Help your students achieve their exam potential

Completely matched to the CXC® syllabus
Strengthen understanding
Improve exam performance

The official CXC® Study Guide series

For a full list of the titles available visit: www.oup.com/caribbean/cxc
WILL YOU LET CXC SUPPORT YOUR STEPS?


#IWill
ABOUT THIS ISSUE  This issue is about CXC and its E-journey, E for electronic. Captioned the “CXC Digital Eco-system”, the cover with its sleek three-dimensional effect design compels you to open the pages. As you do, you are greeted by several of CXC’s innovative initiatives undertaken to make it an electronic-driven, digitally smart organisation. Careful attention was paid to capture the impact of these initiatives on stakeholders who gave them more than a passing grade. Each article is illustrated with eye-catching graphics that makes the magazine “pop!”

CXC DIGITAL ECOSYSTEM

7  E-everything soon come…
Rodney Payne

8  Top 10 Reasons to Use Blockcerts
Natalie Smolenski

10  CXC – A Journey in Social Media
Matthew Tull

12  The CXC Learning Hub
Carol Granston

16  Transformation of CXC Network Infrastructure to the Cloud
Decentice Small

18  E-testing Experience

19  E-marking Experience

20  E-authoring Experience

21  CXC Online

CXC NEWS

22  Release of the 2018 CXC Results, Grenada
Ultimate Resource is its Human Talent
Honourable Emmalin Pierre,
Minister for Education, Human Resource
Development and Religious Affairs,

25  Performance at CAPE Holds Steady

27  Sciences Lead Improved
CSEC Performance in 2018

28  CXC Sponsored-Panel at History Conference
Laments Declining Interest

29  Things parents may want to know about ACCA

30  CXC Stakeholder Engagement

32  Two Directors among new appointees

34  Dominica Hosts First Private Education Fair
Developed alongside Caribbean experts, both dictionaries offer up-to-date coverage of today’s language ensuring it meets the need of students following Caribbean syllabuses.

**Collins Caribbean School Dictionary**

- Age 9+
- Supports students to improve their grammar, punctuation, spelling and writing skills for primary exit exams and secondary placement tests.

**Collins Caribbean Student’s Dictionary**

- Age 11+
- Perfect for students in lower secondary and those working towards CSEC® and CAPE® exams, including writing skills support needed for the SBA for all subjects.

To request a free sample copy, contact tom.cane@harpercollins.co.uk

[www.collins.co.uk/caribbeanschools](http://www.collins.co.uk/caribbeanschools)
E-everything soon come...
By Rodney Payne

The Internet of Things (IoT) references ubiquitous interconnectivity where every ‘thing’ has a connection to or through the Internet. Wearable tech, smart watches, smart TVs, smart cars with accident avoidance systems which can park and drive autonomously are all over the media. Fridges and ovens being controlled by mobile phone apps, supermarket orders automatically placed when the last item is taken from the larder shelf, and utilities being purchased on-demand are all examples of how technology is now being used. Alongside photovoltaic (PV) solutions that appeal to us in the tropics, the applications of information communications technology (ICT) continues to explode. Soon, robots will join the conversation, driven by artificial intelligence and possibly being beamed across national boundaries at the speed of light.
The e-everything strategy crafted by the Caribbean Examinations Council was two-fold. On one hand, to achieve its vision of globally acceptable certification, CXC® had to ensure its product suite was fit for purpose and incorporated the best practice in curriculum and assessment. On the other, it had to maintain service delivery at an optimal level in the most affordable way.

At the Broadband Caribbean Forum held in 2016 in Port of Spain, Trinidad and Tobago, there were presentations and discussions on meeting the “digital natives” in their preferred or authentic media. The generation that will learn writing on tablets, that will communicate via video calling - sharing every moment (significant or not) instantly with the world; a generation of collaborators, working naturally through “ununknowns”, becoming “experts by Google®” while being judged by an older standard as anti-social; a generation influenced by “social” and “snap” and trading digital currency.

On the product side, CSEC® Information Technology and CSEC® Industrial Technology have been revamped, CAPE® Computer Science and CAPE® Information Technology have been reviewed and updated, while CAPE® Digital Media and CAPE® Animation and Game Design were deployed in digital mode only, from their inception. In keeping with the goal of catering for those “digital natives”, CCSC® Digital Literacy and CAPE® Design Technology will soon be launched. CXC® focused on embedding the twenty-first century skills in the syllabuses, promoting collaboration, civic responsibility, critical thinking and lifelong learning, accepting the challenge of training for the unknown jobs of the future.

Supporting the product development, our e-registration started as SIRS at the turn of the century (1999–2000), replacing the old Optical Mark Readable (OMR) registration form and millions of amendment forms. Student Information Registration System (SIRS) evolved into the Online Registration System (ORS) and, by 2010 the application was being hosted offsite in the private cloud. In 2004, the new core Examinations Processing System (EPS) was put into production. The new EPS immediately decentralised the examinations and data-processing operations and empowered both the Examinations Administration and Security (EAS) and Examinations Development and Production (EDP) teams.

In 2008, under the leadership of then Registrar, Dr Didacus Jules, the hyper-cycle to IT Intelligence was supercharged and Council began working on the sustainability of its core functions. This led to the birth of the e-marking strategy, the objectives of which included alleviation of logistics challenges (flights, hotels, marking venues) and improved quality control across multiple marking sites. To support more efficient marking operations, the Markers’ Portal was launched in 2010, along with the new CXC® website (www.cxc.org). Dr Jules actively engaged social media (Facebook, Twitter, LinkedIn) and leveraged it to facilitate real-time interactions with our key stakeholders. A year later the Markers’ Portal (https://marking.cxc.org) was expanded to support e-payments to markers at the end of the face-to-face marking sessions.

Later, in 2011, the Student Portal was added to the ORS and facilitated the delivery of e-results. Between 2011 and 2013, the capacity for virtual meetings was developed and supported not only e-grading, but also the SUBSEC and AFC governance meetings. It may be erroneous to use the term e-governance to describe meetings of our key administrative subcommittees.

As e-marking expanded, the e-everything strategy focused on question paper development. In 2009 the electronic sharing of documents was introduced to improve the tracking and routing of question papers, and by 2014 even greater efficiency was being demanded. The delivery of electronic tests was born with CAPE® Digital Media in 2015, and the ability to seamlessly fuel e-testing demanded the development of e-authoring and e-QBanking systems. In 2017, the first CSEC® e-tests were delivered and only four subjects were not marked electronically. With the support of the Inter-American Development Bank (IDB), 100% digitisation of student records is anticipated, by the end of 2019, and the deployment of the final link in the e-Everything chain, e-Certification will be going LIVE.

By 2020, there should be significant disruption to the current examination cycles. Learning will be decentralised, with the CXC® Learning Hub providing virtually everything needed to prepare candidates to excel in their examinations. Robust tests will be developed using innovative Technology Enhanced Items (TEI) via the cutting edge e-authoring tools. These items will be securely stored in the e-QBank and delivered on demand to the e-testing platform. Candidates will complete their e-registration, submit e-SBAs and be automatically assigned to their preferred certified e-centre. Some e-tests will be auto-scored while others will be e-marked. Candidates will have their subjects graded and preliminary results will be delivered to their smart devices through the CXC® Connect App. Once final, their results will be posted as indelible records that can be validated by third parties via the CXC® e-certificate site. The Caribbean Examinations Council, imagined by our founding fathers as the premiere examinations board in the region, continues to lead the transformation of our nations with its strategic e-everything agenda.
The open standard for issuing blockchain-based records is your easiest bet for creating records that remain verifiable for a lifetime.

Verify any Blockcert instantly using the Universal Verifier at Blockcerts.org.

With more blockchain credentialing solutions popping up every week, it can be difficult to navigate the landscape of offerings. How do you decide which blockchain credentialing framework to use? One of Learning Machine's previous posts discussed some of the options out there in more detail, but in this post I want to keep it super simple: here are the top ten reasons to use the Blockcerts open standard for blockchain credentialing.

Notice I said top ten reasons to use “Blockcerts,” not top ten reasons to use “Learning Machine,” because while Learning Machine helped build Blockcerts with the MIT Media Lab, we don’t own it. Blockcerts are published under an Massachusetts Institute of Technology (MIT) Free and Open-Source Software (FOSS) License, meaning it’s free for anyone to use to build their own applications for issuing and verifying credentials. Learning Machine sells software for issuing Blockcerts at scale so institutions don’t have to build their own applications if they don’t want to. Learning Machine actually wants competitors out there also issuing Blockcerts: not only does this create a bigger, more competitive ecosystem for issuing institutions and their vendors, but above all, it helps recipients and relying parties to use their Blockcerts in many different contexts instead of being marooned across varying proprietary platforms.

