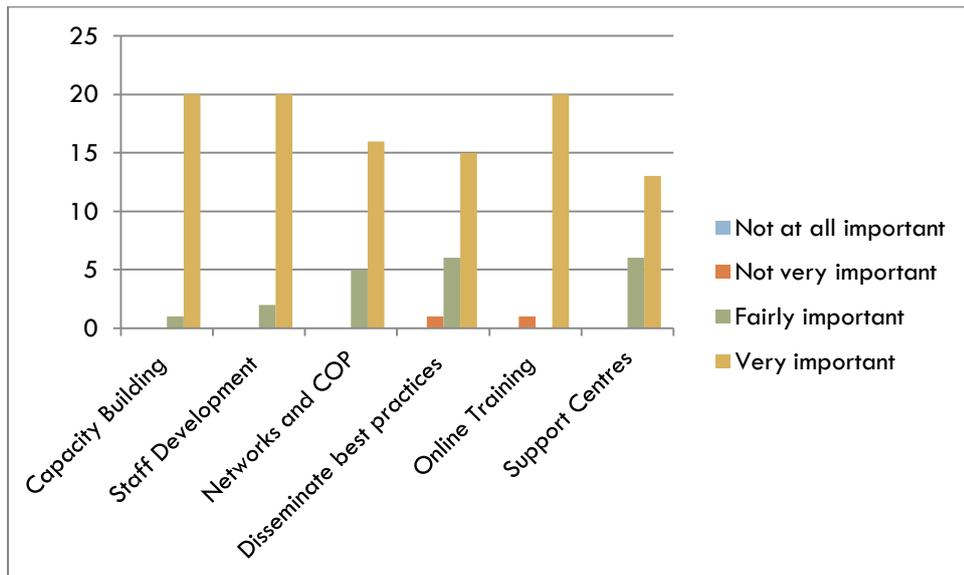
**GRAPH 20 - OER AWARENESS STRATEGIES CONSIDERED MORE EFFECTIVE**

Q: Rate what type of investments you consider more relevant for your Institution to integrate OER in the development of high quality content

The definition of content standards, with the "integration of OER licensing" is the most important investment according to the respondents, followed by "reusing, adapting and remixing existing OER" and the "creation of Communities of Practice".

Some of the respondents considered as not very important the "development of OER content", "changing quality assurance processes" and , "create Communities of Practice" as not very important.

When considering the relevance of investments to integrate OER, there is a clear focus in using existing OER as they are, or adapting and remixing them according to the identified needs.

Moreover, the "broader spectrum of licensing" is considered only very important by 12 respondents.
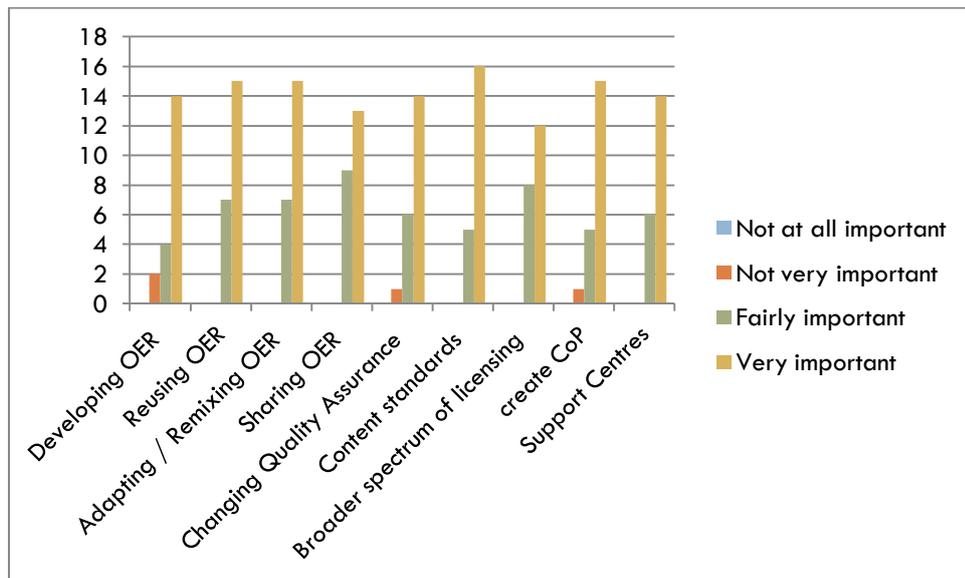
GRAPH 21 - INVESTMENTS MORE RELEVANT TO INTEGRATE OER IN THE DEVELOPMENT OF HIGH QUALITY CONTENT

