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EXPLORING THE POTENTIAL OF IMPLEMENTING E-LEARNING PRACTICES AT THE UNIVERSITY OF GUYANA

KERWIN ANTHONY LIVINGSTONE
EXPLORING THE POTENTIAL OF IMPLEMENTING
E-LEARNING PRACTICES AT THE
UNIVERSITY OF GUYANA

by

Kerwin Anthony Livingstone

A Supervised Research Project (SRP) submitted as partial fulfillment
of the requirements for the degree of
Master of Education (M.Ed.)

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School of Education
Faculty of Arts and Law
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2014
DECLARATION OF ORIGINALITY

Declaration by the Candidate

I, Kerwin Anthony Livingstone, declare that this thesis is my own work and that, to the best of my knowledge, it contains no material previously published, or substantially overlapping with material submitted for the award of any other degree at any institution, except where due acknowledgement is made in the text.

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Declaration by the Supervisors

As supervisors of the candidate’s supervised research project, we certify that the above statements are true to the best of our knowledge.

Name: Mrs. Shikha Raturi, Principal Supervisor

Signature: ____________________________ Date: 11/9/2014

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Signature: ____________________________ Date: 11/9/2014
ACKNOWLEDGEMENTS

I would first like to thank the Almighty and All-powerful God who I serve. Since my arrival in Fiji, up until this point, I have seen His hand moving in my life. I have witnessed His leading in my postgraduate studies at the University of the South Pacific (USP) – Postgraduate Certificate, Diploma, and Master’s Programme – and for this I am truly humbled.

I must commend the scholarship agency, Caribbean Pacific Island Mobility Scheme (CARPIMS), funded by the Education, Audiovisual and Cultural Executive Agency (EACEA) of the European Commission. These prestigious bodies have provided me with the means to leave my country and to come to study comfortably in this Pacific island country (PIC). From the depths of my heart, I would like to thank all of the functionaries who have made my academic achievements in Fiji possible.

My mother, Yvonne, is one of my rocks. She is the reason why I am here in Fiji, and I owe her everything. It is she who has been supporting emotionally, throughout this entire process, even those times when I felt like abandoning everything. My mom continues to be the person to whom I can go and discuss anything. She has always been confident in my abilities, knowing very well that I would successfully complete my studies here at USP. She deserves to be praised as she is a real mother.

My very close friend, Aurdell, needs to be commended for her wherewithal and her steadfastness. Even from a distance, being all the way in my country of origin, Guyana, she has helped me through this process in incredible ways, especially during those times when I fell ill and did not feel like continuing with my studies. She was there with me for prolonged hours on Skype, trying to keep me calm, helping me to focus and to realise the reason why I came here. She has also been the one to cheer and share in my academic achievements here at USP. That cannot be forgotten or ignored.

It gives me great pleasure to thank the USP for having allowed me to enter into the University to study at this postgraduate level. I would also like to thank all those
University staff members with whom I have interacted, those who have assisted me in one way or another. It has been a good experience and I have been able to grow to understand and appreciate the cultural differences and the workings of this Higher Education Institution (HEI). It would be thoughtless of me not to thank the USP for having recognised my academic achievements by awarding me the Gold Medal and Mechanical Services Prize for the student with the best overall results in a Postgraduate Diploma. My sincerest gratitude is hereby tendered.

I would like to thank the staff of the University of the South Pacific International Office (USPI) for their welcome and support throughout this university experience. It all began even before I arrived here in Fiji, and the camaraderie has been sustained up until this moment. The staff members have been very cordial, caring and co-operative in all those matters that were either personal or academic. For this, I must publicly thank them for making me feel at home and a part of the University.

Mrs. Shikha Raturi, the Principal Supervisor for my Master of Education (MEd) Supervised Research Project (SRP), cannot be excluded. In fact, it was because of the course that she facilitated, ED403 TeachingOnline: Pedagogies and Practices, one of the core courses of the Postgraduate Diploma in Education Tertiary Teaching (PGDETT), that my passion has grown for E-learning/Technology-Based Education, my area of focus for this MEd SRP. Her sound advice and suggestions have enriched me as a person. Her patience, diplomacy, professionalism, care and concern are to be commended and eulogised.

My Associate Supervisor, Professor Dr. Akhila Sharma, has been a very great inspiration to me. His excellent pedagogical practices have helped me to grow to love the profession even more. Under his guidance and tutelage for the Postgraduate Certificate in Tertiary Teaching (PGCTT), ED 401 Teaching and Learning in Higher Education, and ED402 Curriculum Design and Evaluation in Higher Education, I have managed to strive for quality in my pedagogy.
I would like to thank the University of Guyana (UG), my current employer, for having granted me study leave to come to the USP to engage in postgraduate studies, as well as giving me the approval to survey the University community. Such actions will not go unnoticed. Further, a heartfelt gratitude is extended to the UG Administration, Teaching Faculty, and Students, for the time they took to complete the online survey which gave the data I needed to analyse for this research. All those individuals from the UG who have assisted me in one way or another, towards this end, do know that I am deeply moved. Your assistance throughout this process is duly recognised and profoundly appreciated.

Finally, it is always good to have friends and colleagues who strengthen and sustain you, come what may. It would, naturally, be insensitive of me to leave out such individuals like Tracy, Samantha, Allison, Terrence, Ryon, Michaela, Mark, and Andrew, among others. Thank you all very much for the kind words and sentiments expressed towards me throughout this journey.
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ABSTRACT

The University of Guyana (UG), up to the present time, continues to embrace a traditional learning and teaching approach, where all educational practices, to a great degree, are outdated. Face to face (F2F) contact is the only mode of instructional delivery. Further to this, the conventional Distance Education (DE), via the print-based correspondence mode, is still the current trend. Such a method only favours but a handful of students. As has been revealed by research, such an approach, even if it might engage students, is still teacher-directed and rejects an emancipative, student-centred approach to learning. E-Learning, however, is being universally accepted as the instructional delivery mode which fosters student engagement and emancipation.

Considering the afore-mentioned, the present study focuses on Exploring the potential of implementing E-Learning practices at the University of Guyana. To this end, the theoretical and conceptual foundation of this study hinge on literature from the theories of (1) Constructivism [Social Constructivism], (2) Transactional Distance [Independence and Autonomy; Interaction and Communication] and, (3) Connectivism, and literature from other important areas in Education which are (4) Changing Scene in Higher Education, (5) Accessibility and Equality in Education, (6) Information and Communication Technologies, (9) E-Learning, (8) Distance Education, (9) Web 2.0 Technologies, (10) Quality Learning and Teaching, (11) Education for All, and (12) Educational Leadership. The conceptual framework is grounded on the afore-mentioned.

In the application of the conceptual framework, this research explores the use of integrating technology into the educational practices of the University, as a means of addressing the afore-mentioned theories and areas in 21st century learning and teaching.

The methodological approach is drawn from the mixed method research literature. In relation to the aim, objectives and research questions of this work, three surveys about E-Learning were constructed, through a purposive sampling technique, aimed at UG Students, Teaching Faculty and Administration. Subsequent to their design, they were
executed with a view to highlighting, through respondents’ answers, the practicality of espousing Technology-Based Education for the Higher Education (HE) institution. The data was analysed empirically, and by means of data triangulation.

The findings illuminate that the UG students and staff (both academic and administrative) are, by and large, ready for E-Learning. More precisely, these results, in conjunction with the research questions, reveal that students are generally ready for E-Learning. In addition to these findings, other critical ones emanating from the analysed data are the following: (1) Even though some students are more pleased than others about the quality of education, the greater part of them confirm that it can be further enhanced; moreover, they are in accord that technology is the means to improve the learning-teaching quality. (2) Teaching Faculty and Administrators share the view that there is room for further development, and that E-Learning would be embraced and implemented at the UG, once the key issues are tackled.

Taking into consideration the above, the University has a valid opportunity to do everything in its power to diversify its pedagogical practices so that the students’ learning experiences would be significant. The UG Students, Teaching Faculty and Administration are generally prepared for this new educational initiative, and recommendations have been made for this instructional delivery mode to be adopted and incorporated into the learning-teaching process.
INTRODUCTION

Decades ago, all learning and teaching was centred on the traditional approach which espoused teacher-directed pedagogical practices (Smith, 2000). In this scenario, a body of academic, theoretical and discipline-specific knowledge was provided for students to learn. Such pedagogy did not lend itself to innovation. Those students who were able to attend the university campuses benefitted from traditional F2F sessions, while those who could not make it to campus profited from traditional DE print/correspondence.

With the passage of time, there were fervent calls for educators to rethink their pedagogical methods used to maximise student learning, since there was a growing concern that students were not adopting deep approaches to learning (Biggs & Tang, 2011). There was consensus that the traditional approach was no longer adequate (Prevedel, 2003) to effectively address and improve student learning outcomes. As a result, a number of dramatic changes began to occur in tertiary learning and teaching, beginning from the year 2000. To this end, Biggs and Tang (2011) reveal that “Since 2000 there have been dramatic changes in the nature of higher education. It is not just that participation rates are higher than ever [...] but that these and other factors have altered the main mission of higher education and modes of delivery” (p. 3). Since then, there has been a clamour for teaching and learning effectiveness, which has intensified over the years. It is felt that HE learning and teaching must move away from teacher-centred strategies and embrace student-centred approaches, due to the increased number of tertiary-level students who possess different learning abilities.

With the advent of technology, one of the pedagogical methods to have emerged is E-Learning. E-Learning is one significant way to cater for diverse learning styles (Laurillard 2007, 2008a). It is all about getting students to move away from the full F2F modality, in favour of a virtual environment where each and every one would be able to work at one’s own pace. Brown (2005) establishes that since the introduction of Internet-based education, there has been a rapid improvement in student learning outcomes.
Education has a role in preparing people for work, and that must affect both what and how students learn. Technology-based environments can provide alternative ways of offering a more authentic learning context. Technology-Based Education has paved the way for a reformation of pedagogical practices in tertiary learning and teaching. Research done in E-Learning has established that it is a powerful means for students to engender significant educational experiences. It is a means of giving students autonomy of their own learning, a vital component absent from the traditional approach. It is oriented towards the role of technology to enable new types of learning experiences and to enrich existing learning scenarios. “One of the strongest arguments for bringing new digital technologies into schools and other educational institutions is that, by doing so, we would trigger pedagogical innovation” (Laurillard, Oliver, Wasson & Hoppe 2009, p. 290).

One of the principal uses of digital technologies in educational practices is to enhance intellectual expressiveness and creativity: helping the students in their appropriation of the world, with a special emphasis on their intellectual development. Laurillard (2008a) establishes that it is therefore essential for the education system to incorporate new digital media as tools for intellectual expression and production.

It is claimed that E-Learning overcomes many drawbacks that are inherent to traditional classroom teaching, especially its lack of flexibility in the use of resources (Lam & Bordia 2008; Williams & Williams, 2010). Goold, Craig and Coldwell (2007) indicate that this type of online learning environment enables a greater number of students of diverse educational and cultural backgrounds, as well as of modes of study, to come together within the one virtual classroom.

It is important to note that learners are being prepared for a world in which technology is increasing the speed of innovation and change, but they are being prepared by education systems that are not oriented towards rapid change in the way they are managed and operated. Technology-Enhanced Learning (TEL) could help education
adapt to a world that is rapidly changing in response to technology (Laurillard, 2012). Owing to existing evidence of the transformative power of Information and Communication Technologies (ICTs) across the world, the fact that it will be the major technological innovation for HE in this millennium and beyond is irrefutable.

In relation to the above, the UG has been specifically chosen as this study’s focus primarily because it is the University at which the researcher is employed. The researcher is very cognizant of the current learning-teaching situation at the UG, which is still heavily hinged on the traditional approach, and which does not embrace student learning diversity. The researcher was a student at this institution from 1999-2003. The researcher became a member of the Teaching Faculty in 2009, yet the didactic scenario has remained the same. Given this is the age of technology, and many Universities are integrating it into the pedagogical process, the researcher is convinced that the pedagogical scenario at the UG would be boosted significantly if it were to also integrate E-Learning practices.

The UG is cognizant of these rapid technological changes around the world, regarding tertiary learning and teaching. Though the UG is aware of these imminent changes, implementation is extremely slow. E-Learning is not yet endorsed as an alternative instructional delivery mode. There is no visible innovation to curriculum and instruction. Teacher-centred strategies are still current. The delivery of quality education (QE) at the UG is still a very big issue, and this is impeding the promotion and enhancement of learning that matters.