Unfortunately, some of the vendors out who started out using the Blockcerts codebase ended up making their solutions proprietary in an attempt to create and maintain lock-in. This is against the spirit of the open standard. It would be like a vendor taking Open Badges, making changes to the code, and then selling a closed solution so one is dependent on his/her software to receive, view, and verify badges. This may be a way to make money, but it’s not a way to create a global, interoperable ecosystem for digital records. The people who suffer most from this practice are recipients, who are disappointed when they discover that their “digital credential” actually can’t be used very widely. And, this gives digital credentials a bad rap.

So without further ado, here are the top 10 reasons to use Blockcerts:

**Own Your Records**

Blockcerts are co-owned by issuers and recipients, which means that issuers own and keep all the records they issue, even if they decide to switch vendors later on. It also means that recipients (students, alumni, workers, citizens) own and keep all the records they have received, even if their government, company, or university switches to different records providers later.

Recipients can still cryptographically prove that they are the individuals to whom certificates were issued. By contrast, the keys of issuers and recipients are stored by credential providers.

This means they are unable to prove they are the rightful owners of their digital records, or they can’t take their documents with them if they choose to switch vendors later—or both. As a consequence, this makes verification more difficult (how do you know whose digital credential you’re looking at?), but it defeats the purpose of using a blockchain. The promise of blockchain technology is that individuals should be able to directly own their digital assets without a middleman. That is what “digital self-sovereignty” means.

**Vendor-Independent Verification**

Verification of Blockcerts is vendor- and issuer-independent, meaning that if vendors are changed or issuers go out of business, Blockcerts remain verifiable. You can check out the Universal Verifier at blockcerts.org—it is a “Google for document verification” that will verify any Blockcert issued by any institution anywhere in the world, even if the original issuer or vendor used to issue the documents is no longer around. There is no need to download anything, buy tokens, or pay anyone. Verification is instant and free. This is important for documents that need to remain verifiable 10, 20, or 50 years from now. Try it out with some Example Blockcerts!

In the not-too-distant future, CXC will be using blockchain technology to issue certificates to candidates taking its examinations. In this article Natalie Smolenski explains the use of Blockcerts, a blockchain-based system used to issue electronic certificates.
Issues to Multiple Blockchains

Blockcerts can be issued to any blockchain (Bitcoin, Ethereum, Sovrin, Hyperledger, etc.). This means you can issue to multiple chains if you want to be extra secure, or just use the chain of your choice. No need to “pick a winner” blockchain today or get locked into a single company’s proprietary blockchain that might not be around in 5 or 10 years. Note: Many blockchain credentialing vendors don’t tell you which blockchain they actually anchor records to, because you’ve probably never heard of it! And those that do often want to lock you into using their proprietary blockchain, which generally has little adoption or chance for long-term survival. Remember, a blockchain is a network—how many “intranets” (closed networks so popular in the 90’s) are still around today? Answer: not many, because everyone just uses the public internet. When choosing blockchains, bet on large networks that have a proven track record for security and longevity. And hedge your bet by going with a solution that can issue to multiple chains.

Portable

Blockcerts are not locked into any one identity platform. They can be added to any identity profile one chooses—public profiles like Facebook, LinkedIn, Twitter, or an ePortfolio, or hold them privately and never associate them to a public profile. There is no need to create an account with Learning Machine or Blockcerts to receive Blockcerts—they are sent peer-to-peer, directly from the issuing institution to the recipient. Recipients do not need an account with Learning Machine to store, access, or share their records either. Issuers can store the Blockcerts they have issued in student profiles within their Student Information System, LMS, or CRM, or in whatever other database they choose. This means the free, open source Blockcerts Wallet is not the only place recipients can store their Blockcerts. The Wallet allows recipients to prove ownership of their records by managing their keys, but it is not the only place you can keep a portfolio of your achievements!

Private

Blockcerts are sent directly peer-to-peer, from issuer to recipient only those two parties have copies of the records. And, if you are using a public blockchain like Bitcoin or Ethereum, no personally-identifiable information (PII) gets stored on the chain. Instead, what is stored is a “digital fingerprint” of the Blockcert: it cannot be used to reconstruct anything about the record, but the record references the hash for verification. If the issuer and recipient do not wish for anyone to ever see the record, they can simply delete it. There is no way to recover the document from the blockchain. This makes Blockcerts compliant with the GDPR, including the “right to be forgotten.”

Interoperable

Blockcerts uses a standard data format (JSON-LD) which can be parsed by any system that can read structured data. This means it’s easy to automate verification and screening of Blockcerts without needing to buy special software. Some blockchain credentialing vendors have created proprietary file formats for their records that can only be decoded within their own ecosystem. Again, creating lock-in!

Open Source, Open Security Review

Blockcerts are also open source, meaning anyone can run a security audit of the code. What you see is what you get. With a “black box” solution, how do you know what is actually going on the blockchain and what is off-chain data? How do you know how verification actually works? How do you know where the security vulnerabilities are? Answer: you don’t.

It’s Simple

This is perhaps the most important reason to use Blockcerts. So many blockchain solutions out there are based on a company’s ICO or proprietary blockchain, where one has to buy tokens, create accounts with identities tied to their blockchain, and everyone who issues, receives, or verifies the records has to become part of the network somehow. With Blockcerts, institutions can issue, recipients can receive, and relying parties can verify digital records without having to buy tokens, run a node, or become “members” of a network. One does not even have to know what a blockchain is to use Blockcerts. It’s designed to be as open and easy as possible.

It’s the Future

By 2020, most companies and governments will be using the blockchain in some way for verification of claims. The main question to be answered now is, will organisations go with a solution that privileges ownership of data and vendor independence, or will they choose solutions that give ownership of their data over to yet another series of vendors? We are now at the exciting historical moment when we get to choose what our future will look like. Everyone who chooses an open standard makes the world better for everyone else. Blockcerts is a public good that creates a global ecosystem of truly interoperable, enduring digital records for all.

Support a Women-Led Blockchain Company

OK, the tenth reason is not strictly a reason to use Blockcerts, but there’s a lot of discussion about the need for more inclusivity and diversity in tech and crypto. Learning Machine is not just talking the talk—we are walking the walk. Our CTO is Kim Hamilton Duffy, who is also Principal Architect of Blockcerts. She is also Co-Chair of the Credentials Community Group at the W3C, which is working on cutting edge, blockchain-based digital identity technologies like Decentralised Identifiers (DIDs) and Verifiable Claims (VCs). I lead Business Development and love translating Kim’s genius into concrete projects that make the world better. We are a close, supportive, and talented women-led team. If you choose to license the Learning Machine Issuing System to issue your Blockcerts, you are contributing to the brain trust behind the open standard and supporting a future-focused company.

The upshot: Everyone who chooses an open standard makes the world better for everyone else. Blockcerts is a public good that creates a global ecosystem of truly interoperable, enduring digital records for all. So, if you want to try out the world’s simplest way to issue independently verifiable, recipient-owned, secure digital records, reach out to me—I’m happy to show you what’s possible!

Natalie Smolenski
is Cultural Anthropologist & Business Development at Learning Machine.
CXC – A Journey in SOCIAL MEDIA

By Matthew Tull
Social media has changed the way we engage with each other and with the world. It has become a resource where connections are made, information is shared, and news is consumed on a daily basis. What was seen not too long ago as mere entertainment, social media; has evolved; become a legitimate form of having ongoing conversations between organisations and its stakeholders.

Over the years, CXC has embraced the use of social media platforms such as Facebook, Twitter, Flickr, LinkedIn, and YouTube, with plans of incorporating others in the near future in order to reach its audiences wherever they reside, digitally. While this journey has not been free of challenges, there are some important lessons learnt, and key benefits derived along the way.

Social media is a powerful way of humanising CXC. As a regional institution and examining body, the Council’s digital presence is arguably the most effective method of countering the narrative of secrecy and inaccessibility typically associated with such organisations. Connecting with stakeholders online has meant demonstrating CXC’s core values by sharing content which is beneficial to the academic advancement of each follower. This includes addressing individual queries in a timely manner and delivering personalised attention.

Throughout this transition, social media has afforded CXC the opportunity to further reinforce its position as a thought leader in the Caribbean education arena. For the Council to function effectively, it requires public trust in its capacity to deliver on its mandate. By commenting on related issues online, and regularly reporting its work throughout the region using images and video, CXC builds upon that trust.

Posts on social media have proven to be effective ways of driving traffic to CXC’s corporate website. Similarly, sharing relevant content from CXC’s blog via social channels is a great strategy to engage readers and expose potential candidates to the suite of products that the Council offers. Hence, social media has become a leading way of lead generation and customer acquisition for the council.

Another crucial lesson learnt is the extent to which Harvard Business Review stakeholders have come to expect institutions like CXC to be available on social media as an avenue for customer service. Research published in the Harvard Business Review argues that brands which do not meet these expectations online, risk damaging their reputations. CXC therefore implemented a sophisticated customer relationship management system known as Freshdesk which collates all social media feeds and online customer queries into a central repository which offers the Council the capacity to respond to queries in an efficient manner.