What changes do you consider more effective for your organization to integrate OER in HR policies?

The Human Resources policies are critical, among others, to support and drive the adoption of Open Educational Resources within the organization.

The most important changes being considered "staff alignment and teamwork". These competencies are closely related to the institutions 'cultures and the type of leadership in place[21].

Moreover, the "job descriptions" and "Rewards or Incentives" appear next in terms of importance, in the same proportion.

One of the respondents also pointed out the "need to regularize training in this area and adjustments to the definition of work hours, hence assigning time for the development of such resources."
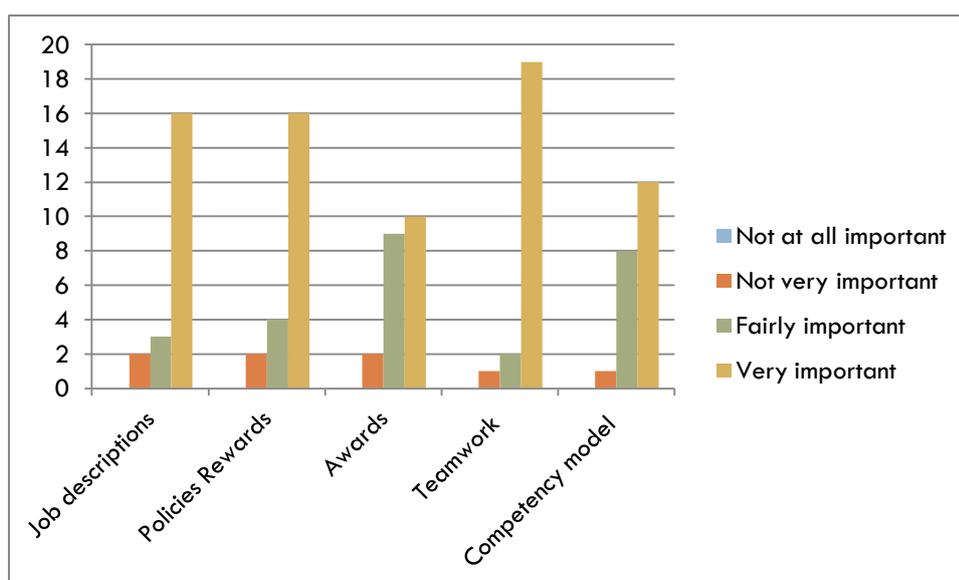
GRAPH 22 - INTEGRATE OER IN HR POLICIES

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[21] Boyatzis, Richard, "Competencies as a behavioural approach to emotional intelligence", Journal of Management Development, Vol. 28 No. 9, 2009, pp. 749-770

Developing, reusing, remixing and sharing OER – Practicum

This fourth part of the survey aimed at understanding what was, and is the level of development, reuse, remix and sharing of OER within the Caribbean educational institutions.

The next graph aggregates two questions that, for analysis purposes, were worked together:

Is your Institution already reusing/remixing OER? Is your Institution already developing/sharing OER?

The institutions are mainly reusing and remixing OER (39.1%), although only three (13%) of them are already developing and sharing their own OER content.

From these institutions, 39.1% is planning to develop/share OER and 26.1% to reuse and remix.