Since E-Learning is achieving success across the world, at various Universities, it is imperative for the UG to move in this direction, with a view to embracing a more emancipatory approach to student learning. According to Hattie (2009), when students are given autonomy of their own learning and learning materials are adapted to suit their diverse learning styles and abilities, student learning outcomes will be maximised.
Bearing in mind the afore-mentioned, this study hinges around *Exploring the potential of implementing E-Learning practices at the University of Guyana*. The background and context of the study is outlined, with a view to providing a clear picture of the situation surrounding the delivery of tertiary education in Guyana. Then, the research questions, aims and objectives are delineated. The literature review begins with a discussion on the theoretical framework of this study, followed by a presentation and discussion of some of the most important themes in current pedagogical practices, and concludes with the conceptual framework for this research. Next, the methodology of the study is described in sufficient detail with the aim of allowing the reader a panoramic view of the procedures involved in the execution of this research. Subsequently, the data are then presented, analysed and discussed and judgments are made about the study conducted. Finally, conclusions are then drawn from the information presented. The limitations and implications of the study are highlighted, and recommendations are made for the UG to adopt E-Learning as the way forward in this age and beyond.
CHAPTER 1
BACKGROUND AND CONTEXT

Guyana, known as the ‘land of many waters’, is the only English-speaking country found in the continent of South America. It is bordered by Venezuela, Brazil and Suriname. It is home to a people of diverse ethnicities: African, East Indian, Amerindians, Chinese, Portuguese and Europeans. This country occupies an area of 216,000 km² and is home to a population of approximately 780,000. While 90 percent of the population occupies the narrow and relatively easily accessible coastal plain, the remaining population is sparsely distributed in the mountainous and forested hinterland which, more than any other part of the country, is affected by limited trained human resources. Figure 1 below depicts a map of Guyana with its neighbouring countries.

Figure 1. Map of Guyana showing neighbouring countries
[Adapted from Boodhoo, 2012]
In educational terms, limited trained human resources will naturally affect the provision of quality education delivery. This, together with the geography of Guyana, is seen as a barrier to Education For All (EFA). As noted by Anderson and Thomas (2001, p. 161), “Guyana’s topography combines with her population distribution pattern to pose immense problems for the provision of quality face-to-face education for all Guyanese”.

Just about a decade ago, an added problem to the provision of quality education was the small budget available for educational development. Confronted by these challenges, the nation had turned to print-driven DE as an alternative mode of educational delivery (Anderson & Thomas, 2001). The distance modality allowed for the delivery of a standardised educational programme to coastal and hinterland communities. Nevertheless, were it to facilitate equitable opportunities for education, it would require the provision of suitable support services to help students overcome the challenges presented by distance study and any resource limitations that exist in their communities.

Even though the situation has changed somewhat, within recent years, there are still major issues with quality education delivery, affecting the overall functional literacy rate. Moore (2012) reveals that approximately 80% of the young population has low to moderate levels of functional literacy, and the overall functional literacy rate in the country is about 50%. Due to this, the Government is taking active measures to address education quality at all levels.

In terms of tertiary level education, the UG is the only HE institution in Guyana. It is located on the coast of the capital city, Georgetown. Established in April 1963, the University currently has a student population of approximately 6,300 students with a yearly intake of about 1,500 (UG Registry, 2014). The staff population is approximately 924 (UG Personnel Office, 2014). There are 14 Statutory Officers who comprise UG’s core leadership (UG website, 2013), 514 lecturers (UG Personnel Office, 2014), and the remainder, other University staff members.
The UG has two campuses – the Turkeyen Campus and the Berbice Campus (UG website, 2013). The Berbice Campus, opened in November 2000, was established to provide university education access to persons in that region who were unable to attend the Turkeyen Campus, which is located in the capital city, Georgetown. Owing to the lack, or unavailability, of skilled Teaching Faculty in the Berbice region to deliver its programmes at the Berbice Campus, lecturers from the Turkeyen Campus would normally travel there to take care of these needs. Figure 2 below shows a map of Guyana indicating the location of the UG’s two campuses. The Turkeyen and Berbice Campuses are located at 1 and 2 on the map, respectively.

*Figure 2. Map of Guyana showing the UG’s two campuses*

[Adapted from Nations Online, 2014]
The University has a web page, which is manned by its Centre for Information Technology (CIT). Through this page, courses and programmes are promoted and information on its various activities is provided to interested stakeholders. To date, the University does not deliver any virtual programmes, even though it is quite cognizant of the proclivity of ICTs in allowing it to envelop a much larger variety of customers: students.

In addition to the above, the University has six Faculties – Agriculture and Forestry; Education and Humanities; Health Sciences; Natural Sciences; Social Sciences; Technology; – two Schools – School of Environmental Sciences; School of Professional Development; – and one Institute – Institute of Distance and Continuing Education (IDCE). The IDCE, an arm of the University of Guyana, offers a number of courses via distance learning mode (UG website, 2013; IDCE UG, 2013a).

Through the introduction of the National ICT Development Strategy, ICT has become a familiar name in Guyana (National ICT Development Strategy, 2006). Many educational institutions, both secondary and tertiary, are using computers, in some form, to aid learning. Added to this, Guyana has its own fibre optic cable system that has been servicing its citizens for over five years. ICT is also prevalent at the UG, as it possesses its own CIT which monitors the University’s intranet system (UG Strategic Plan 2009-2012).

One of the four goals in the UG Strategic Plan (2009-2012) is “To achieve higher quality learning and teaching aligned with expanded national needs, especially in science and technology”. Regrettably, the UG is not fulfilling its mandate. The University’s curriculum has not been modified in over 30 years. The only existing pedagogical method is the traditional F2F interaction, where the teacher is the ‘sage on the stage’, and where students are expected to take in the ‘sagely knowledge’ like sponges. From personal observation, in other words, all learning is teacher-centred. There are no innovative technologies being used to promote diversified learning and teaching. This is the present state of affairs that plagues this institution of higher
learning. There is a dire need for modernisation, through quality enhancement, to embrace creativity, application and life-long learning. In a world where technology is taking centre-stage, where the majority of students are computer literate and technology savvy, the University is left with no other option, if it intends to remain credible and authentic, but to integrate technology in education, with a view to delivering high-quality 21st century HE.

Another very important matter arising from the pedagogical situation at the UG is that students in outlying regions cannot attend the University, which is located in the capital region. From personal observation, many of them are denied a quality education due to this problem. Some of them who do come to the capital city usually abandon their studies - due to family and other issues - and return from whence they came (Anderson & Thomas, 2001; National ICT Development Strategy, 2006). DE at the UG does not meet the needs of students throughout the country, as it lacks diversity. DE correspondeces do not always arrive on time in hinterland areas, and this frustrates student learning.

The development and production of the print-based (home study) course material for the ‘Mathematics’ module series 1-10, ‘English’ module series 1-4, ‘Supervisory Management’ module 1-2, and the ‘Principles of Accounts’ 1-2, were made possible through the support of the Commonwealth of Learning and the Canadian Overseas Development through Education from 1992 to 2002. According to records in the DE Department, these courses were very popular in regional communities, the hinterland and riverain areas from 1992 until 2006. In 1996 alone, the enrolment in the DE programme was six hundred and five (605) (IDCE UG, 2013b).

There was a decline in student enrollment from 2000. The average enrollment for ‘English’ from 2000 to 2006 was about 50 students per year for Georgetown, and about 60 (combined) from the three regional centres (Linden, Anna Regina and New Amsterdam). The average enrollment for ‘Mathematics’ from 2000 to 2006 was about 40 students per year for Georgetown, and about the same number for the centers
combined. ‘Supervisory Management’ had an average enrollment of about 60 students per year from 2004 to 2007 for Georgetown and about 40 for the centers combined (IDCE UG, 2013b).

There was also a decline in the activities of the Department after 2005, due to the fact that several staff members migrated and the positions they vacated were not filled (and are still vacant). This hampered the activities of the DE Department, and saw a further drop in student enrollment (IDCE UG, 2013b). A small amount of students in region 5 and 6 still show an interest in the ‘English’, ‘Mathematics’ and ‘Supervisory Management’ print-based/home study courses and they enroll for this through IDCE’s New Amsterdam Centre. Students at Linden still show an interest in ‘Supervisory Management’ and enroll for this through the IDCE Linden Centre (IDCE UG, 2013b).

Bearing this in mind, some courses were offered online, from the year 2007, through the IDCE, and these were ‘Project Management’, ‘Human Resource Management’, ‘Supervisory Management’, ‘Online Course Design and Development’, ‘Office Administration’, ‘Principles of Accounts’ and ‘Using Moodle’. The Learning Management System (LMS) that was used was Moodle. These courses were offered as an experiment to test the response of local students to online courses. The responses were good for ‘Project Management’, ‘Supervisory Management’ and ‘Human Resource Management’. ‘Project Management’ and ‘Supervisory Management’ had an average enrollment of about 30 students per course and ‘Human Resource Management’ had an average of 25. The other courses were discontinued because students did not show much interest in them. The enrollment for these courses was below 10 students. However, due to the continued poor responses from students, caused by a lack of confidence with the LMS and such an instructional delivery mode, the offering of online courses ceased in the year 2011 (IDCE UG, 2013).

Though a few E-Learning workshops have been held for Teaching Faculty, there is no evidence of the University of Guyana adopting an E-Learning strategy for the HE institution. Some efforts are being made by lecturers to use ‘web-facilitated learning’
(Allen & Seaman, 2006; Buzzetto-More, 2008): some lecturers utilise the Internet - Facebook, Email, and WordPress, among others - in their pedagogical practices, to provide information on lectures, assignments and other materials relevant to particular courses taught by them. There is a felt need to sensitise the UG that there cannot be ‘business as usual’, and that it is the responsibility of this HE institution to do everything in its power to improve student learning outcomes, considering student learning diversity.

The UG is very much aware of the influence of E-Learning in university education. Guyana, despite being located in the continent of South America, is a part of the Caribbean Region, due to its proximity to the Caribbean Island Countries (CICs); by virtue of this, it is a member of the Caribbean Community (CARICOM). The Caribbean Region has a regional University which is the University of the West Indies (UWI). “Established in 1948, the UWI is the largest and longest standing higher education provider in the English-speaking Caribbean” (UWI website, 2013). There are three main campuses: the ‘St. Augustine Campus’ in Trinidad, the ‘Cave Hill Campus’ in Barbados, and the ‘Mona Campus in Jamaica’. These are all CICs. The UWI has an open campus as well, called the UWI Open Campus (UWI Open Campus, 2004-2013).

The UWI Open Campus offers multi-mode teaching and learning services through virtual and physical site locations across the Caribbean region. There are currently 42 site locations of the Open Campus in the region, serving 16 countries in the English-speaking Caribbean. The Open Campus has developed a unique approach in the Caribbean region to enhancing the student experience in innovative continuing and professional education, undergraduate, postgraduate and continuing education study programmes and courses by distance, blended, online and face-to-face learning modes (UWI Open Campus, 2004-2013).

The latest research at the UG indicates readiness of student and faculty for some form of E-Learning (Gaffar & Singh, 2011; Gaffar, Singh & Thomas, 2011). While the UG, based on this research, is ready for some form of E-Learning, it is not yet ready for fully
online courses and programmes, since it is still in its embryonic stage, regarding technologies in education. Could *blended learning* be an option for UG (Garrison & Kanuka, 2004; Sheridan, 2009; Raturi, Hogan & Thaman, 2011a; Raturi, Hogan & Thaman, 2011b), considering the changing needs of today’s learner in Guyana? As earlier highlighted, the UG is still offering DE in the traditional print/correspondence form, and this needs to be tailored to suit today’s educational context. Consequently, there is a need to offer courses and programmes via the distance and flexible learning (DFL) modality, in order to promote *accessibility, equal opportunity, and student learning diversity*, endorsing EFA.

Presently the UG’s Vice Chancellor is focusing on moving the University towards offering some E-Learning courses, as of September 2014. Two courses offered by the IDCE- 031 Proficiency in Physics and 031 Proficiency in Mathematics - are being considered (IDCE UG, 2014). It is still unclear what will be the specific instructional delivery mode.

The Open Education Programme (OEP) Unit of the UG is a new one that is hoping to offer four first degree awarding programmes: ‘Mathematics & Physics’, ‘Computer Science & IT’, ‘Criminology and Psychological Studies’, and ‘Environmental Studies’. The overarching vision is to enable the UG to create opportunities for Guyanese who would not be able to benefit from the F2F mode that it currently provides [due to factors of distance from Georgetown, and for those currently working within or far from Georgetown] (UG/OU Report, 2013). The specific mode of instructional delivery is yet to be determined.

Figure 3 below is a brochure of those online degrees to be offered from September 2014, courtesy of the UG.
In order to actualise this purpose, the UG is working with the Open University, UK, to produce course materials, and so forth. It is envisaged that the programmes will be launched in September 2014. Each of the 10 regions of Guyana will have study centres. Four coordinators are to be appointed for each of the programmes. Details of the programmes are currently being fine-tuned. In addition, other administrative structures and processes—regulations, fees, among others—are being put in place. It is vital to state that the UG will award the degree(s), in collaboration with the OU, UK. Critical to note is that fact that the Guyana Government is in full support of the programme (UG/OU Report, 2013).