A key consideration in CXC’s journey into the digital spaces of social media has and continues to be user data. This is due to the fact that social media has the potential to generate huge quantities of data about stakeholders in real time. Through constant analysis, this data have been used to make smarter decisions which address the needs of a modern Caribbean public. Furthermore, data mined from social media have helped the Council to create more accurate predictions, helping the institution to respond to problems before they escalate and, in some instances, before they occur. Online polls and surveys powered by social media are great illustrations of how these invaluable tools are used to gauge the opinions of our stakeholders in real time. Analysis of the data ensures that CXC’s decision-making capacity is informed by the communities the institution serves.

In recent times CXC has come to value social media as an effective tool in its recruitment and selection processes. Internal stakeholders have a key role to play in carrying out the Council’s mandate, therefore it is incumbent on CXC to ensure that the right people are in the right positions. In 2010, a Microsoft study on ‘Online Reputation in a Connected World,’ hundreds of recruiters and HR professionals who were surveyed indicated that they checked online sources such as social media to learn about potential candidates, and many have reported that their companies have made online screening a formal requirement of the hiring process. CXC’s adoption of LinkedIn as a social media repository of talent has therefore been a strategic choice to complement its selection and recruitment tools.

Perhaps the most important lesson learnt by CXC in its social media journey has been its ability to maintain its engagement with stakeholders through social listening. In the world of social media, things move fast—and organisations cannot afford to be left behind. Keeping up with trends and sentiment throughout the region would be much more challenging without the adoption of a social media presence. By keeping connected online, the Council is constantly informed about upcoming changes to the industry which can potentially affect the way it operates.

This appreciation of the value of social media has led CXC to make the case for establishing the CAPE Digital Media and Animation and Game Design syllabuses. These have been established more than five years with the objective of equipping the next generation of Caribbean digital media practitioners. By leveraging the opportunities afforded to CXC by social media the region is better positioned to build the skills and knowledge base that are essential to building and sustaining the digital economy in the Caribbean.

Matthew Tull
is the Digital Communications Officer at CXC

www.cxc.org OCTOBER 2018 11
The strategic vision of the Caribbean Examinations Council (CXC®) acknowledges the fact that the old methods of **chalk and talk** are no longer adequate for the requirements of learning in the 21st Century. Further, that learning is not confined to classrooms, but shaped by lifestyle – mobile, flexible and personalised. In the area of education, both regionally and globally, the influence of new and emerging Information and Communication Technology (ICT) tools is undeniable. The impact of these innovations is most significant in the areas of what has been described as the 4Cs; **Communication, Connections, Conversations** and **Community**. These 4Cs have a direct and profound significance for the teaching/learning process. It has never been more imperative for teachers to embrace new and emerging technologies and understand how these tools can be used to support the learning process. The interactive capabilities of these tools support learning that is unrestricted by time and place. Additionally, the collaborative and social networking potentials provide fertile grounds within which communities of learning can be formed. This kind of environment lends itself easily to the development of collaborative learning spaces that support richer engagement—teachers allow students to work together to generate content and engage in student led collaborative learning activities. In this context, teachers and students become partners in the learning process.

As a regional examining body, the CXC® has made significant contributions to education in the Caribbean, not only through the provision of world-class certification, but also in the harmonisation of education across levels and in building the capacity of teachers.

As part of the Council’s mandate to provide candidates with access to resources to support their preparation for examinations offered by the Council, the Caribbean Examinations Council will launch the CXC Learning Hub. The CXC Learning Hub is a web-based facility that will provide users with a **Single Access Point** to resources that support teaching, learning and assessment of all products in the CXC suite of offering; CPEA, CCSLC, CSEC, CVQ and CAPE.
The CXC Learning Hub will therefore provide an integrated system that will house a myriad of resources that can be accessed by users. It will include resources that have been produced by CXC, mined from Open Educational Resources (OERs) available as well as resources produced by CXC external partners. The CXC Learning Hub will provide that single-space where all resources to support CXC’s suite of offering are available.

Why the CXC Learning Hub

As a regional examinations board, the Caribbean Examinations Council recognises the importance of providing access to high quality learning support resources to assist all its stakeholders. Educators, parents and employers will be able to access these resources to increase their awareness of and/or support the implementation of CXC products. Learners may use the resources available on the CXC Learning Hub to support their learning and better prepare for our examinations. The CXC Learning Hub will therefore provide a one-stop shop for all resources to support teaching, learning and assessment as well as facilitate the development of communities of learning, that is, collaborative learning spaces where knowledge can be shared and created.

The CXC Learning Hub will:
1. Increase access to high quality learning support resources for all products offered by the Council;
2. Provide learners, teachers and parents with a one-stop shop to access resources to support teaching, learning and assessment. Users of the CXC Learning Hub will benefit from single sign on that is, you will be required to sign on once to the Learning Hub with a single login credential (username and password) to access an array of resources.

There are currently numerous resources available to teachers and learners. However, these resources are in multiple locations including the CXC website, the CXC store and Notesmaster and require users to create multiple login credentials to access these resources. The CXC Learning Hub will integrate all these resources into a single space though which the resources can be easily accessed.

3. Provide teachers and learners with syllabuses which are the blueprint for the examination and learning support resources through exemplars and Subject Reports. In addition, it will provide access to Study Guides and Past Papers which are produced in collaboration with our external partners. More recently, CXC has extended its provision of learning support resources to include Digital Toolkits and Virtual Learning Communities for teachers and learners through Notesmaster. The CXC Learning Hub will be an extension of this principle as all learning support resources will now be available via this single space. This initiative is in keeping with the fairness principle in assessment. The Caribbean Examinations Council, as a public examinations board, has a responsibility to ensure that learners are informed about areas on which they will be assessed. This perspective is supported by Gross & Showers (2015) who purport that “emphasis is placed on providing candidates with essential information to prepare before the test… A test content outline or blueprint conveys the scope and emphasis of the examination.”
What will the CXC Learning Hub provide?

There are two broad categories of resources that will be available on the CXC Learning Hub: 1) Free and 2) Premium. The Freemium content, as the term suggests, will be free of cost whereas, the Premium content will attract a fee.

Free content on the CXC Learning Hub will include, *inter alia*:

| **Digital Toolkits** | Digital Toolkits are collections of digital resources to support teaching learning and assessment of subjects offered by the CXC®. The Digital Toolkits include infographics, animations, podcasts, videos, presentations, webinars, and documents. Digital Toolkits are organised within a web frame by categories of resources and topics for the various products and allow for easy navigation using the dedicated icons and a search window. CAPE® subjects are organised by Unit, Modules and Topics; CSEC® subjects are organised by Section and Topics; while CCSLC® subjects are organised by Modules and Topics; while CPEA and CVQ are organised by Standards. |
| **Exemplars** | Exemplars are annotated illustrations of actual responses provided by candidates to examination questions and are designed to provide suggestions to enhance the learner’s level of achievement. Exemplars may be examples of written work, designed tasks, art works, recordings of dance, drama or musical works. |
| **Interactive Syllabuses** | Interactive syllabuses provide the blueprint for the examination which are available to users at no cost. Users are able to access, from within the interactive syllabus document, other digital resources to support the objective or topic being explored. |
| **Subject Reports** | Subject Reports provide a summary of candidate’s performance for each examination session and give additional details regarding areas on the examination that are challenging to candidates. Additionally, Subject Reports may also highlight areas that were well done, as well as provide suggested responses and/or solutions. |
| **Practice Test** | Practice Tests are models of the live examination that provide authentic exposure to the testing environment and process. Two types of practice tests that will be available; the Specimen Examination Paper and an additional test. The Practice Tests on the CXC Learning Hub are scored automatically provided the test is submitted electronically. |
| **The CXC Photo Gallery** | The CXC Photo Gallery is a collection of annotated photographs from across the Region that may be used in the teaching and learning context. |

**PREMIUM CONTENT**

| **CXC Study Guides** | CXC® Study Guides are publications designed to support CXC® syllabuses. They are accessible at a cost and provide learners with additional information to enhance their preparation for CXC® examinations. The CXC Study Guides are a unique product that have been written by experienced subject specialists and carry the exclusive branding of the Council. |
| **Past Papers** | Past Papers are a collection of administered examinations for a select period that are available on the CXC Learning Hub. |
Premium content will include content that has been developed by the CXC which will be provided for sale and may include games, animations, learning objects, among others. Additionally, content such as the CXC Study Guides and Past Papers will be provided on the Learning Hub at a cost.

In addition to content that will be provided, the CXC Learning Hub will also provide a collaborative space for various stakeholder groups. The first set of groups that will be included are the Virtual Subject Associations (VSAs) for teachers and the Virtual Learner Groups (VLGs) for learners.

The Caribbean Examinations Council continues to seek new and innovative ways to serve the region. It is expected that the Learning Hub will help to improve equitable access to quality learning opportunities for our stakeholders across the region.