It is to be noted that ten (43.5%) of the respondents do not have, intend or plan to develop and share OER, while seven (30.4) do not have, intend or plan to reuse/remix OER.
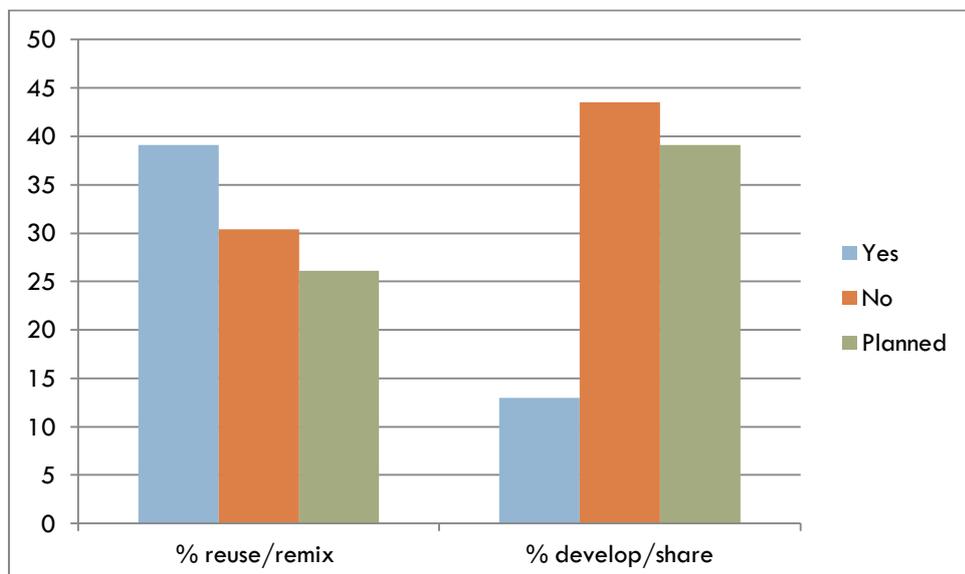
GRAPH 23 - PERCENTAGE INSTITUTIONS ALREADY REUSING/REMIXING AND DEVELOPING/SHARING OER
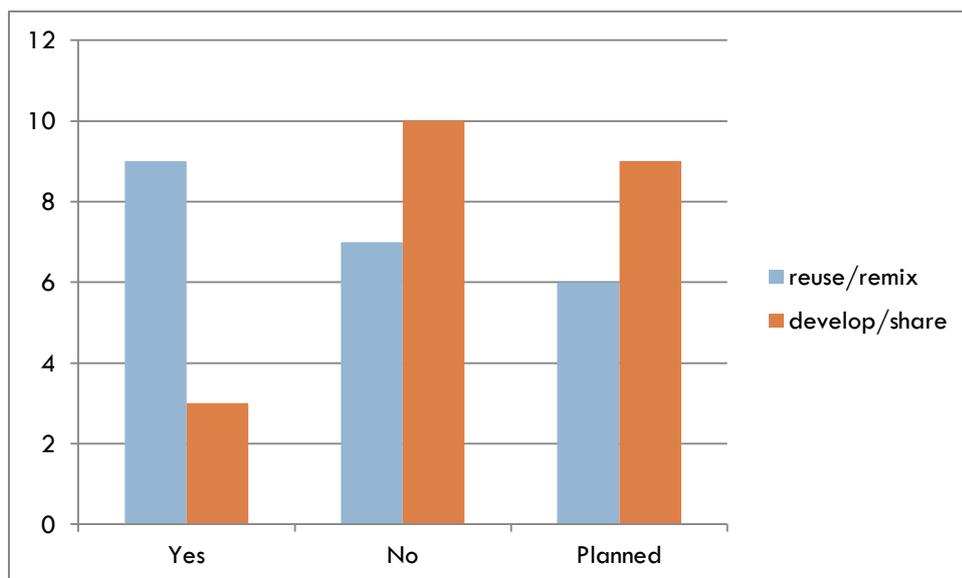
GRAPH 24 - INSTITUTIONS ALREADY REUSING/REMIXING AND DEVELOPING/SHARING OER

In which subject areas is your Institution planning or have already developed or used OER ?