Additionally, the Faculty of Education and Humanities (FE&H) of the UG has begun training sessions in the use of Moodle for Teaching Faculty in that Faculty, since it intends to officially launch the use of Moodle in Sept 2014. Though it is still unclear what will be the specific instructional delivery mode, the idea proposed is for teaching
faculty to start uploading course outlines, lecture notes, videos, and so forth, so that both students and Teaching Faculty can become familiar with this LMS (FE&H, 2014).

Online education is quickly becoming a household name in HE institutions (Lai, 2011; Laurillard, 2012), and the University must see itself challenged to move in this direction.

For this research, the aim, specific research questions, and objectives are the following:

1.1 Aim of the Study
The aim of this study is to:
- Explore the potential of using technology in educational delivery and its implementation at the University of Guyana

1.2 Specific Research Questions
The specific research questions of this study are the following:
- Are students ready to embrace Technology-Based Education?
- What form of E-Learning do students desire?
- Is it feasible to establish an E-Learning programme at the University of Guyana?

1.3 Objectives of the Study
The objectives of this study are to:
- Analyse student satisfaction of current pedagogical practices at the University
- Investigate the use of technology in educational practices at the University
- Establish the form of E-Learning for University students
- Determine the viability of implementing E-Learning at the University
- Recommend Technology-Based Education for tertiary learning and teaching
CHAPTER 2
LITERATURE REVIEW

The literature reviewed for this research, which immediately follows, hinges around (1) the theoretical framework of this study; (2) some of the most important areas to be considered in 21st century tertiary learning and teaching: Changing Scene in HE, Accessibility and Equality in Education, Information and Communication Technologies, E-Learning, Distance Education, Web 2.0 Technologies, Quality Learning and Teaching, Education for All, and Educational Leadership; and (3) a conceptual framework of the study. These concepts are discussed with a view to shedding light on the need for improved pedagogical practices in HE contexts.

2.1 Theoretical Framework of the Study

One of the most important areas in Education is learning and teaching, simply because all that is done in the educational institution has the objective of ensuring that instruction is effective and that students are able to maximise their outcomes. Lunenburg & Irby (2006) affirm that the goal of education is learning, and the vehicle used to achieve that goal is teaching. It is primarily concerned with what students learn and how they learn what they are supposed to.

Learning theories guide the practice and research of education by trying to explain how people learn (Simonson, Schlosser & Hanson, 1999; Garrison, 2000). In relation to the above, in order to improve learning and teaching, there must be an existence of theories to guide educational practice and research and to determine the best kinds of pedagogical approaches to integrate into the instructional process. These theories are important because they directly affect the practice of the field and, consequently, educators can have a strong foundation for their successful practices by fully understanding the emergence and development of the learning theories.

The learning process is a highly complex system; it’s not a linear process but rather cyclical. As this process continually changes depending on a person’s experiences and surroundings, instructional designers and educators face a demanding task when
producing meaningful and challenging learning experiences for all learners (Kop & Hill, 2008).

Bearing in mind the above, theories also orient this present study on ‘Exploring the potential of implementing E-Learning practices at the University of Guyana’. Those theories selected are (1) constructivism [social constructivism], (2) transactional distance [independence and autonomy; interaction and communication] and, (3) connectivism. Each of these will be discussed briefly, in the light of this study, justifying their necessity for quality educational practices at the University of Guyana.

### 2.1.1 Constructivism

In recent times, there has been a shift to constructivism (Ally, 2004). Constructivist theorists (Piaget 1928, 1932; Vygotsky 1930; Dewey 1929, 1938; Dewey & Bentley, 1949; Bruner 1960, 1973; Jonassen, 1999) claim that learners interpret information and the world based on their personal reality, and that they learn by observation, processing, and interpretation, and then personalise the information into personal knowledge. In other words, learners learn best when they can contextualise/situate what they learn for immediate application and to acquire personal meaning. Constructivists see learners as being active protagonists of their learning (Cooper, 1993; Wilson, 1997; Tapscott, 1998). The learner is the centre of the learning, with the teacher playing an advisory and facilitative role. Duffy and Cunningham (1996) postulate that learners should have the opportunity to construct knowledge instead of being the receivers of knowledge through instruction. It therefore follows that learning must move away from teacher-centred instruction to knowledge discovery and construction.

#### 2.1.1.1 Social Constructivism

Social constructivism was developed by Vygotsky (1978), a post-revolutionary Soviet psychologist. Its emphasis is on the collaborative nature of learning. Vygotsky, though being a cognitivist at the time, discarded the hypothesis made by other cognitivists like Piaget (1932) that separating learning from its social context was possible. He defended his stance that all cognitive functions originated in society, and should therefore be
explained as products of social interactions, since learning was not simply the assimilation and accommodation of new knowledge by learners; in fact, it was the process by which learners were integrated into a *knowledge community*. In other words, these social interactions among individuals can blossom into a community of learners, or learning community, where this is mutual interdependence.

Vygotsky’s (1978) four principles of *social constructivism* are: (1) learning and development in a social, collaborative activity; (2) school learning should occur in a meaningful context and not be separated from learning and knowledge children develop in the ‘real world’; (3) out of school experiences should be related to the child’s school experience and, (4) *Zone of Proximal Development*. It is important to mention that these principles highlight the critical weight of culture and the significance of the social context which is largely responsible for the development of students’ cognitive skills. His ‘*Zone of Proximal Development*’ is perhaps his best-known theory, which argues that, with assistance from adults or more advanced learners, the less advanced students can master concepts and ideas that, on their own, might pose challenges to them.

The constructivist approach to learning and teaching is absent from the pedagogical practices at the UG. Educational practices there are still based on the traditional approach (Livingstone, 2014). Teacher-centred strategies are still employed, where the teachers impart knowledge and students absorb it. Students are not the centre of learning; in fact, they are passive learners. It is a very daunting situation, as students are not given the opportunity to have autonomy over their learning. Most learning-teaching activities at the University are still largely individual. There is not much interaction and communication to complete assigned tasks.

Since learning is not static, learning theories must change to suit the broader educational context in which they are found. ‘Quality learning’, as noted by Biggs and Tang (2011), is all about ensuring that learners use the appropriate cognitive skills required to construct knowledge and negotiate meaning during task completion, thus paving the way for *creativity, application* and *life-long learning*. They must be provided with a
broad-based learning and with a repertoire of learning tools and sources. Employing the social constructivist approach will ensure quality learning for all students at the UG.

Integrating E-Learning practices into the learning-teaching process at the UG will definitely support constructive learning. Learner-centered, interactive and collaborative practices will be experienced. In these innovative learning environments, learners will have the opportunity to be independent and autonomous over their own learning process. In addition to these, by the integration of Internet to educational settings, traditional forms of distance education at the UG will be modified, allowing the new medium for distance education practices – the Internet – to take root.

2.1.2 Transactional Distance
Within the last thirty years, there has been a formalisation of distance education as a discipline. This naturally aroused a need to develop a new learning theory for all those involved. Moore (1991) states that the first attempt in English to define distance education and to articulate a theory appeared in 1972 and in 1980 was named as the theory of transactional distance. Looking more carefully at the concept of transaction, he explains that it connotes the interplay among the environment, the individuals and the patterns of behaviours in a situation. This transaction is distance education. Moore (1997) explains that when referring to distance education, there is more than a geographic separation of learners and teachers; there is also a distance associated with understanding and perception also partially caused by geographic distance. Therefore, this ‘psychological and communications space’ is what is known as the transactional distance. Gokool-Ramdoo (2008) puts forth that the degree of transactional distance is dependent on three variables: dialogue, structure, and learner autonomy. Each of these is of paramount importance to the successful transaction of that distance.

Since the UG still embraces traditional learning and teaching, DE at that HE institution has not evolved over time, and it is executed via the traditional print/correspondence mode. In this mode, learner needs are not carefully considered. Course content is sent to students, and they are expected to cover all of the areas within a given time, with little
input from the instructor. This is what needs to change and, in fact, technology-enhanced DE will create a paradigm shift, moving the focus from teaching to learning, enabling effective transactions among all parties involved.

In other words, due to transactional distance, the teaching/learning process will be a shared responsibility that occurs through a dialogue between teacher and student. The learner will be aware of the learning activity and think about what is being learned (meta-cognition). The learner will also utilise critical thinking skills to develop a true awareness of the learning process. This will come about with the use of reflective practices, which can be created through dialogues with the instructor and with other students.

Extremely important concepts, relevant to transactional distance, are independence and autonomy and interaction and communication.

2.1.2.1 Independence and Autonomy

Charles Wedemeyer, a Professor of Education from the University of Wisconsin, considered the independence of the student as the essence of distance education (Wedemeyer, 1981; Keegan 1986). This was reflected in Wedemeyer's preference for the term ‘independent study’ for distance education at the college or university level. He was critical of contemporary patterns of higher education, believing that outdated concepts of learning and teaching were being employed. Wedemeyer felt that these concepts failed to utilise modern technologies in ways that could alter an institution. He challenged University Administrators to expand access and opportunity to autonomous learners. He set forth a system of distance education that emphasised learner independence and the adoption of technology as a way of implementing it. Wedemeyer noted four common elements of every learning-teaching situation: a teacher, a learner or learners, a communications system or mode, and something to be taught or learned. He proposed a reorganisation of these elements that would accommodate physical space and allow for greater learner freedom. His definition of independent study provides a clue for understanding the concept of ‘learner autonomy’. The learner studies
independently in his own environment free from the constraints of inappropriate ‘class placing’ and develops in himself a capacity and maturity that enables him to carry on ‘self-directed learning’.

In Moore’s (1972) Theory of Independent Study, he addresses learner autonomy. He notes that in traditional school settings learners are very dependent on teachers for guidance and that in most programmes, conventional and distance, the teacher is active while the student is passive. In distance education, there is a gap between teacher and student, so the student must accept a high degree of responsibility for the conduct of the learning programme. The autonomous learner needs little help from the teacher, who may be more of a respondent than a director.

Moore (1994) classifies distance education programmes as ‘autonomous’ (learner-determined) or ‘non-autonomous’ (teacher-determined) and gauges the degree of autonomy accorded the learner by answering the following three questions:

- Is the selection of learning objectives in the programme the responsibility of the learner or the teacher (autonomy in setting objectives)?
- Is the selection and use of resource persons - of bodies and other media - the decision of the learner or the teacher (autonomy in methods of study)?
- Are the decisions about the method of evaluation and criteria to be used made by the learner or the teacher (autonomy in evaluation)?

At the UG, there is a dire need for student independence and autonomy. All learning is teacher-dependent and non-autonomous, since these are characteristics of a traditional pedagogical approach still in vogue at this educational institution. In a teacher-directed setting, independence and autonomy are non-existent, as all learning experiences are chosen for the students. What is required of them is to simply follow the instructions in order to ‘learn’. ICTs integrated into the learning process of students will foster learner independence and autonomy, engendering students with more significant learning experiences. It is all about making learning constructive, where students will be the
protagonists of the learning process. This is another very important theory to consider, if the UG is to implement E-Learning.

2.1.2.2 Interaction and Communication

Interaction (or interactivity) serves a variety of functions in the educational transaction. Sims (1999) has listed these functions as allowing for learner control, facilitating programme adaptation based on learner input, allowing various forms of participation and communication, and acting as an aid to meaningful learning. In addition, interactivity is fundamental to the creation of learning communities espoused by Lipman (1991), Wenger (2001), and other influential educational theorists who focus on the critical role of community in learning. The value of another person's perspective, usually gained through interaction, is a key learning component in constructivist learning theories (Jonassen, 1991), and in inducing mindfulness in learners (Langer, 1989).

Interaction has always been valued in distance education, even in its most traditional, independent study format. Holmberg (1989) argued for the superiority of individualised interaction between student and tutor when supported by written postal correspondence or by real-time telephone tutoring. Holmberg also introduced us to the idea of simulated interaction that defines the writing style appropriate for independent study models of distance education, programming that he referred to as “guided didactic interaction.” Garrison and Shale (1990) define all forms of education (including that delivered at a distance) as essentially interactions between content, students, and teachers. Laurillard (1997) constructed a conversational model of learning in which interaction between students and teachers plays the critical role.

Anderson (2004) affirms that interaction can also be delineated by the actors participating in it. He goes on to note a number of interactions among the learner, content and teacher which are learner-learner, learner-content, learner-teacher, teacher-teacher, teacher-content, teacher-learner and content-content.
Interaction and communication are critical for meaningful learning, and this is where the instructional practices of the UG are falling short. Learning diversification is absent. There is little or no interaction in the traditional face to face sessions, possibly because some students are fearful of ridicule, or perhaps they are not bold enough to share their ideas in public, or even perhaps they have nothing to say, at that specific moment. Whatever the case may be, interaction is not necessarily encouraged. Teachers make students understand that they are the experts, the ‘sage on the stage’, and that students are to accept what they say, without inquiry.