The CXC Learning Hub will therefore provide a one-stop shop for all resources to support teaching, learning and assessment as well as facilitate the development of communities of learning, that is, collaborative learning spaces where knowledge can be shared and created.

Dr Carol Granston is the Pro Registrar of the Caribbean Examinations Council.
Transformation of CXC Network Infrastructure to the Cloud

By Decentice Small
Definition of Cloud Computing

Cloud computing relies on shared computing resources rather than having local servers or personal devices to handle applications. Cloud computing takes services (“cloud services”) and moves them outside an organization’s firewall, or it uses services hosted/located on computers outside of the organization’s firewall.

CXC’s Current Hybrid-Cloud Infrastructure

CXC network infrastructure is currently made up of 90% in-house servers and other hardware infrastructure, with the other 10% located in the cloud. CXC has had its Hybrid-Cloud infrastructure from 2010. In the near future, CXC network infrastructure will be transformed to hybrid-cloud environment.

This evolution is envisioned to reduce the cost of maintaining CXC’s network IT infrastructure and improve its IT mobility and security.

Future Cloud Computing Development

With the ever-evolving IT landscape around the world, and with organisations needing to respond to their stakeholders as quickly as possible. CXC has seen the need to further develop its cloud computing capability. It has been envisioned that CXC will be able to service Participating Countries and the wider world by moving to cloud platforms that can be scaled up to accommodate the needs of its stakeholders.

Cloud Computing fulfills this goal because servers which are used to support CXC’s examination products can easily be created to accommodate increased student enrollment or capacity can be decreased if there is a drop in student enrollment. In addition, students can take exams from test centres that are considered remote locations within the Caribbean or the Diaspora.

Cloud Computing Services

Cloud computing also offers the following which improves the delivery of services to CXC stakeholders

- Infrastructure as a Service (IaaS)
- Software as a Service (SaaS)
- Platform as a Service (PaaS)

Infrastructure as a Service

Infrastructure as a Service (IaaS) is a method of delivering computing, storage, networking and other capabilities via the Internet. IaaS enables companies to utilise web-based operating systems, applications and storage without having to purchase, manage and support the underlying cloud infrastructure. CXC is currently moving to this type of service in order to improve delivery of its services to the Caribbean as this will ensure that remote locations in some regions within the CXC membership can be easily serviced.

Software as a Service

Software as a service (SaaS) allows users to connect to and use cloud-based apps over the Internet. Common examples are email, calendaring and office tools. In case of CXC this includes hosted Exchange services.

Platform as a Service

Platform as a Service (PaaS) is a category of cloud computing services that provides a platform to allow customers to develop, run, and manage applications without the complexity of building and maintaining the infrastructure needed to support this activity. These include Amazon AWS Elastic BeanStalk and Microsoft Azure. These platforms allow customers to develop robust software applications in the cloud which can be accessed by persons using an internet browser. CXC has not used these Public Cloud Platforms to develop software for users, but instead is using Private Cloud Platforms to provide these services.

The current state of CXC’s Cloud Computing Development

CXC has a number of projects that involve all of the services above. The goal of these projects is to be able to deliver all of CXC’s services to its customers in a timely manner and to deliver these services to 100 per cent of its member states and to the wider world.

The IaaS CXC project when completed will provide IaaS services from the Cloud service provider contracted by CXC for the provision of these services to its Internal and External stakeholders, and should allow for faster access to services by these stakeholders. The infrastructure provided should be more robust so that it allows easy expansion of services such as the increase in hard drive space or increased bandwidth services if needed. Both internal and external stakeholders in the future will be able to easily access all CXC services throughout the world once they have an internet connection, because of the robustness of the Cloud Infrastructure.

The SaaS projects when they are completed will allow CXC internal users to access email and other communication services and eventually office tools without having to worry about service interruptions due to bandwidth limitations.

PaaS projects which have been started by CXC are intended to improve the delivery of CXC Examination products to its stakeholders in a very secure manner.

It will ensure that these services are all delivered using an integrated platform which will reduce or eliminate mistakes made when processing these products. With this approach, the production and dissemination of exam papers and exam results should be provided to internal and external stakeholders using an automated system where these stakeholders can use their browsers to access these resources.

Cloud Computing offers to CXC the possibility of improving the delivery of the final products to its stakeholders with improved accuracy and the ability to reach all areas of the Caribbean Diaspora. It also offers secure delivery of these services. With the introduction of these types of services CXC should also be able to reduce its IT costs while delivering world-class products and services to its external stakeholders.
E-testing Experience

As part of its E-strategy, CXC introduced e-testing in January 2017. E-testing was again offered in May/June 2017 and 2018 and January 2018. The Examiner asked some candidates to share their e-testing experience.

SHANIQUE JULIEN
Using the e-testing platform for some of my multiple choice CSEC exams was a unique experience. Admittedly, I was nervous at first; I did not know what exactly to expect. However, as I got used to it, my anxiety dissipated and I felt like I was doing a normal online quiz. The platform was user friendly, with a single-question display, easy-to-follow instructions and an option to flag troubling questions. It was quite efficient, so much so that I found myself finishing faster than in my paper-based exams. This made me more confident in my answers. My urge to meticulously check my answers and second-guess myself was curbed. The only problem I faced was the distracting ‘clicking’ sounds around me as my fellow candidates did their exams, but I managed to focus. Given my overall positive experience with the e-testing platform, I would definitely recommend its incorporation into the CSEC exams.

CARL A. THOMAS JR.
Having sat the Caribbean Examinations Council’s (CXC) 2018 examinations with the newly developed e-testing platform, I can attest that there is great potential and an equal share of concern with the platform. While the transition from pen and paper to an electronic structure was very satisfying, efficient and mostly accurate, I, and I would believe others, was mildly concerned about the privacy and the broad spectrum of issues that can occur even with the most advanced electronic systems. One could not help but consider the effects of something as simple as an unscheduled outage, a faulty machine, hard drive failure or any other peripheral or environmental circumstance. Most assuredly, some measure of backup and recovery, even redundancy, would ease the major concerns about the new platform.

AJA HODGE-KELSICK
The decision to utilise e-testing was definitely a smooth and advantageous transition for both my classmates and me. Using the e-testing platform allowed for a more efficient examination experience. Whereas, we would have to shade in answers, this was now made easier with the click of a mouse. The new computerised system also made me feel more engaged and attentive during my Paper 01 examinations. I believe that as a result of the visuals, the ease with which I was able to manoeuvre between pages and select answers, change answers without having to erase and re-shade, and clearly see and mark when a question was left unanswered, improved my performance significantly. Kudos to this new technological venture and all future improvements!
E-marking Experience

Electronic marking or e-marking was one of the first major planks of CXC’s e-strategy, and has become the norm at CXC over the last three years. Three of seasoned e-markers share their experience using the CXC e-marking platform.

NAOMI PATRICK-SMITH

I consider myself fortunate to have experienced both live, face-to-face marking and e-marking of the Theatre Arts CSEC examination. I must say, marking CSEC Theatre Arts has been such a valuable experience as it has shaped my teaching tremendously.

I remember being very reluctant about the e-marking shift, having the belief that the face-to-face was more beneficial for both the markers and the candidates. I remember some heated discussions about a controversial candidate’s response. I also remember thinking that such discussions would no longer be possible and students would be disadvantaged. How absolutely wrong I was and how time has changed!

I must confess that the e-marking process has not been the difficult, horrible exercise I initially feared it would be. One of the biggest losses I thought we would have experienced was remedied with the use of ‘WhatsApp’. The communication amongst markers and supervisors is just as easy and maybe even more efficient. We can still ask questions and share our knowledge with each other, especially when marking those controversial scripts.

Furthermore, the most valuable benefit of the e-marking system, for me, is the ability to mark at my leisure. Choosing when I want to mark and for how long, is most convenient. I am no longer bound by the nine to five time schedule: I can mark at nights if I choose, or even in the early morning when the house is quiet. I can decide how long I want to mark for and when my breaks will be. Marking now works around my schedule and not the other way around. Giving myself a quota for the day keeps me motivated and on track, and that works so well for me. There is and will always be room for improvement, but I think with technology, the scope is limitless.

EARL SKERRITT

Having been associated with CXC’s marking activities for more than 30 years, I have been privileged to enjoy both face-to-face and the e-marking processes.

While e-marking removes the obvious face-to-face advantages of direct contact with each other during marking, and the camaraderie during and after marking, the e-marking scenario itself has many advantages, which I have been able to appreciate and enjoy more and more. The flexible times to mark, the ready and timely help from helpdesk and the readiness to improve things for a smoother operation have served to make the exercise productive and less and less stressful.

It has also enhanced my desire and ability to do more with the computer, acquiring new skills and gaining knowledge in areas not ventured into before.

Through webinars and other training tools the Caribbean Examinations Council continues to advance its quest to keep the institution relevant and a leader in innovation in the region, especially in the e-marking initiative.
DR GLENDA GAY

Since 2015, when CSEC Information Technology (IT) transitioned from face-to-face marking to e-marking, I have looked forward to each e-marking exercise.