The main subjects areas where OER are being used are: "Sciences and Environmental Sciences (including Geography)" (34.8%), followed by "Mathematics, Computing and Engineering" with 26,1% of the respondents claiming to have used/developed them. "Social Sciences", "Education" and "Business and Management" OER are used/developed by 21.7% of the respondents.

The subjects least used or developed are "Media" and "Arts".

It is planned develop /use OER relating to "Mathematics, Computing and Engineering" by 26.1% of the respondent institutions, followed by "Social Sciences" and "Education", with 21.7% and "Business and Management", 17.4%.

Agriculture, food technology, and basic sciences have been other subjects where OER have been used/developed.
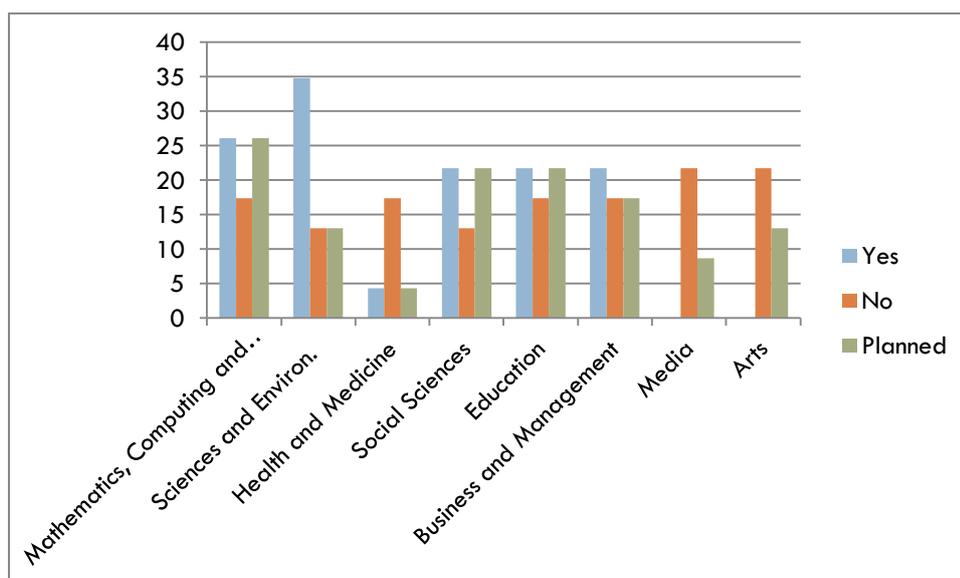
GRAPH 25 – PERCENTAGE SUBJECT AREAS INSTITUTIONS PLANNED, HAVE ALREADY DEVELOPED OR USED OER

What type of licensing have you used or are planning to use in your Institution?

After analyzing the overall of the surveys and their responses regarding OER, it seems that there is a misconception regarding the different types of licensing available. The difference between Public Domain and making content available publicly, while maintaining a copyright license is not clear. This analysis was reinforced during the Capacity Building OER development and use Workshop, which took place in Jamaica, in July 2013.

35% of the respondents use a "copyright license", followed by 21.7% that use "Creative Commons" licenses or "Public Domain".