If students are to develop creative, critical and complex cognitive skills, then they must be able to construct knowledge for themselves, querying and inquiring as they negotiate meaning and derive functioning knowledge. This can only happen when they interact and communicate. Technology-Based Education can provide students with the interaction necessary to have transformative learning experiences by creating strong learning communities and establishing collaborative learning as a powerful tool for maximising student learning outcomes.

2.1.3 Connectivism
Connectivism is a theoretical framework that helps to understand learning. It is mainly concerned with cognitive development. Learning begins when learners join together in a learning community, and knowledge is then put into action by discussing, sharing, and thinking (Downes, 2012). Knowledge comes from a variety of domains and disciplines, and access to the World Wide Web (WWW), makes this easier. Siemens (2008) stresses that the ability to make connections between fields, ideas, and concepts is a core skill. Knowledge does not fit in a pre-packaged curriculum, although formalised education must deliver it to a degree. However, as learners become autonomous and seek information on their own, they come to understand the existence of an endless world of knowledge.

Distance Education makes the formation of learning communities easier and globalises this process, as people from all over the world can become involved. Considering the
wealth of information available on the WWW, it is crucial for learners to be able to filter through information and to ensure it is from a valid, reliable source. As stated by Siemens (2004), the capacity to know is more critical than what is actually known.

The traditional approach to learning and teaching, espoused by the UG, does not embrace a connectivist approach. The kinds of learning tasks that students are required to perform do not always cause them to use the appropriate cognitive skills to complete them, because tasks are sometimes disconnected from their realities. Learning is a connected process. It does not exist by itself, as meaning is derived from the relationships between concepts and ideas. Connectedness within the learning process helps students to make sense of the realities which surround them. It is in this light that this theory must also be embraced as relevant to E-Learning in these times. Such a theory can only thrive when students are given autonomy to explore the various connections that are involved in the pedagogical process, to the extent that they themselves derive meanings of these connections and seek to foster creativity, application and life-long learning.

It is important to note that at the UG, the role of the tutor will have to change, where some of amount of control over the classroom situation will have to be relinquished. Students need to move from an environment controlled by the teacher and the institution, to an environment where they direct their own learning, find their own information, and create knowledge by engaging in networks away from the formal setting. They still communicate with others, however their personal interests and preferences – rather than institutional requirements and choices – are the main drives for their engagement with more knowledgeable others in their learning.

2.2 Changing Scene in Higher Education
Learning and teaching have been an age-old practice. Throughout the years, these phenomena have evolved in different ways, benefitting some students and forsaking others. In the olden days, the teacher was the sage of the classroom who directed the show from start to finish. For too long, pedagogical practices were teacher-centred,
with no real concern for the student or what he was expected to do. He was either bright or not. And whether he was bright or not determined if he succeeded or not. This kind of scenario was counter-productive and only ensured that students used *low cognitive skills* to complete tasks, thus resulting in a *surface approach* to learning.

Beginning from the late 20th century, there has been a worldwide shift in HE. As noted by Guri-Rosenbilt, Sebkova and Teichler (2007), the overall enrollment in tertiary institutions across the world is approximately 100 million, this figure being 200 times more than the recorded universal enrollment at the beginning of the 20th century. Laurillard (2008b) reveals that, as estimated by the Observatory of Borderless Higher Education (OBHE), the total HE enrollment will surpass 125 million by 2020. Such a scenario has naturally caused HE institutions to carefully deliberate on the way forward, given the high increase and diversity in student populations. Altbach, Reisberg and Rubmley (2009) establish that this has been primarily a result of the Bologna Process (2010) of 1999 which has had a profound impact on the delivery of high-quality HE. There has been, and continues to be, a clamour for quality learning and teaching. HE learning and teaching must move away from teacher-centred strategies and embrace student-centred methods/approaches.

As participation rates increase, educational institutions have no other option but to rely on student fees. Due to this, students are demanding quality programmes that are well taught and would boost their employability. Consequently, the pressures on academic staff have sharply augmented, as Administrators believe that the students they teach ought to be given value for money (Biggs & Tang, 2011). Further, since there could be serious funding implications for failing students, University Administrations have created a revolution in the nature of education delivery in their institutions. Burke and Jopson (2005, p. 1) highlight that “A twist to this issue in universities in western countries is that international students have become a highly significant source of funding, thus introducing another pressure point for the maintenance of standards”. Accordingly, there has been an urgent call for the integration of professional, technical and vocational education programmes into the academic curriculum to meet the
demands of this diverse student population. There has also been a plea for Teaching Faculty to make brave attempts to reorganise their pedagogical practices to accommodate student diversity. Universities have therefore moved for the adoption of an outcomes-based teaching and learning (OBTL) approach – constructively aligning teaching to achieve intended learning outcomes (ILOs) (Ramsden, 2003; Hattie, 2009; Biggs & Tang, 2011) – not only to answer to this student diversity, but to also respond to growing concerns about 21st century learning and teaching.

2.3 Accessibility and Equality in Education

In the last three decades there have been great changes in the HE landscape in the economically advanced countries. Increasing access to HE has resulted in a diversification of student populations that come with a wide range of learning styles and needs different from the traditional student populations. While the numbers are steadily increasing, there is still a large number of students who are not able to attend HE institutions due to problems of accessibility. Accessibility, according to UNICEF (2011, p. 1), is “The degree to which a product, service, device, or environment is available to as many people as possible”. In other words, it is viewed as the ability to access and benefit from a service or an entity. The National Centre on Universal Design for Learning (UDL) (2012, p. 1) establishes that “Accessibility is strongly related to universal design, when the approach involves direct access. This is about making things accessible to all people, whether they have a disability or not”. In simple terms, accessibility means ‘convenience’, ‘ease of access’ and ‘ease of use’, among others.

*Accessibility in Education* is an important concept which simply establishes that education should be accessible to all those who desire to have it. As noted by the United Nations (2014), education is a basic human right and each individual should have equal access to it. This is to say that everyone deserves the opportunity to achieve an excellent education. The United Nation’s International Children’s Emergency Fund (UNICEF) (2011, p. 1) reveals that “Many people around the world are being denied their basic human right to education, with far-reaching consequences […] a life bereft of education erects insurmountable barriers”.


The concept of *universal access to education* comes into play. This has to do with all people having *equal opportunities* in education, irrespective of their social class, ethnicity, background or physical disabilities (UNICEF, 2011). Universal access to education promotes a diversity of didactic methods to ensure that knowledge is diffused to different social, political, cultural, economic, national and biological backgrounds. Originally designed with the theme of *equal opportunity access* and *inclusion* of students with learning or physical disabilities (National Centre on UDL, 2012), the themes that comprise universal access to education now encompass all forms of ability and diversity. This access paves the way for *equality/equal opportunity* in education.

*Equality in Education* is another very fundamental concept which should not be divorced from *accessibility*. In other words, if education is accessible to all, then it would be safe to say that there is *educational equality*. The American Library Association (ALA) (2014, p. 1) defines equality as “Access to channels of communication and sources of information that is made available on even terms to all, where a level playing field of derived from the concept of fairness as uniform distribution, where everyone is entitled to the same level of access and can avail themselves if they choose”. In simple terms, educational equality dependent on two main things: *fairness* and *inclusion* (ALA, 2014). With reference to *fairness*, those factors that may be specific to one’s own personal conditions should not impede one’s potential for academic success. With regard to *inclusion*, there should be a comprehensive standard that is applicable to everyone in an educational context. It would not be unfair to say that for true academic success in an educational system, these two factors must at all times be taken into consideration.

The increasing importance in equality in education is based on the principle that now, more than ever before, the level of education of an individual is directly linked to the quality of life that that individual will have in the future. To this end, an academic system that practises educational equality is a strong foundation of a society that is fair and flourishing.
Dissecting the discussion above, it can be established that no one person ought to ever have an unfair advantage. It is expected that all should be given equal opportunities and accessibility, regardless of their gender, socio-economic background or circumstances, all should have access to free, compulsory and quality education, and that all have the prerogative to do with it whatever they deem best. This is not to suggest, however, that everyone is intrinsically equal. While some may choose to grab hold of these open and equal opportunities, some may simply opt to let them pass by unnoticed or unrequited. Bearing this in mind, it is just to purport that while equality does not assure an even playing field, it does provide everyone with the same tools and resources.

The answer to ensuring accessibility and equality in education is through the use of Information and Communication Technologies.

2.4 Information and Communication Technologies

Information and Communication Technologies (ICTs), according to Tech Terms (2010, p. 1) “[…] refer to technologies that provide access to information through telecommunications[...] it focuses primarily on communication technologies”. This therefore establishes that the boundaries of communication are now limitless.

In the past few decades, ICTs have paved the way for the use of a vast array of new communication facilities. Irrespective of an individual’s location, communication can be done through real time with others through the use of instant messaging (IM), and video conferencing, among others. In terms of social networks, websites like Facebook provides the capabilities for users worldwide to keep in touch regularly. It would not be unfair to say that modern ICTs have created a global village, in which communication between peoples can be done frequently.

Traditionally, in the field of Education, learning and teaching took place within the four classroom walls. Supporting the various dimensions of life-long learning was not possible due to a lack of innovation in pedagogical practices. With the passage of time, thankfully, newer approaches to learning and teaching developed, one of them being the
integration of ICTs in the pedagogical process. As noted by Lai (2011, p. 1263), “Education policy makers see digital technology as a transformative tool in teaching and learning”. Technology has made the process even more convenient, as information is exchanged with rapidity over the WWW. ICTs have now taken over the world by storm, so much so that new concepts like ‘online learning’, ‘technology-based learning’, and ‘Internet-based education’, among others, have become synonymous with sound educational practices.

ICTs are now viewed as currently integral to many educational changes throughout the world (Laurillard, 2012; Allen & Seaman, 2010; Sharma, 2008b). Due to them, the learning and teaching landscape has been dramatically altered and, consequently, new opportunities and accessibility to educational resources well beyond those traditionally available have now been opened up. In fact, Lai (2010, p. 1488) establishes that “Students are provided with the skills to pursue life-long learning with the support of ICTs […] where learning environments would include both physical and virtual space”. Such an affirmation unequivocally signals that the potential benefits that can be derived from embracing ICT tools and content are significant and can assuredly enhance learning and teaching.

Laurillard (2005) shares some benefits of ICTs in educational contexts. These are: (1) Internet access to digital version of materials unavailable locally; (2) Internet access to search, and transactional services; (3) Interactive diagnostic or adaptive tutorials; (4) Interactive educational games; (5) Remote control access to local physical devices; (6) Personalised information and guidance for learning support; (7) Simulations or models of scientific systems; (8) Communication tools for collaboration with other students and teachers; (9) Tools for creativity and design; (10) Virtual reality environments for development and manipulation; (11) Data analysis, modeling or organisation tools and applications and, (12) Electronic devices to assist disable learners. From the list provided above, the fact that ICTs provide, develop and sustain a range of competencies and skills is irrefutable. In essence, effective use of ICTs will produce ‘Technology Literacy’, ‘Knowledge Creation’, and ‘Knowledge Deepening’ (Clark, 2010).
Given the diversity of learning styles in tertiary institutions and the inability of the traditional approach to adequately address student learning needs, it has been proposed that ICTs be incorporated into the learning-teaching process. Laurillard (2008b) postulates that ICTs have been used effectively in sustaining traditional forms of teaching and administration in HE institutions. This statement rings true because in many such institutions, lecture theatres and seminar rooms equipped with data projectors and Internet-ready computers are ostensible. It appears to be common practice now for lecture sessions to be aided by some form of presentational technology and for lecture notes and reading materials to be stored electronically for easy access. However good this tendency may be, even though it is a step in the right direction, Rossiter (2007, p. 94) ratifies that “Such practices are surface uses of digital technologies, with pedagogical practices seldom affected deeply, and there is little shift of focus of control of learning from the teacher to the learner”. In support with Rossiter (2007), Lai (2008, p. 216) purports that “In some educational institutions, ICTs are used primarily to support existing teaching practices, being an ‘add-on to the traditional classroom experience’ but have not fundamentally transformed it”. This is the situation that needs to be urgently addressed so that HE institutions could take the fullest advantage of the potential benefits that can be derived and sustained from the effective use of ICTs.