The annual reunion of about 100 teachers has continued, as we welcome new markers and keep in touch with others. The camaraderie among the team (Council’s staff, examining team, seed makers, and e-markers) has grown over these years, especially regarding the methods used to cater to this online environment and short window given to meet our deadline.

Our success is based on consistent communication with our team. Since the marking platform’s mandatory messaging feature does not push messages outside its system, email messages and WhatsApp groups are typically used to interact with our team.

The reunion starts with a welcome message to seed makers and e-markers. Sharing the marking strategy is important when your team is scattered across the region or beyond. They must be aware of what is expected of them.

When E-marking begins, addressing initial concerns such as password issues is vital in reducing frustration and delays in the process. Communicating our daily completion status and responding to queries quickly are useful in keeping e-markers up-to-date so they can continue to meet their targets.

Most IT markers tend to follow the strategy; hence questions are completed in a timely manner. Once a team trusts our guidance and follows the mark scheme, then inaccuracies and suspensions are reduced. However, showing appreciation for their contribution to improving the process, and their ability to maintain consistent and accurate marking cannot be overstated. Without ‘them’, there can be no ‘us’.

I have sincerely appreciated the opportunity to work with and learn from all IT examining committees, seed makers, e-markers and the CXC staff as we contribute to our region. I encourage the incoming examining committee to enjoy next year’s reunion!

E-authoring Experience

MS SANDRA BLOOMFIELD

My experience with e-authoring dates back to 2012 when I first encountered Articulate. Since then, I have used a number of e-authoring tools, both as a content creator and consumer. E-authoring has grown tremendously over the years. There are quite a number of developers who are now creating a space for packaging information and resources for end users to access from the Internet. Its use has been proliferated in educational institutions and of course businesses are employing it to transform their operations.

Some businesses are reaping the benefits of e-authoring through the establishment of interactive e-spaces to share contents, such as magazines, newsletters, company prospectuses, among other useful applications.

I find it particularly useful for quickly accessing and disseminating information among intended users. While updating the information is easy and can be done at anytime, I have noticed that some e-platforms contain information that needs to be updated, and so for me, emphasis must be placed on keeping the e-platform up to date. End-users may not necessarily know if the content available is the most recent publication. Our company certainly save by having this in place and it further facilitates data manipulation by users, and allows for convenient access. We no longer worry about distribution of the content, as it is quite accessible to those who need it.
MRS SUSAN MCALLISTER  
– Manager, Measurement and Evaluation

I mainly used the CXC website for the following information:
- Organisational structure
- Products being offered
- Functions of departments
- History of CXC

DR WAYNE WESLEY  
– Director of Operations

The CXC information platform was very instrumental in my preparation for both the interview and readiness for starting the job. In particular, the website was very useful in providing background information about the formation of the Council in terms of governance and structure as well as a solid overview of the products and services offered by the Council. The Let’s Talk feature, was very helpful in understanding the new strategic thrust of CXC in the creation of an e-infrastructure for examination services. CXC TV presentation of the launch of the Customer Charter was also very useful in understanding Council’s commitment to quality customer service. In summary, it was a valuable resource for my preparation for joining CXC.

LINDA STEWART-DOMAN  
– Manager, Syllabus and Curriculum Development

The platforms that assisted me in my preparation for interviews at the Caribbean Examinations Council was the organisation’s website and LinkedIn page. I was able to garner a sense of the organisation’s identity, branding and ethos. The platforms allowed me to increase my awareness of the organisation’s products and services and provided insights as to its overall strategic intent as seen through the pages of the Annual Reports, blogs, magazines and press releases. The website for me was particularly engaging and appealing and provided relevant information and documents relating to my job portfolio. Interestingly, I was able to vicariously live the culture as it was emanating from the posted blogs of activities, the E-Testing platform, the face to face Teacher Orientation and Teacher Support workshops, professional development activities and the business model of the organisation. The information gleaned from the platform shaped my own impression and facilitated a deeper understanding of the organisation.

The CXC LinkedIn provided valuable resources that reinforced the professional image of the Council and its mission, vision and corporate values. It was a most productive and valuable tool in getting the ‘big picture’ sense of persons who worked at the Council, their relevant portfolios and the responsibilities and competencies that were associated with the varied roles. It also provided and enabled a platform of networking with the different professionals and provided an avenue to know the categories of individuals that were connected to the Council’s work.

Hence, I was able to utilise aspects of the CXC’s digital ecosystem as part of my research strategy in gaining the necessary insights about the organisation.

Just how useful are the many digital platforms operated by CXC in helping people find information, in particular someone who is seeking employment with CXC and wants to find information to prepare for the his/her interview. The Caribbean Examiner asked three recent recruits.
Let me, first of all, welcome our colleagues from the Caribbean Examinations Council – a world class, Caribbean-grown institution, which has stood the test of time and is in the forefront of its own modernisation and well positioned for significant contributions to the transformation of education in our region. I also welcome all other visitors, our viewers from every CXC participating country and elsewhere, who are watching this proceeding through social media and other networks. It is indeed an honour to be hosting the official release of the 2018 CXC examination results.
CXC’s practice of doing an official launch of the results of its annual examinations, in every subscribing Member State, is a very positive initiative, because it provides both a sense of inclusion as well as an exercise of accountability. The examinations offered by CXC are all high-stake examinations because they provide the certification of accomplishment at every stage of the education system.

So, it is important that CXC reaches out as far and as wide as possible to provide a credible and objective account of educational performance to all, so that we can begin to take seriously the upgrading of our human potential, as individuals, and as a society whose ultimate resource is its human talent.

For the past 46 years the Council has provided unwavering services to its 16 member states via examinations, at various levels. While still maturing, the quality of services provided is comparable to the best examination bodies in the world. Adding to our landmark was the introduction of e-marking in 2013 and electronic testing, commonly referred to as e-testing, in January 2017, for multiple choice papers and, in 2018, paper two’s. We in Grenada, and I am certain other participating countries can boast about the number of subjects gradually introduced since the initiation of e-testing.

I am proud to say that Grenada started e-testing with 11 subjects in 2017, one of the countries with the most number of subject entries for e-testing, and yearly we cautiously continue to put the necessary mechanisms in place to ensure e-testing continues to be a reality.

The direction taken by CXC for e-testing shows its commitment to staying up to date and eventually ahead of the technological era. We must stare reality face on. If we fail to advance, not only the way in which we test, but also the pedagogical skills used in the implementation of the syllabuses, then our children will continue to lead the way and leave us behind.

Therefore, I encourage my fellow participating countries to note that it is imperative that we embrace the technological innovations and opportunities provided by CXC to assist us in meeting the needs and challenges of the inevitably modernised and expanded education system. Due to a changing society and demographics, teaching will increasingly be complemented by e-learning and e-testing, for which we must be adequately prepared.

I admonish all of us to continue to have confidence in the technological enhancements and the new programmes offered by the Council. In so doing, we have an important responsibility to look at the achievements, as well as the gaps, constraints, challenges and potential and future actions.

In addition to the wide range of academic subjects offered by the Council, we must emphasise the importance of the technical and vocational areas candidates can access. The CVQ, similar to the CCSLC, is competency based, which allows our candidates to be certified at various levels. This move is a critical one in preparing our candidates, more so, with the skills needed to become a part of and to survive in the job market. The Caribbean Examinations Council, along with our National Training Agency (NTA), must be applauded, since these technical and vocational skills are what our region needs to drive economic and social development.

We need to continue to invest significantly in the technical and vocational training centres for students in school, as well as for adults in the society. This will build the education of our candidates and enhance our labour market.

Today, as we host this very important regional activity, I cannot help but think that it may not be accidental, nor even rotational, that Grenada has been chosen by CXC to be the location for the launch of the 2018 Examinations Results.

We have the distinction of being one of the Caribbean territories in which education policy – at least insofar as assessment is concerned - in the past three decades has enjoyed bi-partisan support.

When CXC conceptualised the Caribbean Primary Exit Assessment (CPEA), as a replacement for the defunct Common Entrance Examination, and requested of the then administration that Grenada be a pilot site, the Minister for Education, Franca Bernadine, requested that all primary schools be included in the pilot. CXC insisted that, given the high stakes nature of this exam, this could only be done on condition that both Government and Opposition agree to this, as it did not want the examination to become the subject of partisan disagreement.

As a result, detailed presentations were made by CXC to both the Cabinet of Ministers of the Tillman Thomas administration and to the Parliamentary Opposition, led by Dr the Right Honourable Keith Mitchell, and both sides of the aisle agreed on the value and importance of this undertaking. It is a credit to the former Minister that she had the courage to take this bold step and it is also a credit to the principled leadership of Prime Minister Dr the Right Honourable Keith Mitchell that he chose the high ground of supporting progressive educational measures, rather than the lower road of creating partisan divisiveness, which the Caribbean is becoming known for.