Moreover, 17.4% are planning to make available their content via a "Public Domain" licensing, while only 8.7% are contemplating to use a "Creative Commons" licensing.
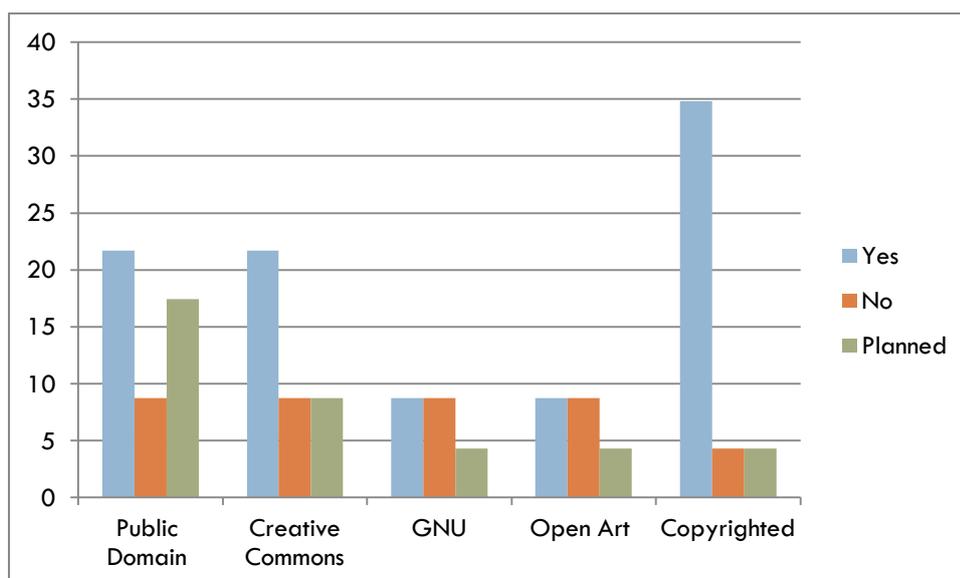
GRAPH 26 – PERCENTAGE TYPE OF LICENSING USED OR ARE PLANNED TO USE

What type of OER have you developed, used or are planning to develop/use in your Institution?

"Streaming videos" and "software" are the type of OER most used with 30.4% of the respondents selecting these options, with "textbooks" following with 26.1%.

26.5% and 17.4% of the respondents have developed "Course materials" and "tests" as OER.

Furthermore, 39.1% are planning to use/develop modules, 34.8% full courses and streaming video, 30.4% tests, other tools, materials.

Surveys as OER are also used by some of the respondent institutions.

As part of Open Education, there are also references to Open Source Learning Management Systems, software programs and applications.
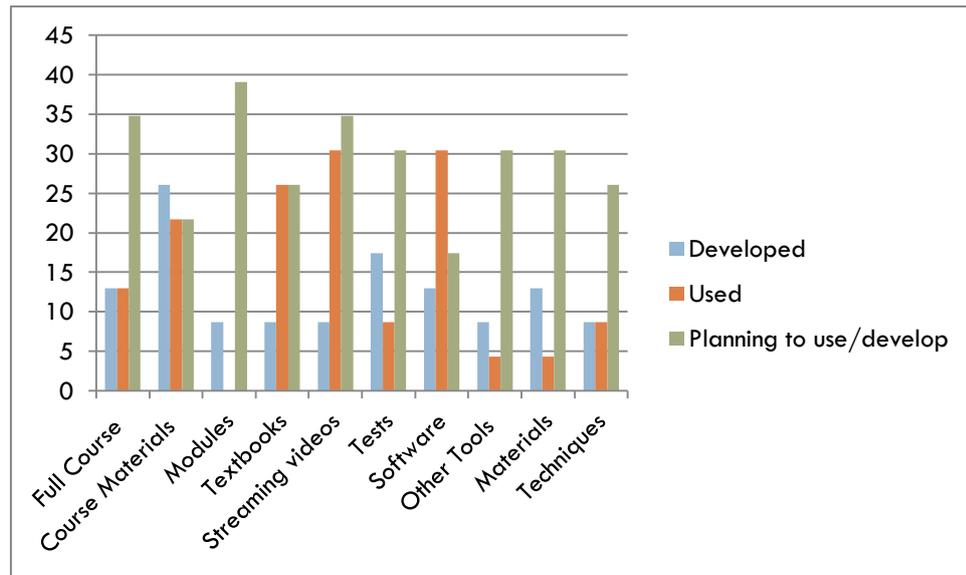
GRAPH 27 – PERCENTAGE TYPE OF OER DEVELOPED, USED OR PLANNING TO DEVELOP/USE

In which educational context has OER been used or is your Institution planning to use?