Sharma (2008b) establishes that ICTs in educational contexts can have positive, lasting effects if they are fully embraced, adopted, implemented and institutionalised by all stakeholders. To this end, this author provides an adapted list of recommendations on how ICTs can be integrated and rooted into the curriculum. These are:

1. Develop and implement ICT policy in education.
2. Develop, review and implement ICT curricula at all levels in education.
3. Integrate ICT in the school curriculum.
4. Introduce ICT in the teacher education institutions so that all teachers are familiar with ICT pedagogy.
5. Develop ICT leadership at all levels in the education system.
6. Conduct ICT awareness programs for teachers, students and the members of the school community.

7. Establish ICT centres in remote areas, equipping them with portable generators and IT hardware, including Internet installation, where possible.

2.5 E-Learning

With the arrival of technology, one didactic method to have emerged is E-Learning. One area that has experienced phenomenal changes as a result of the use of Internet technology is the area of Education. The concept of E-learning is facilitating the teaching and learning experience using new channels and technologies.

A number of terms have been used to categorise what E-Learning is, a fact that makes a generic definition difficult to conceive. Ally (2004) postulates that “Terms that are commonly used include e-learning, Internet learning, distributed learning, networked learning, tele-learning, virtual learning, computer-assisted learning, Web-based learning, and distance learning” (p. 4). Without a doubt, the implication of the aforementioned terms suggests that the learner and facilitator are not necessarily in the same location, and that they use some kind of technological apparatus to communicate and to execute learning and teaching.

Researchers have attempted to define and explain the concept of E-Learning. Becker (1991) opines that E-Learning covers a wider set of applications and processes, which include web-based learning and virtual classrooms. Carry and Willis (2001) broadly define E-Learning as any form of learning that utilises a computer or technological network for delivery, interaction or facilitation. Current literature on the online learning and teaching phenomenon presents a plethora of definitions for the term ‘E-Learning’. Martyn (2003) offers that it is “An innovative approach used to deliver instruction to a remote audience, using the Web as the medium” (p. 38). Given that Ally (2004) affirms that the focus must be on the learner and the learning process, he defines E-Learning as “The use of the Internet to access learning materials; to interact with the content, instructor, and other learners […]” (p. 5). According to Laurillard (2008a, p. 140), “E-
learning is defined for our purpose here as the use of any of the new technologies or applications in the service of learning or learner support”. It would not be unfair to say that E-Learning is far more than simply using the Web to deliver materials. It is the specific way in which the learning-teaching tools are tailored to suit the student learning needs.

The rapid growth of E-Learning worldwide has changed the learning environment for both students and teachers (Landry et al., 2008; Lapointe & Reisetter, 2008; Williams & Williams, 2010). It is in this light that many tertiary institutions are heading in the direction of incorporating technology in on-campus and off-campus education delivery, and there must be reasons for this move. Lai (2011) reveals that for learners, online learning is not time, location or distance-bound. Students are continuously involved in synchronous and asynchronous communication with colleagues and the course tutor. They can access course materials anytime. In addition, learners can take online courses while working, therefore contextualising learning. For teachers, instruction can be done from anywhere. They can update and modify materials, with learners seeing changes immediately. They can readily give synchronous or asynchronous support to students who may be having difficulties with course material, assuring the students of a smooth learning journey.

It is undeniable that many tertiary institutions are heading in the direction of incorporating technology in on and off campus education delivery. And there must be reasons for this move. For learners, online learning is not time, location or distance-bound. Students are continuously involved in synchronous and asynchronous communication with colleagues and the course tutor. They can access course materials anytime. In addition, learners can take online courses while working, therefore contextualising learning. For teachers, instruction can be done from anywhere. They can update and modify materials, with learners seeing changes immediately. They can readily give synchronous or asynchronous support to students who may be having difficulties with course material, assuring the students of a smooth learning journey.
E-Learning has taken many forms, such as fully online, mixed mode (hybrid or blended learning) and web-assisted (Buzzetto-More 2008). According to Garrison and Kanuka (2004), these forms of E-Learning are ‘web-enhanced’, ‘hybrid/blended’ and ‘fully online’. In agreement with Garrison and Kanuka (2004) are Mitchell and Honore (2007) who clarify that (1) web-enhanced courses are F2F interaction-based, only allowing for course outlines and announcements to be uploaded, to which students have access; (2) blended courses have considerable synchronous and asynchronous E-Learning activities, coupled with some traditional F2F sessions, and (3) fully online courses usually embody Internet-based distance education. A very interesting classification of web-based learning environments is made by the Sloan Consortium (Allen & Seaman, 2006), in reference to the quantity of content and activities delivered online: web-facilitated courses are 1-29% online, hybrid-based courses are 30-79% online, and fully online courses are 80% and above online. This is an interesting categorisation because it clearly establishes a distinction between these three forms of E-Learning and the quantity of course content that is offered by means of technology.

There are several cogent reasons for adopting and implementing E-Learning into an educational system. According to Jamlan (2004), these are: (1) The growth of information technology: E-Learning has become an ideal delivery vehicle for education and learning; (2) It is information rich: E-Learning offers both teachers and learners access to anywhere, anytime “information rich” resources; (3) Alternative learning strategy: E-Learning can reach those previously denied access (e.g., students with physical disabilities) and, (4) Blended learning: E-Learning can augment traditional classroom offerings, thereby freeing up valuable resources and expanding the offerings to greater numbers of campus-based students.

With the ability of the Internet to bridge time and space, and the advancement in technology, E-Learning has the potential to continuously break some of its own barriers. Digital educational delivery knows few, if any, boundaries. E-Learning has the ability to bridge cultures and create avenues for new ways of thinking which is important when
introducing a new learning technology into any cultural context (Jamlan, 2004; Waldron, 2009).

### 2.6 Distance Education

The genesis of DE spans almost two centuries (Spector, Merrill, Merrienboer & Driscoll, 2008). And this time-span represents significant changes in how learning takes place and is communicated. As noted by Anderson and Thomas (2001), a familiar characteristic of DE is its ability to deliver educational material to students with differing geographical and sociological realities. This declaration is true, as the whole purpose of DE is to cater for the needs of students who may be unable to attend F2F classes, for one reason or another. To this end, many definitions of DE exist, which help to gain insight into what it entails.

Before the advent of technology, DE was referred to as “[…] a mode of delivering education and instruction, often on an individual basis, to students who are not physically present in a traditional classroom setting” (Distance Education Info, 2014). Such a definition makes sense since it was all about disseminating information to people to whom information was not easily accessible. Traditionally, DE programmes were in print mode, delivered via postal service, and provided some amount of flexibility. The teaching programmes were usually delivered by means of different instructional sources such as the television, video-recording and teleconferencing, among others (Moore, 1972).

With the advent of technology and the WWW, the definitions of DE have been altered to suit the current age. As computers began to inject themselves into the educational context, a proposed definition identified the delivery of instructional materials using both print and electronic media (Moore 1990, 1991). The United States Distance Learning Association (USDLA) (2014) renders the following definition of DE: “The acquisition of knowledge and skills through mediated information and instruction encompassing all technologies and other forms of learning at a distance” (p. 1). The Missouri State University (MSU) (2000) asserts that emerging technologies offer DE
students an unprecedented flexibility of time, place, pedagogy and place. Distance Education Info (2014) offers that DE is currently using technology-integrated educational strategies to students whose geographical circumstances are different.

From the definitions above, it would not be unjust to say that the more recent notion of DE seeks to bridge the gap between on-campus and off-campus learning by allowing all students to have equal access to didactic materials and learning experiences. In this light, it then becomes viable for students to decide their mode of study, whether it be on-campus, off-campus, or a combination of both. DE today employs learning and teaching resources that are independent of real-time contact with Teaching Faculty (Kop & Hill, 2008; Kang & Gyorke, 2008).

The blend of resources to be used hinges heavily on the course objectives, the students’ characteristics, as well as institutional requirements (Gokool-Ramdo, 2008). Given the confluence of computers and the emergence of Web 2.0 technologies, which significantly aid interaction and communication and (O’Reilly, 2005b; Lockyer & Patterson, 2008), DE now possesses the capability to offer enhanced forms of flexibility in instruction and learning to students. The aptitude of the WWW to transmit information with amazing rapidity, to foster collaboration and to sustain multimedia formats has transformed it into a valuable and stimulating tool which can subsequently be used to create, deliver and administer DE programmes.

DE, or Distance Learning (DL) and Distance Flexible Learning (DFL) as it is commonly called, has mutated itself into a very appealing educational mode for many students today. Such a claim is corroborated by the large numbers of DE students every year. As noted by the United States (US) Department of Education (2014), the percentage of undergraduates who enrolled in at least a single DE programme rose from 8% to 20% between 2000 to 2008. These statistics are indeed very encouraging because they highlight the fact that many students are deriving great value and benefit in opting for DL.
Distance Education Info (2014) establishes that there are four (4) critical elements that encompass the heart of DE. These are: (1) proper instructor preparation and training; (2) the use of selected technologies; (3) administration of educational programmes and, (4) the kinds of programmes being promoted and offered. Taking a closer look at these elements will cause anyone to acknowledge that these can either make or break the students, as well as the educational institution. An ineffective DE programme would naturally plunge the institution in peril. Consequently, educational leaders should see it as part of their mandate to ensure that students are provided with options that would produce lasting learning experiences.

It is a common mistake for some people to assume that modern DE is not as effective as the traditional approach to learning and teaching. In fact, a great number of Teaching Faculty is of the perception that students do not get to learn sufficiently in a technological virtual environment as they would in the traditional F2F physical environment (Biggs & Tang, 2007). However, many studies dispel such assumptions. Heuer and King (2004, p. 56) affirm that “While online instruction shares many features with the traditional teaching and learning modality, it has unique attributes such as flexibility – anytime, anywhere – along with time for reflection and learners’ anonymity”. Wegmann and McCauley (2008) confirm that the utilisation of ICTs has caused a dramatic change in student outcomes and expectations. Online learning whether synchronous or asynchronous is still gaining wide popularity and momentum around the globe today (Luskin, 2010). Bakardjieva and Gradinarova (2012) state that “Teachers are starting to explore the potential of blogs, media-sharing services and other social software which, although not designed specifically for E-Learning, can be used to empower students and create exciting new learning opportunities” (p. 14). Educational institutions continue to put out increasing number of courses via online learning as the demand for tailor made education continues to rise (Open Colleges, 2013).

As can be clearly seen from the above, DE, facilitated by emerging technologies, is in great demand. The current digital age has tremendously augmented the rapidity and
quantity of information for those who have easy access to the Internet. People with busy schedules, who may not be able to give up time F2F classes, can forego the barrier to continuing education through technology-facilitated DL. This is how important this instruction has come to mean for students around the world.

2.7 Web 2.0 Technologies

The advent of technology has paved the way for an increased use of the WWW, and for greater accessibility to information and materials. Since this time, there has been an introduction of various kinds of technologies to aid human interaction and communication. Due to this development, millions of people now have the privilege to navigate the Web, on a daily basis, for their own specific and personal purposes.

In the field of Education, E-Learning has come of age and is now being used for educational delivery (Raturi et al 2011a, 2011b; Gaffar, Singh & Thomas, 2011; Laurillard, 2012). In fact, the wide range of teaching technologies for Internet-based education offers fresh and stimulating opportunities for both Teaching Faculty and students.

Over the last decade, there has been much talk of a specific kind of learning technologies, Web 2.0 Technologies, which has the potential to improve student learning outcomes (OEDb Staff Writers, 2003; O’Reilly, 2005a; Anderson, 2007). So what really is ‘Web 2.0 Technologies’? How did it come into being? How important is it in E-Learning/Technology-Based Education? What are some of the kinds of Web 2.0 technologies/tools that have the capacity to aid the pedagogical process? The discussion below will strive to answer these questions.

2.7.1 What are Web 2.0 Technologies?

According to O’Reilly (2003, 2005a, 2005b), the concept of ‘Web 2.0’ germinated during a conference session between O’Reilly and MediaLive International, after the collapse of the ‘dot-com’ fever in the fall of 2001, which signalled a turning point for the WWW. The term was made popular by Dale Doherty, a web pioneer and Vice
President (VP) of the publishing and consulting firm, O’Reilly Media Inc. (the company famous for its technology-related conferences and high-quality books). Doherty noted that the Web was now far “[...] more important than ever before, with new and exciting applications and sites popping up with surprising regularity” O’Reilly (2005a, p. 1). As noted by O’Reilly (2005a), “Could it be that the dot-com collapse marked some kind of new turning point for the web, such that a call to action such as Web 2.0 might make sense?” (p. 1). It is from this session that the Web 2.0 Conference emerged. Anderson (2007) pointed out that the team wanted to capture the feeling that despite rise and subsequent collapse of ‘dot-com’, there was still hope for the Web to survive. It has been noted that since the coining of the Web 2.0 term, it has firmly taken root in the world of technology, with more than ‘9.5 million citations in Google’ (O’Reilly, 2005a; Anderson, 2007).