I have taken time to reveal this history because there are important lessons in it for all of us – not only in Grenada, but throughout the entire region. Education is too important to our individual lives and it is too essential to the future of our children and to the development of our nation to become an arena of political contestation, petty rivalries and opposition for the sake of opposition.

Another critical lesson is that education is not simply and exclusively the responsibility of the Ministry of Education – it must be a partnership with parents, teachers, denominational authorities, employers and a responsibility of society at large.

Today, more than ten years later, we can see the positive consequences of the courageous stand taken by leaders on both sides in the learning achievements of our children.

Registrar, partners in education and friends, this event is very timely for us in Grenada, Carriacou and Petite Martinique because it complements the new thrust that we are taking in education. We have invested and continue to invest significant resources in education and very often in the Caribbean. We assume that the solution to all of our problems is to invest more. The time has come to critically review and assess the
value proposition, not only in education - but in everything that we do. The tradition at graduations and at events like this has always been to focus on the top fliers – those who have attained with distinction. Yes, we must applaud them and we must hold them high as examples of what effort, dedication and application can achieve. But success for us at the national level must mean that entire cohorts are succeeding.

We are starting this new term of this administration with a FOCUS ON LEARNING and there are some fundamental principles on which this is based:

• We believe that every person (note I did not say child but person because education must be a cradle to grave aspiration) so we believe that every person is capable of learning and we have a responsibility to enable this.

• We are clear that the purpose of exams is simply to provide independent assessment of the learning achieved and the competencies acquired, exams do not exist for their own sake and as a result we must move away from the obsession on testing to a dedication to learning. (In our system, the CPEA is the best example of this paradigm shift. In the past, the entire focus of primary education was less on mastery of competencies and more on passing this one-shot high-stake exam. The CPEA brings teaching, learning and assessment together in a seamless manner that uses assessment to improve learning.)

• We understand that learning is not an abstract academic thing – it is a multi-dimensional process that must involve understanding, thinking, doing, questioning and applying.

• The school, as the focal point of this activity, must become a place of energetic engagement, and excitement. In order for this to happen, the management of schools must be strengthened, our teachers must be better supported and parents and community must actively participate in the education process.

We applaud the work done by CXC in the implementation of its strategic plan 2020, because it provides a platform that supports where we should be going in education. The new generation subjects, especially in CAPE, in cutting edge areas such as Animation and Game Design; Logistics and Supply Chain Operations; Digital Media; Entrepreneurship; Financial Services; and Green Engineering, as well as the redesign of Agriculture, Tourism and Performing Arts open up new worlds of opportunity, for both young and old learners, and provides the human capital needed to diversify our economies.

The incorporation of CVQs and their alignment with the School Based Assessment (SBA) is a welcome step in giving greater value to the certification offered by CXC and is especially useful for the upgrading of our workforce.

My Ministry would like to work with CXC to undertake a deeper analysis of the 2018 results, so that we have a more incisive and textured understanding of performance in our education system. It is not enough for us to celebrate those who have achieved, without understanding why so many are not succeeding and putting the measures in place to guarantee that every learner succeeds.

We will need, for example, to see what percentage of the cohort of students who should be sitting exams actually sits them and what is the achievement profile. We need to see what percentage of students sitting the exams achieve acceptable grades in five or more subjects (which is widely considered to be the benchmark for decent wage employment).

This deeper level of analysis will challenge our existing notions of success and we will need to face its results squarely and take the necessary policy decisions boldly.

Over the years we have noted some positive trends in a number of subject areas, while there has been a plummet in others.

In closing, as Minister for Education, I wish to congratulate all participants in the 2018 CXC examination, whether CAPE, CSEC, CSSLC, CVQ or CPEA. Those who excelled, I commend you for your commitment and dedication, but, to those of you who did not perform as well, I take this opportunity to encourage you try again – do not give up.

It would be remiss of me not to thank the people who have made the education system work over the years. So, thank you to our dedicated principals, teachers, parents, ministry officials and all other stakeholders.

Finally, I wish to remind our visitors that Grenada, Carriacou and Petite Martinique is truly a paradise, so while you are here, please feel free to take full advantage and enjoy our Pure Grenada - the Isle of Spice. If you wish to extend this visit into a vacation, I assure you that you won’t regret it, once all is cleared with your supervisor.

I thank you.
While entries for most of the New Generation Subjects remain low, performance has remained above the average with the exception of Financial Services Studies Unit 1. Ninety-seven per cent of entries for Performing Arts Unit 1 achieved acceptable grades compared with 95 per cent in 2017. For Entrepreneurship Unit 1 there was a one-per cent improvement in performance, to 98 per cent from 97 last year. There was a 15-per cent improvement in performance on Logistics and Supply Chain Operations Unit 1 with 89 per cent of entries achieving Grades I-V, compared with 74 per cent in 2017. Performance on Digital Media Unit 1 and Tourism Unit 1 remained the same with 99 per cent and 94 per cent of entries achieving acceptable grades respectively.

For Performing Arts Unit 2, one hundred per cent of candidates achieved acceptable grades on all four options – Cinematic Arts, Dance, Drama and Music. For both Digital Media Unit 2 and Entrepreneurship Unit 2, 98 per cent of entries achieved acceptable grades, in 2017.

Performance on both Units of Agricultural Science improved slightly when compared with 2017, even though no Grade I was achieved in either Unit. For Unit 1, appropriately 89 per cent of entries achieved acceptable grades compared with 85 per cent in 2017, while for Unit 2, there was a one-per cent improvement with 87 per cent achieving acceptable grades compared with 86 per cent last year.

The New Generation CAPE Subjects were developed in response to the changing needs of Caribbean economies for high school graduates who are more prepared to work for themselves or create employment for others, than seeking employment. The subjects were designed with a strong link between education and the region’s economy. As a result, each NG subject contains an entrepreneurship component.

The first New Generation CAPE subjects were introduced in 2013/2014 and thereafter several other subjects have been introduced, the latest of which was Financial Services Studies, which was launched in 2016 in the British Virgin Islands.

The New Generation CAPE subjects are predicated on three philosophical underpinnings: UNESCO Pillars of Learning: learning to live together, learning to be, learning to do, learning to know; the tenets of the Ideal CARICOM Person: love life, emotionally intelligent, environmentally sensitive, democratically engaged, culturally grounded and historically conscious, multiple literacies, gender and diversity respectful and entrepreneurially capable; and Wagner’s Seven Survival Skills: Critical thinking and problem solving, collaboration, agility and adaptability, initiative and entrepreneurship, effective oral and written communication, accessing and analysing information, and curiosity and imagination.
Core Subjects

Of the three core subjects at CAPE, there was improved performance on Integrated Mathematics with 72 per cent of entries achieving acceptable grades compared with 67 per cent in 2017. Performance for both Caribbean Studies and Communication Studies, the other two core subjects remained the same – 96 per cent of entries achieved acceptable grades, compared with 97 per cent and 98 per cent in 2017 respectively.

Mathematics and Sciences

Performances on the Mathematics and the Science Units were mixed, but improved in most cases. For Pure Mathematics Unit 1, 70 per cent of entries achieved Grades I - V compared with 68 per cent in 2017, while for Pure Mathematics Unit 2, performance remained the same for both years, with 84 per cent of entries achieving acceptable grades.

For Applied Mathematics Unit 1, performance declined slightly with 92 per cent of entries achieving acceptable grades this year, compared with 94 per cent in 2017. The performance at the higher end of Applied Mathematics was extremely good with 43 per cent of entries gaining Grade Is and 17 per cent gaining Grade II’s. For Unit 2, performance improved with 92 per cent of entries gaining acceptable grades compared with 86 per cent last year.

Performance on both Units of Physics improved when compared with 2017. Ninety-five per cent of entries achieved acceptable grades in Physics Unit 1 compared with 93 per cent in 2017, while for Unit 2, the percentage of acceptable grades was 97 in 2018 compared with 95 in 2017.

While performance in Chemistry Unit 2 declined slightly, from 96 per cent in 2017 to 94 per cent this year, there was a corresponding two-per cent improvement in performance on Chemistry Unit 1 with 91 per cent of entries achieving acceptable grades compared with 89 per cent in 2017.

Performance on Environmental Science continues to be above the average and trending upwards in both Units. For Unit 1 this year, 96 per cent of entries accomplished acceptable grades, compared with 94 per cent in 2017, while for Unit 2 in 2018, 98 per cent of entries achieved acceptable grades, compared with 97 per cent in 2017.

Both Units of Biology continue to perform well, even though there was a decline this year. For Biology Unit 1, some 88 per cent of entries achieved acceptable grades compared with 92 per cent last year; while in Unit 2, just over 94 per cent achieved Grades I to V compared with 95 per cent in 2017.