The institutions have been developing OER to be integrated as "supplemental course content" (17.4%) and as "main course" (13%) in their educational contexts.

The OER have been mainly used as "supplemental course content", as "additional reading" (26.1%) and as part of "research" (21.7%).

Furthermore, the institutions are planning to use/develop OER as "main courses" (47.8%), followed as "additional readings" (43,5%), and the remaining three with same weight, "supplement course content", "assessment" and "research".
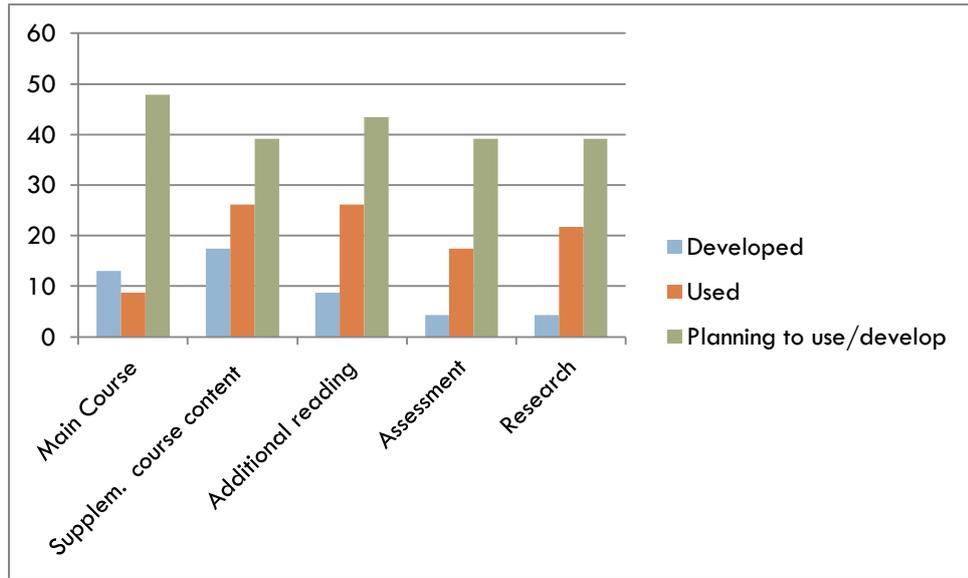
GRAPH 28 – OER EDUCATIONAL CONTEXT USED OR PLANNED TO USE

CHAPTER 5 – CONCLUSIONS AND RECOMMENDATIONS

It is presented the conclusions and recommendations at policy and institutional level, providing a framework to build upon the OER advocacy and implementation.

As referred to in Chapter 2, Caribbean countries and institutions face very specific and concrete challenges due to their double ultra-peripheral situation i.e., countries located away from the mainland, separated from each other, surrounded by water.

This poses not only human development challenges, but also raises such issues as make available high capacity internet to all, lower its cost, foster a research and innovative environment, promote the exchange and sharing of knowledge.

The adoption of ICT policies and their integration in education among the different Caribbean countries varies as well with a potential impact at institutional level. This is critical to move with an Open Education Agenda, where Open Educational Resources are a fundamental part of it.

Main findings

ICT Policy

- 60% of the institutions analyzed have already ICT Policies in place;
- The small-sized institutions (1-50 staff) tend not to have ICT Policies;
- The institutional ICT policies mainly address "Infrastructure and technical support", followed by "Staff professional development" and "ODL and e-Learning". "Student assessment" is the least considered area;
- It is interesting to note that "Research" is a key area, with five of the institutions planning to integrate it in their ICT Policy, although it is currently the second least ;
- Regarding the type of systems and applications the institutions have in place, the majority of them have "student registrations applications", "Open Access Journals" and "Library Subscriptions", and "Virtual Learning Environments";

- Furthermore, there is an uptake of planned "mobile applications", and "cloud services", along with more focus on Human Resources applications;

- The internet in the institution is mainly used by the administrative staff. The teachers are the next group with internet access, followed by the students. The researchers are the group with the least access to the internet. This may be due to several factors, namely the lack or diminutive research in the institutions analyzed. This is also aligned with the IESALC, UNESCO[22] findings "Low legitimacy of scientific activity, where scientific knowledge is not fully valued nor supported.";

OER Policy

- Each of the analysed countries presents different needs and timeframes for the introduction of OER at a policy level.