While Web 2.0 originally came into existence, outside of the educational context, the term has taken root in pedagogical vocabularies for online instruction. Web 2.0 refers to a new version or generation of web technology which came about due to cumulative changes in how the web is used and designed (O’Reilly, 2005a, 2005b; Anderson, 2007). Unlike the static pages of earlier systems, Web 2.0 functions as a platform for the sharing and networking of interactive and user-generative content (O’Reilly, 2006a). Anderson (2007, p. 4) establishes that “Web 2.0 is a more socially connected web where everyone is able to add to and edit the information space”. Web 2.0 is the new response to its previous version, Web 1.0, which only offered limited communication. Gaffar and Singh (2011, p. 66) reveal that “Ever since, Internet users have come to rely heavily on this ‘new web’ for their communication and social needs. Web 1.0, previous ‘version’ of the web, provided largely a ‘one-way’ communication channel between authors and consumers of web content”. From the above, it is not unfair to assume, from the recognition and attention that Web 2.0 is receiving, that it will be the defining technology to lead us into this century and beyond. From personal observation, Web 2.0 seems to have taken firm root in people’s daily activities much to the point that it has become a household name.
2.7.2 The Importance of Web 2.0 Technologies in Education

As endorsed by Gaffar, Singh and Thomas (2011, p. 129), “Web 2.0 technologies have gained increased popularity over the last decade. They have transformed user management on the World Wide Web and have made inroads in Education”. In educational contexts, stakeholders are beginning to realise the necessity of incorporating Web 2.0 technologies into the didactic process to ensure students of a more emancipatory approach to learning (Carlson, 2005; Oblinger & Oblinger, 2005). Further, proponents of this new technology affirm that “[…] the central principle behind Web 2.0 is its power to harness and disseminate collective intelligence through networking, user engagement and blogging” (O’Reilly 2006c, p. 1).

“Web 2.0 technologies afford more socially connected experience by enabling active engagement with others, to create and contribute content in magnitudes greater than previously possible with Web 1.0 which involves static one-way content consumption (Anderson, 2007)” (Gaffar, Singh & Thomas 2011, p. 129). These authors all point out that the difference with Web 2.0 is its ability to allow for meaningful interaction and communication with its users where they are allowed to be active participants in learning, rather than passive learners, as in the case of Web 1.0. Such a situation does present promise for educational institutions, teaching faculties and students all across the world.

Educational experts debate the role of Web 2.0 in instructional practices and learning strategies. On discussion about the role of HE in this age of ‘network society’ and ‘digital culture’ (O’Reilly, 2006b), some scholars highlight the value of teaching creativity and innovation through 21st century skills (OEDb Staff Writers, 2003; Rudd, Sutch & Facer, 2006; Owen, Grants, Sayers, and Facer, 2006). They agree that some potential benefits of Web 2.0 include the (1) provision of flexible ‘anytime/anywhere’ learning; (2) freedom for students to self-publish and construct knowledge; (3) granting of access to large amounts of information; (4) the extension of learning to traditionally excluded groups (Owen et al., 2006; Mason & Rennie, 2010). In support of the relevance of Web 2.0 in Education, Gaffar, Singh and Thomas (2011) reveal that it has
caused a revolution in pedagogical practices around the world; in fact, educators are now joining the bandwagon and endorsing Web 2.0 since they feel that the interactive nature of these technologies is apt for learning and teaching.

Other advocates affirm that user-generative content and *learning networks* support constructivist theories of learning (Davis, 2011; Orlando, 2011). Davis (2011) cites Mason and Rennie (2010) who claim that “Web 2.0 tools provide students with the opportunity to collaboratively negotiate knowledge and to contextualise learning within an emergent situation” (p. 3). Still, other experts also agree that Web 2.0 tools support pedagogical models which accentuate learning as an active process of knowledge construction. Web 2.0 is inherently participative and encourages learners to be interactive (Carlson, 2005; Rudd, Sutch, & Facer, 2006; Owen et al., 2006).

From the discussion above, it is quite clear that Web 2.0 hinges heavily on collaboration, interaction, interactivity and social networking. It seems to embrace the social constructivist theory of Vygostky (1978). To further add credence to the constructivist approach, and in support of the relevance of learning networks in the pedagogical process, Rudd, Sutch, and Facer (2006) emphasise that learning networks are important in the learning process because: (1) social, technical and leisure life is increasingly organised around networks; (2) learning, in most cases, is already about networks, collaboration and connection; (3) social mobility and social capital are achieved through building and mobilising networks of expertise and, (4) full personalisation cannot be achieved through schools disconnected from communities.

Just as there are advocates of Web 2.0, there are also experts who have shown some amount of skepticism to its use in Education. Gaffar, Singh and Thomas (2011) highlight a number of cases where Web 2.0 has been met with some amount of uncertainty. They document that Meyer (2010a, 2010b) conducted a study in which he investigated the use of Web 2.0 with some doctoral students using a number of Web 2.0 tools like Wiki, Blogs and Online Discussions to assist them in writing their research papers. Based on the findings, many students were able to manipulate the tools, confirming that they were able to interact meaningfully with each other. Unfortunately,
however, some students did not at all share some of those views as they felt uncomfortable with these new tools. Gaffar, Singh and Thomas (2011) also note that a study of a similar nature was executed by Kumar (2009), in which students were exposed to blogs, podcasts, sharing, and so forth. The results highlighted that students had difficulties in understanding the use of Web 2.0. Even though they felt that the tools did promote diversified learning and teaching, some of them felt that it should be relegated only to social communication and not be used in educational environments.

A study conducted by Levy and Hadar (2008) seem to confirm the tendencies highlighted above. In yet another study, highlighted by Gaffar, Singh and Thomas (2011), Tzeng, Liu, and Lin (2009) introduced an educational model using Web 2.0 which included ‘website users, content, virtual community and tools’. While Tzeng et al. (2009) purport that Web 2.0 will exert a massive, positive influence in the field of Education, they also note some potential challenges that educators may face in technology-based environments. The challenges highlighted by Gaffar, Singh and Thomas (2011, p. 132) are “[…] (i) premature hardware development and (ii) lack of basic computer knowledge. They further argue that Web 2.0 technologies prove to be challenging for juvenile and senior groups of students”.

The issues raised are not superficial, since teething problems with always arise with any new educational initiative or any new technology software. This does not mean that Web 2.0 is not effective for educational purposes. In fact, many proponents have done research using Web 2.0 tools, as has been earlier established in the discussion, and the results are very encouraging. The fact that social networks seem to have taken over the world by storm is indicative of the fact that it does have potential for success in learning and teaching. This success can only come about if it is properly harnessed and channeled to engender significant educational experiences. For this to happen, further research needs to be done to ascertain its effectiveness in Education.
2.7.3 Web 2.0 Learning-Teaching Tools

Web 2.0 also presents a number of tools that can be used in learning-teaching process. As espoused by OEDb Staff Writers (2003), online tools and resources greatly facilitate the instructional process since it allows for interaction and collaboration between learners and content, learners and teacher, and learners and learners. Based on the discussions above, it would not be unfair to say that these tools take up very little space on the computer; in fact, since some of these applications are Internet-based, they can be accessed from any computer, anytime and anywhere, at the learner’s own convenience.

OEDb Staff Writers (2003) present 101 Web 2.0 teaching tools which have been divided into various kinds. The different kinds of tools are listed below with some examples of each. They are as follows:

1. **Aggregators** help you to stay up-to-date with latest news and events: Blog lines, Feed Reader, and Wiki News, among others.
2. **Bookmark Managers** allow for the construction of personal directories where information can be saved, accessed, and shared: Facebook, LinkedIn, and Twitter, among others.
3. **Classroom Tools** help to gauge student progress: Animoto, Cue Prompter, and Slide, among others.
4. **Collaboration Tools**, as the name suggests, aid collaboration, interaction and communication: Edmondo, First Class, and Skype, among others.
5. **Course Management Tools** are those that allow for a multiplicity of functions in the pedagogical process: ATutor, Merlot, and Moodle, among others.
6. **E-Learning Tools** are those tools that aid educational technology or electronically supported learning: Course Builder, eStudy, and Open Study, among others.
7. **Gamification Tools** are used to bring interactive fun and excitement into the classroom: Badge Stack, Course Hero, and Fun Brain, among others.
8. **Office Suites** are free, commercial applications: Google Docs, Apache Open Office, and ZOHO, among others.
Office Tools include file converters, presentations tools, file managers, and so on: Cute PDF, Gmail, and Document Converter eXpress, among others.

Productivity Tools allow you to get things done quickly like pull-notes, dates, to-do lists, and so on: 30 Boxes, HiTask, and TiddlyWiki, among others.

Public Content Management Tools are blogs used to teach, to build classroom community, to create class projects, and more: EduBlog, Geeklog, and WordPress, among others.

Storage Tools are those used for backing up files and documents for subsequent retrieval: 4Shared, Flip Drive, and Scribd, among others.

To further establish the importance of these tools in the learning-teaching process, Anderson (2007) highlights the “Key Web 2.0 services/applications” (p. 7). These are:

1. Blogs;
2. Wikis;
3. Tagging and Social Bookmarking;
4. Multimedia Sharing;
5. Audio Blogging and Podcasting;
6. RSS and Syndication;
7. Newer Web 2.0 Services and Applications which include Social Networking, Aggregation Services, Data ‘Mash-ups’, Tracking and Filtering Content, Collaborating, Replicating Office-Style Software in the Browser, and Source Ideas or Work from the Crowd. Anderson (2007) points out that these names that have been used merely describe the functions of these tools.

As can be seen from the list of tools presented by both OEDb Staff Writers (2003) and Anderson (2007), there is a plethora of them from which to choose to enhance the learning-teaching process. Choosing the specific set of tools to use must be done thoughtfully, in conjunction with the needs of the learners. Web 2.0 tools are here to stay, so it is wise for all stakeholders to take advantage of them, carefully selecting those that would benefit their respective educational contexts.

2.8 Quality Learning and Teaching

What does quality mean in the context of learning and teaching? Many definitions of learning-teaching quality exist, testifying to the complexity and multi-faceted nature of the concept. The terms efficiency, effectiveness, equity and quality have often been used synonymously. Considerable consensus exists around the basic dimensions of
quality education today, however. According to Adams (1993), quality learning and teaching includes learners who are healthy and well-nourished to participate in learning, environments that are safe, healthy and protective with adequate resources and facilities, relevant curricula and materials for the acquisition of skills, trained teachers who use child-centred teaching approaches in well-managed classrooms, and outcomes that encompass knowledge, skills and attitudes, linked to national education goals and positive participation in society.

The issue of *quality learning and teaching* is ubiquitous. Parents, teachers, students, community folk and other stakeholders are calling for change and for renewed efforts towards fulfilling the mandate of quality education to students, so that they can become knowledgeable, thinking and productive citizens in society. Educational leaders need to pay more attention to the provision of quality education to their students (Sharma 2000a, 2008b) because this is part of their mandate to do so. Further, there needs to be quality educators in our educational institutions (Lingam, 2012; Lunenburg & Ornstein, 2012), as only quality educators can impart quality teaching. When quality teaching is imparted, the natural result will be quality learning. For there to be quality educators, the requisite training must be done so that educators are able to deal with the issues as they emerge (Mizell, 2010). Delivering quality education is a basic human right and this paves the way for students to demonstrate creativity, application, and life-long learning.

The UNICEF (2010) establishes that quality education is one of the prerequisites for learning and human and social development, being influenced by internal and external factors of the classroom experience. A poor quality education is no education at all, and will naturally hinder the child from becoming literate, and from acquiring critical life skills. From the deposition above about quality education, it is wise to suggest that the degree of learning that takes place in a child will depend on the degree of teaching, which will have a bearing on his learning outcomes. Biggs and Tang (2011) put forth the view that teaching effectiveness is the key to ensuring that all students learn well enough to have successful lives outside of the classroom setting. Quality education,
derived from quality learning and teaching, is vital to all aspects of life. It is an enormous challenge, but also a tremendous opportunity.

The UNICEF (2010) goes on to list five key elements that have a direct bearing on quality learning and teaching, affirming that these provide a baseline for monitoring quality. These are (1) What students bring to learning; (2) Environment; (3) Content; (4) Processes and. (5) Outcomes.

1. **What students bring to learning** - What experiences does the learner bring to school, and what particular challenges does she face? How different is the language of her home from the language of her school? Has she been sufficiently oriented to the rhythm of schooling?

2. **Environment** – Is the learning environment healthy, safe, protective, stimulating and gender-sensitive?

3. **Content of education** – Are the curriculum and materials relevant? Do they promote life skills and knowledge areas to promote and support national and local priorities?

4. **Processes** – Are teachers using child-centred teaching approaches? Do their assessments facilitate learning and reduce disparities? Are classrooms and schools well-managed? Are the methods of teaching, learning and support relevant to student learning outcomes?