Foreign Languages

Performance in the foreign languages – French and Spanish – was above the overall average; in addition, candidates scored well in the Grade I band for French Units 1 and 2 and Spanish Unit 1. Ninety-nine per cent of entries achieved acceptable grades on French Unit 1, compared with 97 per cent in 2017. Thirty-three per cent of entries achieved Grade I. For Unit 2, just over 94 per cent of entries achieved acceptable grades when compared with 97 per cent in 2017. Of the 94 per cent, 41 per cent of them achieved Grade I. For Spanish Unit 1, there was a four-per cent improvement over 2017 with 98 per cent of entries achieving acceptable grades compared with 94 per cent last year. Thirty per cent of entries achieved Grade I. For Unit 2, there was a marginal decline of two per cent, with 95 per cent acceptable grades this year compared with 97 per cent in 2018.

Business Subjects

In the business cognate, Management of Business returned the best results; however, both Units of Economics had the most improved performance. Ninety-four per cent of entries for Management of Business Unit 1 achieved acceptable grades this year, compared with 96 per cent in 2017; while for Management of Business Unit 2, 93 per cent of entries achieved similar grades compared with 97 per cent in 2017.

Performance improved on both Units of Economics, 86 per cent of entries for Unit 2 gained acceptable grades, and for Unit 1, 82 per cent of entries gained acceptable grades. Performance on Accounting Unit 2 remained relatively stable with 82 per cent of entries achieving acceptable grades, while for Unit 1, some 69 per cent of entries achieved acceptable grades.

Twenty Years of Growth

CAPE was first offered in 1998 in five subjects and replaced the traditional British A’ Level examinations in most sixth form schools and some community colleges across the region.

CAPE continues to grow in this its 20th year with 30,365 candidates writing CAPE Units this year compared with 29,582 candidates in 2017. There was also growth in the Unit entries. This year 120,372 entries were received compared with 118,237 entries in 2017.

Communication Studies continues to be the largest Unit at CAPE with 16,202 candidates entered this year. It is followed by Caribbean Studies with 12,198 candidates; Management of Business Unit 1 with 5312 candidates, Biology Unit 1 with 5058, and Pure Mathematics Unit 1, with 4445 candidates.

Of the New Generation CAPE subjects, Entrepreneurship Unit 1 is the largest with 3507 candidates, followed by Entrepreneurship Unit 2 with 2100 entries, and Tourism Unit 1 with 1149 entries.

Revised Associate Degrees

CAPE candidates who registered for the CXC Associate degree in 2016 will become the first cohort to receive the revised CXC Associate degree in 2018. The revised associate degrees include three core subjects: Communication Studies, Caribbean Studies and Integrated Mathematics for candidates not doing a CAPE-level Mathematics course.

The revised CXC Associate Degrees are offered in two broad areas with various concentrations and specialisations. They are Associate of Arts Degree and Associate of Science. The Associates of Arts degree has 12 specialisations, while the Associate of Science Degree has nine specialisations. Courses that make up the CXC Associate Degree are separated into three bands: compulsory, core and electives. Candidates are given between three and five years to complete an associate degree.
There was improved performance on all three natural science subjects at the May/June 2018 sitting of the Caribbean Secondary Education Certificate (CSEC) and an overall improvement in the percentage of entries achieving acceptable grades – Grades I - III. This year, 70 per cent of CSEC entries obtained acceptable grades compared with 66 per cent in 2017.

89 per cent in 2017, while 68 per cent of entries achieved similar grades for Principles of Accounts compared with 75 per cent in 2017. Seventy-one per cent of entries for Economics achieved acceptable grades compared with 79 per cent in 2017.

Eighty-four per cent of entries for Technical Drawing achieved acceptable grades, compared with 77 per cent in 2017. In the other subjects, performance was above the overall average; however, there was a two-percentage point decline on performance. For Textiles Clothing and Fashion, 77 per cent of entries gained acceptable grades this year compared with 75 per cent last year. For both Food, Nutrition and Health and Family and Resource Management, performance improved on two and declined on one. Seventy-one per cent of entries for French achieved acceptable grades this year compared with 70 per cent in 2017. For Spanish 69 per cent of entries gained Grades I-III compared with 67 per cent in 2017. Of the 69 per cent, just over 22 per cent achieved Grade I. Portuguese, offered for the second time this year, saw 71 per cent of entries achieving acceptable grades compared with 83 per cent in 2017 when it was offered for the first time.

Entries
This year 125,754 candidates wrote 33 subjects offered at CSEC, compared with 127,380 in May/June last year. Subject entries stand at 572,400 entries compared with 577,983 entries last year.

Mathematics continues to be the largest CSEC subject with 88,524 candidates, followed by English A with 81,702 candidates, Social Studies with 45,811, Principles of Business 34,947, and Information Technology 25,630 entries complete the top five largest subjects.
A general shift away from studying the Humanities, and History specifically, has regional academics and the Caribbean Examinations Council (CXC) worried that post-Independence gains will be undone by future generations across the region.

“The Caribbean Examinations Council (CXC) was concerned that a decline in historical literacy among the youth of our region is having a negative effect on the fabric of our societies and could, if allowed to continue, undermine more than forty years of effort by CXC to produce empowered citizens and promote nation building in the Caribbean,” expressed Professor Alan Cobley and Dr Janice Mayers of the University of the West Indies (UWI), Cave Hill Campus, St Michael, Barbados.

The academics raised this concern in their contribution to the “Perspectives on the Future of Caribbean History” panel in the opening session of the Association of Caribbean Historians (ACH) 50th Annual Conference on Monday, June 11 at the Errol Barrow Centre for Creative Imagination on the UWI, Cave Hill Campus, which was sponsored by CXC.

The co-presenters were speaking to the findings of a 2016 task force set up by CXC to investigate the reasons for the decline in entries in Caribbean History at CSEC and History CAPE levels.

Dr Glenford Howe of the UWI Open Campus and Dr Halima-Sa’adia Kassim of the University Office of Planning and Development, put forward that the decline in interest in History and wider Humanities subjects starts from primary school levels and is driven by society’s privileging of subjects deemed to be more financially viable and generally beneficial.

“In most areas enrollments have been declining, in the face of an increasingly antagonistic discourse about the relevance of history and the humanities relative to an emphasis on the sciences and technology, to graduate employability, and sustainable socio-economic development,” stated the co-presenters.

In his contribution to the panel, Dr Richard Goodridge, also of UWI, Cave Hill, emphasised that the study of history in the Caribbean, particularly African history, is important because “when we learn of the struggles and triumphs of our ancestors, we are likely to become stronger. More importantly, it emphasises the central issue of group identity and its link to the study of history.”

He also stated that history must be central to any plan for a programme of reparatory justice aimed at properly developing the people of the Caribbean.

“Reparations without history is analogous to erecting a building without firm foundations,” he added.

The ACH is committed to ensuring the future of Caribbean history teaching and learning remains an important part of the region’s development, particularly in many of our tourism-centred economies where history and heritage are becoming levers for economic development. ACH Vice President, Heather Cateau, Dean of Humanities at The UWI, St. Augustine Campus says “The data that was presented is welcome. However, there is need for not only a quantitative, but also a qualitative assessment so that policy makers can fully understand the current context and introduce the impactful changes that are needed. These changes must also take into consideration the current needs of the Caribbean and the mandate of The UWI to focus on the strategic areas of access, alignment and agility as we contribute to the next phase of Caribbean development.

The Deans of the Faculties of Humanities and Education at The UWI have been working toward this goal and we welcome contributions from other Units as well as from other universities to deal with this problem which is in fact an international one.”
1. ACCA is a globally recognised qualification

This isn’t just a claim dreamt up by a marketing department, it’s what nearly every student says excites them about studying ACCA, while for our members working across all the world’s continents is just a fact – ACCA is the most globally recognised accounting and finance qualification.

Employers all over the world trust ACCA, through the rigorous training of our students and members, to ensure their businesses operate at the highest international levels. Indeed, our qualifications are designed in close collaboration with international employers, so our students and members are trained to operate at the cutting edge of our fast-developing business world, capable of meeting challenges head on.

This also means that ACCA students and members command competitive salaries for performing incredibly varied and challenging roles across all industries. In fact, junior finance positions are in high demand, with salaries rising accordingly to attract professionals even before they’ve completed their ACCA qualification.

2. Success and security… whichever career path you choose

ACCA’s qualifications give people the ability to define their own career paths. Due to the wide-sweeping financial knowledge our qualifications provide, people studying with ACCA can work their way up the ladders of traditional businesses, from junior accountants and bookkeepers, to financial analysts, financial controllers and managers and to board level as CFOs.

But what is not so widely known are the great numbers of our members who reach executive level through non-finance departments, even to CEO. Some carve out careers in tourism, IT and analysis, while many work in the public sector or for NGOs.

And last but not least, given the holistic business training as well as the specific, technical financial teaching we provide, many of our members are part of the successful and growing wave of modern entrepreneurs, setting up their own dynamic accounting practices or innovative start-ups.