- Research and sharing occur at the institutional level with a limited availability of shared open educational resources at national level.

- Although some higher education institutions are already integrating OER in educational context around the Caribbean region, there is still a lack of awareness towards OER and their potential educational, social and economic benefits.

- The smaller sized organizations tend not to have ICT policies in place.

- Despite research being considered a key area, there is not a strategic approach to it from institutional level.

- Institutional OER policies are not in the largest TEIs plans in surveyed institutions.

- The main reasons considered by the respondent institutions for the adoption of OERs in their institutions were as part of Open Education Policy, in place enabling use of Open Access and open source software and as part of the educational strategy. The reason considered the less important was Public Good.

- The main barriers to the adoption of OERs in the respondent institutions range from required investment, the quality of Open Educational Resources and the teaching culture.

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[22] "Trends in Higher Education in Latin America and the Caribbean", p 30, UNESCO, 2008

- The human resources changes to integrate OER, should address staff alignment and teamwork.

- The main type of license being used is Copyright, followed by Creative Commons and Public Domain. It seems that there is a misconception regarding the different types of licensing available. It is not clear the difference between Public Domain and making content available publicly, maintaining a copyright license.

Recommendations

The recommendations are made at policy and institutional level. It is critical for the governments to create a policy context conducive to the full adoption of Open Educational Resources, in particular, and Open Education, in general, by the Tertiary Educational Institutions.

Furthermore, these recommendations must be considered from a systemic perspective and their analysis extended to the whole educational system.

At policy making level, taking into consideration the current international trend to adopt OERs as Public Good by international funding agencies, governments and educational institutions, it is critical for CARICOM and the Ministries of Education to clarify their approach to Public Good and advocate for it around the Educational System, thus creating the required buy-in by all the key stakeholders to make it a reality in the Caribbean Region. This clarification will facilitate the creation of a broader perspective as to openness, open education, and the required motivation for change and orientation/adoption towards a knowledge economy.

Create licensing mechanisms that will allow for a broader range of licenses. This is critical for the development of OER. The current licensing systems in the Caribbean countries do not support Creative Commons, being the only region, for instance, that has not a country represented in CC Affiliated Network.[23]

C@ribNET and the Caribbean NRENs, currently supported through the ACP Connect Project, can play a critical role in OER advocacy and uptake by

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[23] http://wiki.creativecommons.org/CC_Affiliate_Network

providing the required infrastructure and Support Services, namely ODL and OER Repositories and Open Access housing and storage, critical to diminish the digital gap among the different countries and accelerate the move towards a Knowledge Economy.

Promote and galvanize the creation of OER repositories at national or Caribbean level, addressing thematic areas. These OER repositories may showcase knowledge unique to the Caribbean region, thus placing them internationally as OER references.

Strengthen the capacity of local Tertiary Educational Institutions (TEIs) to use Open Educational Resources (OER), supported, for instance, on Open Education Policies.

When planning awareness raising strategies, a major focus should be put on OER training, coupled with the development of networks and communities of practice to build on the sharing/learning started previously.

On the institutional level, it is fundamental to either integrate OER, as part of the institutional policies or create specific OER policies.

OER Policies also need to become part of the Human Resources policies, namely with the staff development and teamwork, closely related to the development of Leadership skills.

Furthermore, it is critical to change the teaching culture, not only to accommodate the use and development of OER, but from a broader perspective of positioning the institution towards the knowledge economy.

At a general level, it is recommended to deepen the current study and extend it to all the Caribbean countries, with a representative sample to provide a deeper understanding of the main challenges and benefits posed by OER use and development at Government and institution level, to provide a sustainable policy making basis.

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