5. **Outcomes** – What outcomes of education do we expect for students? How can we document how well they are learning and how well the curriculum furthers their future growth? It is imperative for learning outcomes to be linked to national education goals, with a view to fostering positive participation in society.

Óladóttir (2013), in support of the UNICEF’s (2010) key elements, regarding quality education, reaffirms ‘UNESCO’s 5 Pillars of Learning’, giving an explanation for each of them. These are:
(1) **Learning to learn and to know** – Students are expected to acquire knowledge, values and skills and must be able to search for knowledge and wisdom.

(2) **Learning to be** – Students are expected to obtain knowledge, values and skills for personal and family well-being.

(3) **Learning to live together** – Students are expected to attain knowledge, values and skills for international, intercultural and community co-operation and peace.

(4) **Learning to do** – Students are expected to achieve knowledge, values and skills for active engagement in productive employment and recreation.

(5) **Learning to transform oneself and society** – Students are expected to possess the knowledge, values and skills necessary for transforming attitudes and lifestyles.

These five pillars clearly establish what should be the essence of learning and teaching. Quality education must ensure and culminate with the achievement of these critical elements.

Learning and teaching are appreciably connected (Lunenburg & Irby, 2006). To ensure that this connection remains, Biggs and Tang (2011) recommend that *Constructive Alignment* (CA) be the means to achieve this. CA has its origins in Professor John Biggs, and it symbolises a fusion between a constructivist understanding of the nature of learning and an aligned design of outcomes-based learning and teaching. Constructive alignment is the keystone concept behind the current requirements for programme specification, and especially for its promotion of the use of criterion based assessment (CBA). This kind of assessment is a strong reaction against the norm based assessment (NBA), as it is concerned with grading students *holistically* and not analytically, as is the case with NBA.

CA (Biggs & Tang, 2011) is the unity between *intended learning outcomes* (ILOs), *learning and teaching activities* (LTAs), and *assessment tasks* (ATs) and *Grading*, in an educational programme, where the connections between them are aligned intrinsically on the basis of the learning activities expressed in the outcomes statements. It is an approach to curriculum design that optimises the conditions for learning, where the
teaching activities of the teacher and the learning activities of the student are both directed towards the same goal. CA is *constructive* because it is based on the theory that students construct meaning from the activities they do to learn. Alignment reflects the learning activities in the ILOs, expressed as a verb, that have to be activated in the teaching to achieve the outcome. In an aligned course, the teacher aligns the ATs with the ILOs such that the ILOs are evaluated to see how well they have been achieved.

The value of CA in learning and teaching is priceless. CA is all about ensuring that there is harmony in the way students are expected to learn course content. This is not to be done haphazardly, but should be thoughtfully planned and crafted with the students in mind. The principal objective is to make learning *student-centred*, which is in sharp contrast to the traditional teaching approach. Shuell (1986) reveals that “It is helpful to remember that what the student does is actually more important in determining what is learned, than what the teacher does” (p. 429). In essence, students are encouraged to be the *protagonists* of their own learning. They are the ones who are responsible for taking control of their own learning during task execution. During task execution, students are expected to use *high cognitive skills* to realise tasks, stimulating *higher order thinking* and a *deep approach* to learning.

The whole idea is to interweave the best features of various pedagogical approaches into the curriculum to provide optimum learning to students so that they realise their potentials. If any higher education institution intends to remain credible and authentic, then it must embrace educational sustainability. Educational sustainability, through a cutting-edge curriculum, which most definitely includes the integration of learning technologies given that *CA does embrace, endorse, support and cater for E-Learning*, will guarantee the promotion of positive learning, the ignition of learner enthusiasm for learning, and the provision of a strong foundation for creativity, application and life-long learning.
2.9 Education for All

Education, defined in a general sense, is a form of learning in which knowledge, skills and behavioural practices of persons are transmitted from one generation to the next, through the act of teaching, training and/or research. This concept is very important not only because it promotes continuity, but also because it ensures that people have a decent standard of life. In this regard, Dearing (1997, p. 7) posits that “The purpose of education is life-enhancing: it contributes to the whole quality of life”.

The purpose of Education ought to be life-enhancing, as it is supposed to transform the way that people think, act and feel. It is supposed to provoke positive, life-altering changes in individuals. The United Nations (UN) (2014, p. 1) affirms that “Education is a right, like the right to have proper food or a roof over your head. It is not only a right, but a passport to a human development”. In other words, Education is a fundamental human right which should not, at all costs, be tampered with. Just like all other human rights, it is universal and unchallengeable: everyone, regardless of ethnicity, gender, religion, status, class, or creed, is entitled to it. This has led to the adoption of the concept referred to as Education For All (EFA).

The ultimate aim of EFA is sustainable development (Hargreaves & Fink, 2004). EFA was first initiated in Jomtien, Thailand, in 1990, as an international initiative, to convey the benefits of education to every citizen in every society (The World Bank, 2013). After a decade of slow progress, the international community gathered together again in April 2000 at the EFA World Education Forum in Dakar, Senegal. This event drew some 1,100 participants from 198 countries (UNICEF, 2012). The forum hinged on the fact that quite a number of countries were nowhere close to realising the goals that had been previously established at the conference some ten years earlier. Bearing in mind the above, they decide to reaffirm their commitment to EFA. It was at this conference that the participants made reaffirmed their resolve to universalise primary education and substantially reduce illiteracy by the end of the decade.
Consequently, the *Dakar Framework for Action* was adopted with the firm pledge of national governments, civil society groups and development agencies such as the United Nations Education, Scientific and Cultural Organisation (UNESCO) and the World Bank (UNICEF, 2012; UN, 2014) with the aim of achieving EFA by the year 2015. The two most important frameworks emanating from this conference were the six EFA goals and the eight Millennium Development Goals (MDGs). The UN (2014) clearly outlines the EFA goals and MDGs. The six EFA goals are to: (1) Expand early childhood care and education; (2) Provide free and compulsory education for all; (3) Promote learning and life skills for young people and adults; (4) Increase adult literacy; (5) Achieve gender parity and, (6) Improve the quality of education. The eight MDGs are to: (1) Eradicate extreme poverty and hunger; (2) Achieve universal primary education; (3) Promote gender equality and empower women; (4) Reduce child mortality; (5) Improve maternal health; (6) Combat HIV/AIDS, malaria and other diseases; (7) Ensure environmental sustainability and (8) Develop a global partnership for development.

The UN (2014, p. 1) establishes that “The EFA goals and the MDGs are complementary. When you fund education, you are securing progress towards all the Millennium Development Goals”. In other words, these two sets of goals are an ambitious roadmap which is to be followed by the global community. In their essence, they both offer a long-term vision of reduced poverty and hunger, better health and education, sustainable lifestyles, strong partnerships and shared commitments.

It is important to note, from this discussion, that merely accessing education is not enough; in fact, what is of equal importance is the duration and quality of education. The EFA agenda is of the view that public policy can drastically modify education system and their relation to society, given sufficient political will and resources, and that it is obligatory for the implementation of national policies to accentuate inclusion, literacy, quality and capacity development. It would be substantial to say that the EFA goals are critical to achieving the MDGs. It is for this reason that they are inseparable. Said differently, Education can, by all means, improve health, increase sustainability
and help eradicate hunger and poverty. Accordingly, achieving the MDGs will help children to access and benefit from quality education.

2.10 Educational Leadership

In the ambit of learning and teaching today, there is a growing concern about learning and teaching effectiveness (Ramsden, 2003; Lunenburg & Irby, 2006; Biggs & Tang, 2011). To this end, there is consensus that leadership within educational institutions must be effective enough to foster the delivery of quality education to students (Duignan & Cannon, 2011). Biggs and Tang (2011, p. 291) affirm that “The most important factor in the implementation of any pedagogical method in a department or faculty is leadership”. According to Fisher (1993), leadership is the ability to influence people to willingly follow one’s guidance or adhere to one’s decisions, obtaining followers and influencing them to setting and achieving objectives. Northouse (2001) establishes that leadership is a process whereby an individual influences a group of individuals to achieve a common goal.

In recent years, Educational Leadership has attracted considerable attention in terms of research endeavours and improvement efforts in educational institutions. Recent studies on leadership in educational contexts and its impact on students’ academic performance (Northouse, 2007; Lingam, 2012; Lunenburg & Ornstein, 2012) have contributed significantly to the knowledge surrounding this issue. If an educational institution is not properly led, the students will of course suffer. Ineffective leadership in a school may result in a lack of support from teachers, parents and the immediate school community. According to Musungu & Nasongo (2008), the role of educational leaders is to encourage academic performance. It is very important for the performance of a school to be judged against that of the persons who lead it.

The significance and benefits of effective leadership remain unquestioned. With good leadership, students will be influenced and encouraged to maximise their learning (Sharma 2000a, 2008b, 2008c). In support of this contention, Rutter & Williams (2007) emphasise that to optimise students’ outcomes educational leaders are required first to
improve the leadership in schools. In order to improve the leadership in schools, leadership will naturally have to be shared/distributed (Spillane, 2005). As espoused by Feinberg (2003) and Lunenburg and Irby (2006), distribution of leadership exists when workers allow themselves to be organised, accepting responsibility for what they do, and actively participating in decision-making, target-setting and performance-monitoring. The role of the educational leaders is to facilitate the work of their staff who will, in turn, participate in the decision-making process.

Biggs and Tang (2011) suggest that, for the implementation of any educational initiative, there needs to be process leaders who orchestrate the various stages of implementation, context experts who can be relied upon for technical advice on implementation, and political leaders who understand how the committee system works and who know whose elbows to grip in easing the implementation through various committees. This kind of leadership style would certainly give rise to the creation and application of a professional learning community (Lunenburg & Ornstein, 2012) which is primarily concerned with vision building. In other words, people are brought together to create the mission statement, develop the vision and value statements, establish goals, develop co-operative and participatory learning processes, with a view to having good governance. These are the concepts that need to be embraced, in order to improve the quality of the leadership in schools, which will give rise to the delivery of high-quality education.

2.10.1 Instructional/Pedagogic Leadership

In delivering high-quality education, an education institution must have its central focus on its core business: learning and teaching. One of the most important areas in Educational Leadership is the concept of Pedagogic Leadership (also called Instructional Leadership). The emphasis of this kind of leadership is on learning and teaching, simply because all that is done in the educational institution has the objective of ensuring that instruction – learning and teaching – is effective and that students are able to maximise their outcomes. Lunenburg & Irby (2006) affirm that the goal of education is learning, and the vehicle used to achieve that goal is teaching.
The phenomena of teaching and learning have been around since the genesis of civilisation, though quite different in their applicability and function throughout the ages. Shuell (1993) affirms that “Within an educational context, the two phenomena [teaching and learning] are so inextricably intertwined that it often is difficult to imagine one without the other” (p. 291). It would not be therefore unfair to say that the two are interdependent, as one cannot exist without the other. Pedagogic Leadership is primarily concerned with what students learn and how they learn, and how well they have learned what they are supposed to.

The leadership style lends itself to new and creative ways of learning and teaching. Leaders exercise faith and confidence in their teachers to use their initiative in planning for learning-teaching process. Teachers are encouraged to share their ideas and develop their talents. Teachers are given the freedom to explore new and creative ways of teaching their students. Students are taught using a repertoire of didactic strategies that will enable the teachers to meet the needs of each student within their classroom. This increases the students’ academic performance through the concept of ‘No Child Left Behind’.

Instructional leaders have to work together with their staff to ensure that learning and teaching is student-centred, that it is all about what the students do maximise their learning. They need to ensure that a professional learning community (Spillane, 2005) is created and maintained, so that the objective would be to enhance learning that matters. Through the strength of their vision and personality, pedagogic leaders are able to inspire their staff to change expectations, perceptions and motivations positively to work towards common goals (Lingam, 2012). They are generally energetic, enthusiastic and passionate. Not only are these leaders concerned and involved in the process, they are also focused on helping every member of the group succeed as well.

For the adoption and implementation of any educational proposal within an educational institution, there must be a commitment from leaders and staff to ensure that instruction always takes centre stage. With regard to employing current pedagogical methods in
learning and teaching, instructional leaders need to encourage staff members to undergo Professional Development (PD) sessions (Mizell, 2010), as often as it is required, so that they come up with the best and most current methods to deal with student diversity, ensuring that positive learning is promoted, that learner enthusiasm for learning is sparked, and that a strong foundation for life-long learning is provided.