3. Skills for (everyday) life

It goes without saying that ACCA professionals have received top notch technical training, making them capable, from early on in their careers, of contributing in real-world business and finance situations. But more than this, we want our members to hit the ground running in whatever professional scenario they put themselves in, which means having skills that go beyond the technical and into the personal/professional – sometimes called soft skills.

Such skills are so important to employers these days, they can be the X-Factor when a business is selecting talent. Good communication, teamwork, leadership, being tech savvy, good ethics and problem solving are top of employers wish lists. And these are transferable to everyday life, as well as to future roles, whatever they may be.

4. Start ACCA at your level

Your son or daughter can start ACCA as early as they like, no prior qualifications necessary. If they’re keen to start their career journey fresh out of high school, no problem, there are thousands of schools offering ACCA all over the world. Even if university is not their thing, they could still earn a degree from Oxford Brookes University by studying ACCA. If they are interested in the university route, again no problem, they could even pass ACCA while at university.

5. A flexible qualification for modern students

If you think that gaining a qualification is all about blackboards, desks, pencils, notepads and spending all day in a classroom, think again, times are changing and we’re adapting. While traditional class-based study is still a very popular and valuable option, we have also endeavoured to make studying ACCA accessible to a wide, global and mobile audience.

We know that flexibility is increasingly desirable. We want people living in remote places, with no access to a school to have the opportunity to study ACCA and advance their dreams. We want people who work and/or have family commitments to fit study around their responsibilities. We want people who know they study better in the evening than during the day to be able to flexibly organise their studies.

That’s why your children can study ACCA full or part-time, in a school with one of our accredited tuition providers or via ACCA-X our online course platform. They can even sit nearly all of our exams online.

Your children are growing up in a fast-paced world. We want to provide them with options and choices so with your guidance they can confidently go forward into a rewarding and successful career.

Find out more about this exciting career path. Visit yourfuture.accaglobal.com
CXC Stakeholder ENGAGEMENT

Over the last three months CXC has been engaging with key stakeholders across the region, particularly, third and fifth form students, parents and employers. Teams from CXC met with stakeholders in Anguilla, British Virgin Islands, Dominica, St Kitts and Nevis, St Lucia and Trinidad and Tobago.

In addition, CXC hosted a one-day meeting with the Caribbean Association of Principals of Secondary Schools (CAPSS) on August 20 and a meeting with employers and human resources professionals from both the private sector and government on 28 September.

The Caribbean Examiner brings you a gallery of photographs from these stakeholder engagements.
CXC Stakeholder Engagement
Two Directors among NEW APPOINTEES

Over the past four months, CXC has made four important appointments, including two Directors and one Senior Manager, one Manager. The Caribbean Examiner magazine chronicles the three new appointees.

MR NICHOLAS ROCK
Senior Manager – Information Systems Department

Mr Nicholas Rock joined the staff of the Caribbean Examinations Council (CXC®) on 15 June 2018 as Senior Manager Information Systems Department, and is based at CXC Headquarters in Barbados.

Mr Rock is responsible for managing the Information Systems Department and the Council’s IT systems as well as supervising the work of the departments. He is also responsible for providing technical advice to the Council on IT issues and by extension to institutions and member countries.

Mr Rock has over 19 years’ experience in the IT industry. He is a Certified Virtualisation Expert 4.0 and a Certified Information System Security Professional (CISSP). He possesses a Master of Science in Project Management and Evaluation, a Bachelor of Science (Upper 2nd Class Honours) from The University of the West Indies Cave Hill Campus, and a Certificate in Business Continuity Management for Advanced Professionals from the Disaster Recovery Institute International.

Mr Rock has an extensive knowledge of databases including both Microsoft SQL and Oracle, VOIP, Records Management, SAP ERP, CRM, Business Intelligence and Enterprise Portal. He also has experience in various LAN/WAN/WiFi/WLAN, satellite and fibre optic communications and security protocols.

MS SUSAN McALLISTER
Manager, Measurement and Evaluation

Ms Susan McAllister joined the Council as Manager, Measurement and Evaluation, Examinations Development and Production Department effective 1 June 2018. She possesses a Master of Education in Testing, Measurement and Evaluation and a Bachelor of Science in Management Studies from The University of the West Indies, Cave Hill Campus. Ms McAllister also possess a Diploma in Education from Erdiston Teachers’ Training College, Barbados.

She is no stranger to CXC as over the last seven years, she has been a resource person assigned to the Examining Team for CSEC Principles of Business, as well as a recent assignment as an Intern in 2017, attached to the Examinations Development and Production Department.
WAYNE WESLEY, PhD  
**Director of Operations**

Dr Wayne Wesley, a Jamaican national, joined the staff of Caribbean Examinations Council (CXC®) on Friday 1 June 2018, as Director of Operations, Examination Services, he is based at CXC Headquarters in Barbados.

As Director, Dr Wesley assists in providing strategic leadership and management to the organisation. In addition, he oversees the planning, development and operation of CXC’s core examination services to our partners/stakeholders regionally and internationally.

Dr Wesley is passionate about education and learning and development having spent the last 24 years in both the education and training sectors at the national, regional and international levels. His professional experience spans industrial engineering, technical education, consultancies, strategic leadership and executive management. Dr Wesley served as Executive Director of HEART Trust/NTA and Chairman of Caribbean Association of National Training Authorities (CANTA).

Dr Wesley possesses a Doctor of Philosophy in Industrial Engineering from Florida State University, a Master of Science in Manufacturing Systems from Southern Illinois University, a Bachelor of Education in Industrial Technology with First Class Honours from the University of Technology (UTech) Jamaica, a Post Graduate Diploma in Financial Services Management from Jamaica Stock Exchange e-Campus, and a Level 8 Certificate in Strategic Direction and Leadership from the Chartered Management Institute, United Kingdom.

A Fulbright Scholar, Dr Wesley has published and presented several research papers in international peer reviewed journals and at conferences. He also served on the Editorial Review Board for the Journal of Quality Engineering.

MRS SHARON ARMSTRONG-MULLAH  
**Director of Corporate Services**

Mrs Sharon Armstrong-Mullah, joined the staff of Caribbean Examinations Council (CXC) in December 2012, as Senior Assistant Registrar – Finance and Office Management, now termed Financial Controller. On 1 July 2018, Mrs Armstrong-Mullah was promoted to the role of Director of Corporate Services, she is based at CXC Headquarters in Barbados.

As Director, Mrs Armstrong-Mullah has oversight for the direction and management of the Finance and Office Management, Human Resource and Information Systems Departments. This includes Corporate Management, Legal and Statutory Matters, Leadership and General Management and Financial Planning and Management.

Mrs Armstrong-Mullah’s successful handling of her previous portfolio as well as her varied background in the finance, banking and telecommunications sectors in both private and public corporations augur well with her new role. She implemented updated procedures to govern fundamental aspects of the Financial Accounting section in response to new standards and has also defined and championed implementation of new processes.

Mrs Armstrong-Mullah is a Fellow of the Association of Chartered Accountants of Barbados, she holds a BSc in Accounting from The University of the West Indies, Cave Hill Campus.
Dominica hosted the first private educational institutions fair on Wednesday 15 and Thursday 16 August outside of Jays Bookstore on Independence Street, Roseau. The fair featured the three private schools in the Nature Isle offering CXC qualifications: Business Training Centre, Lead Institute and Academix School of Learning.

A brief opening ceremony was held on the first day and was addressed by representatives of the three institutions, Ministry of Education representative and Mr Cleveland Sam, Public Relations Manager of CXC. The opening ceremony was carried live on Kairi FM radio station and attended by several media houses.

“Dominica is actually benefiting as the first CXC Participating Country from CXC’s private education institutions initiative that CXC started two years ago,” Mr Sam said while addressing the opening ceremony. “As part of that initiative we conducted focus groups in Jamaica, Guyana and Trinidad and Tobago with private institutions in terms of what their needs are, how can CXC better serve them as private institutions.”

One of the recommendations from the focus group sessions was for CXC and ministries of education to host joint marketing and promotional activities.

“We believe that these institutions play a vital role in their countries to provide access to students from all walks of life, both adults and secondary school students, based on what the institutions are offering,” Sam further stated.

Over the two days of the fair, potential learners were able to ascertain information about the various CXC subjects offered by each institution and many also registered on the spot for classes which started in September.
Embrace Learning
with resources trusted by teachers everywhere.

Supporting you with established, comprehensive and student-friendly resources.

Contact your local Hodder Education Representative for more information or to place your order. Visit www.hoddereducation.com/Caribbean
WILL YOU SUPPORT HER DREAMS?

The Caribbean Certificate of Secondary Level Competence (CCSLC) is more than just a certification. It is a gauge by which you can measure your children’s readiness for CSEC and a stepping stone that takes them closer to fulfilling their dreams.

Will you help them make the moves towards personal and professional development? Say #IWILL and visit cxc.org/examinations/ccslc today!

*CXC is the trademark of the Caribbean Examinations Council.