Mizell (2010) affirms that “Educators who do not experience effective professional development do not improve their skills, and student learning suffers” (p. 6). Staff professional development has the objective of familiarising staff with (a) classroom management, school culture, operations and administration, and (b) the necessary skills to deal with students’ learning challenges. In other words, it deals with administrative issues and pedagogical issues. It is vital for the sustenance of any educational institution, since it promotes quality assurance. PD is the strategy that educational institutions use to ensure that educators continue to strengthen their practice throughout their career. Strengthening their practices, as often as it may be demanded, will ensure that staff members improve on what they do, and that they keep on doing so.
2.11 Conceptual Framework of the Study

Accessibility 

Equality

Information and Communication Technologies (ICTs)

ICT PRACTICES

ICT TOOLS

METHODOLOGY*

OUTCOME

QUALITY LEARNING & TEACHING

EDUCATION FOR ALL (EFA)

*Please refer to chapter on Methodology.
CHAPTER 3
METHODOLOGY

Methodology is an approach that is employed to empirically resolve the complete set of choices available to the researcher. It is not merely a question of selecting methods, but it rather engages the researcher fully ‘from unconscious worldview to enactment of that worldview via the inquiry process’ (Guba & Lincoln 1989, 1994, 2005). Considering the afore-mentioned, methodology is relevant to any study as the objective is to decide the best method of approach to deal with a question or phenomenon. It is in this same light that the concept of methodology was relevant to this research, since it sought to answer the question ‘How?’ In other words, the best way to answer the research questions of this study was by means of a methodological strategy.

Quality research usually results from the use of a mixture of methods to do it. Hansen, Cottle, Negrine and Newbold (1998) highlight that researchers ought not to only account for the most suitable methods for their research, but ought to also determine the specific set of research methods that would engender an improved and profound understanding of the problem. In determining those methods, the kind of study being done must be delineated.

Bearing in mind the above, the Case Study Approach has been used as the paradigm of this study. Thomas (2011, p. 5) defines it this way:

“Case studies are analyses of persons, events, decisions, periods, projects, policies, institutions, or other systems that are studied holistically by one or more methods. The case that is the subject of the inquiry will be an instance of a class of phenomena that provides an analytical frame - an object — within which the study is conducted and which the case illuminates and explicates”.

In relation to case studies, Yin (2011) postulates that these are empirical studies that examine a modern phenomenon within its real-life context especially when there is no clear-cut path between the very phenomenon and context, and in which evidence comes from a diversity of sources. These definitions by Thomas (2011) and Yin (2011) are
very important because they emphasise a thorough background examination of a restricted number of circumstances and their interactions. This specific approach was employed in this study because it offered the most appropriate methods for an in-depth study which was sensitive to context.

This present case study was of an exploratory nature, since the objective was to find out what it would mean for the UG to introduce Technology-Based Education. To this end, the methodological approach used to conduct this study was the mixed method. The mixed method approach had been chosen, as it “[...] employs strategies of inquiry that involve collecting qualitative and quantitative data either simultaneously or sequentially [...]” (Creswell 2009, p. 40). This author further affirms that the mixed method approach is now in vogue; in fact, to use only one of the methods would be contrary to those modern approaches being utilised in the social and human sciences field.

With regard to the research questions proposed in this study, an exploratory study was done to investigate the potential of implementing E-Learning practices at the University of Guyana. In fulfillment of the aim and objectives of this study (See Chapter 1, page 16), a survey was carried out to determine the suitability and viability of employing technology based-education based on the responses from the participants of this research.

3.1 Investigative Site

The investigative site for this research was the UG, which is a tertiary education provider located in Guyana, in the continent of South America. This University was chosen specifically because of the researcher’s connections to it, and given the fact that the traditional approach to learning and teaching is still being employed there. As has been established in earlier chapters of this supervised research project, the traditional F2F method and the traditional DE are the only instructional delivery modes used, for which this study is of great significance.
3.2 Sampling Technique

The kind of sampling technique used for this study was *purposive sampling*. The specific purpose in mind was to *explore the potential of using technology in educational delivery and its implementation at the University of Guyana*. As noted by Palys (2008, p. 697), “Purposive sampling is virtually synonymous with qualitative research”. This kind of sampling technique was chosen, since the intention was to survey specific groups of individuals – Students, Teaching Faculty and University Administration, in this case – to hereinafter make judgments on the information gathered, regarding the adoption of the specific phenomenon in question: E-Learning. In other words, the focus was on these groups of people since they were best able to provide the researcher with the answers to the research questions.

3.3 Research Respondents/Participants

Given that this study surrounds the UG, it was only practical that the research respondents came directly from that educational institution. These participants are the Students, the Teaching Faculty, and the University Administration/Statutory Officers. Each set of respondents is described below.

3.3.1 UG Students

The University has a student population of 6,300 students spread across its two campuses (UG website, 2013; UG Registry, 2014). The majority of the students attend the Turkeyen Campus, the larger of the two campuses located in the capital city, Georgetown. The remaining students who reside in the Berbice Campus environs attend there. Students pursue a wide range of certificate, degree and diploma programmes for which they must attend the F2F sessions.

3.3.2 UG Teaching Faculty

As of April 2014, there are 290 full-time (F/T) lecturers and 214 part-time (P/T) lecturers (UG Personnel Office, 2014) who are spread across the six Faculties and two Schools and one Institute (UG website, 2013). There are six categories of lecturers in the University – Assistant Lecturer, Lecturer I, Lecturer II, Senior Lecturer, Reader, and
Professor, on the basis of rank (UG Registry, 2010). The majority of lecturers at the University fall between ‘Assistant Lecturer to Lecturer II’, while the minority range between ‘Senior Lecturer and Professor’. This is endorsed by the UG Personnel Office (UG Personnel Office, 2014).

3.3.3 UG Administration/Statutory Officers

There are 14 Statutory Officers who form the UG’s core leadership. These are the Chancellor, Pro-Chancellor, Principal and Vice-Chancellor (VC), Deputy VC, Registrar, Bursar, Director for Berbice Campus (UG’s other campus), and the seven 7 Deans for the six Faculties and one School (UG website, 2013). The position of ‘Chancellor’ and Pro-Chancellor are still vacant, hence there are currently only 12 of them functioning. These Administrators work together to ensure the smooth running and functioning of the University.

In summary, Table 1 shows the population distribution of the UG Students, Teaching Faculty, and Administration.

Table 1. UG Population Distribution

<table>
<thead>
<tr>
<th>Designation</th>
<th>Population Distribution (N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>UG Students</td>
<td>6,300</td>
</tr>
<tr>
<td>UG Teaching Faculty</td>
<td>514</td>
</tr>
<tr>
<td></td>
<td>290 F/T</td>
</tr>
<tr>
<td></td>
<td>214 P/T</td>
</tr>
<tr>
<td>UG Administration</td>
<td>12</td>
</tr>
</tbody>
</table>

3.4 Research Instruments

The data collection method involved gathering numeric information as well as text information, so that the final database represented both quantitative and qualitative information. The instruments used to collect data for this research were three questionnaires (See AppendixA, B and C, pages 145-151) which sought to address the research questions in this study (See Chapter 1, page 16). These surveys all bore a
University of the South Pacific (USP) *Ethics Approval Reference Number, FALE 01/14*. Each questionnaire included both open-ended and close-ended questions, with the objective of gathering information from the UG Students, Teaching Faculty and Administration, about the implications of integrating technologies in education delivery at the tertiary institution. Additionally, the questionnaires contained a definition of ‘E-Learning’, an explanation, in approximately 90 words, of the ‘Purpose of the Research’, and a ‘Confidentiality Statement’ affirming, for the sake of transparency and clarity, that the completion of the survey was *voluntary*, that their responses would be *fully confidential*, and the time they had taken to complete same was duly noted and appreciated.

Each of the questionnaires was subsequently designed as an online survey, using a free online tool (www.surveymonkey.com), with the inclusion of the USP reference number and the afore-mentioned details. A description of each of the surveys is given below.

**3.4.1 UG Students**
The first of these surveys designed was the student survey. This survey consisted of 10 open-ended and closed-ended questions, hinging around research questions 1 and 2 (*See Chapter 1, page 16*). Four of the questions utilised the ‘5-point Likert Scale system’, which also required further explanation to the chosen answer; three of the questions were one-answer multiple choice questions with one of them requiring further clarification; two of the questions were essay-type, and the final one required a specific selection and a subsequent justification for that choice. The questions centred on the current student location; student satisfaction of current pedagogical practices at the institution; students’ familiarity with, feelings about and understating of E-Learning; students’ view of implementing E-Learning at the University, their preferred form of E-Learning and a reason for their choice.

**3.4.2 UG Teaching Faculty**
The second survey designed was the Teaching Faculty survey. Careful consideration and thought had to be placed into the kind of questions to be asked. This survey
consisted of five open-ended and closed-ended questions which focused on research question 3 (See Chapter 1, page 16). Three of these questions made use of the ‘5-point Likert scale system’, which also necessitated additional clarification on the answers chosen. The remaining two questions were essay-type, requiring longer responses. The questions concentrated on lecturers’ analysis of the current learning-teaching situation at the HE institution; their thoughts and feelings on whether their current pedagogical approaches could be improved through the use of technology, and whether they thought it was viable for the University to establish an E-Learning initiative.

### 3.4.3 UG Administration/Statutory Officers

The third survey designed was the UG Administration survey. Concerning the design of this survey, it is necessary to highlight that is exactly like the survey designed for the UG Teaching Faculty. This survey consisted of five open-ended and closed-ended questions which focused on research question 3 (See Chapter 1, page 16). Three of these questions made use of the ‘5-point Likert scale system’, which also necessitated additional clarification on the answers chosen. The remaining two questions were essay-type, and required longer responses. The questions concentrated on Administration’s view of the current learning-teaching situation at the HE institution; their thoughts and feelings on whether the current pedagogical practices could be improved through the use of technology, and their views on the feasibility of establishing an E-Learning programme at the University.

The determined sample target for each set of respondents, in accordance with Leedy and Ormrod (2010, 2013) and Help With Research (2013), is presented in Table 2:

<table>
<thead>
<tr>
<th>Designation</th>
<th>Sample Target (N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>UG Students</td>
<td>400</td>
</tr>
<tr>
<td>UG Teaching Faculty</td>
<td>257</td>
</tr>
<tr>
<td>UG Administration</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td><strong>669 (Total)</strong></td>
</tr>
</tbody>
</table>

*Table 2. Determined Sample Target*
The above targets, as previously mentioned, were determined following the guidelines suggested by Leedy and Ormrod (2013) which reveal the following: if the population size is smaller than 100, all should be sampled; if the entire population is around 500, sample half of that amount; if it is 1,500, sample 20% of it; if it reaches about 5,000 or so, then sample 400. It is in this light that the sample targets for this study were determined.

3.5 Implementation of Research Instruments

Before the online surveys were sent out, a simple validity and reliability test was done (Radhakrishna, 2007; Data Analysis Australia, 2014) to ascertain whether the instruments measured what they were designed to measure. To this end, a trial run of the surveys was done with seven different individuals. Three persons were contacted by email to complete the survey for UG Students, while two persons each were allocated to complete the survey for the UG Teaching Faculty and Administration. The respondents completed the surveys within a 24-hour period without difficulty. There was no follow-up from respondents seeking clarification about the questions asked within the surveys and what they were required to do. This signalled that the surveys were ready for implementation.

The survey links were officially sent out to the three sets of respondents on May 14, 2014 to their respective email messaging systems. Though they were not told in the email messages, respondents were given a period of 24 days within which to complete the survey. This was done to facilitate more participants and to acquire sufficient data for subsequent analysis. Reminders were sent to respondents twice weekly, and in some cases thrice weekly, from the start to the end of the data collection process.

With reference to the UG Students, all of them were notified electronically via the UG students’ mailing list, the UG Students Facebook page, and by six other Facebook pages relevant to UG students.
With regard to the UG Teaching Faculty, they were all notified electronically via the UG Staff/UG Lecturers’ mailing list. The researcher received from the UG Personnel Office the mailing list for F/T and P/T lecturers. These mailing lists were used to communicate with the entire University’s Teaching Faculty. Further to this, a special email message was sent to all the lecturers from the Faculty of Education and Humanities, since this is Faculty to which the researcher belonged.

With respect to the UG Administration/Statutory Officers, they were notified electronically via their UG institution email addresses, in addition to their personal email addresses, provided by the UG Personnel Office.

The online surveys were officially closed on June 7, 2014, three weeks and three days after they were officially opened. The total number of surveys answered was 558. In terms of survey responses from specific sets of respondents, the following information is deposited in Table 3:

**Table 3. Response Rate for E-Learning Survey**

<table>
<thead>
<tr>
<th>Sample Target (N)</th>
<th>Return Rate</th>
<th>% Return Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>400</td>
<td>412</td>
<td>103%</td>
</tr>
<tr>
<td>257</td>
<td>138</td>
<td>53.7%</td>
</tr>
<tr>
<td>12</td>
<td>8</td>
<td>66.7%</td>
</tr>
<tr>
<td>669(TOTAL)</td>
<td>558 (TOTAL)</td>
<td></td>
</tr>
</tbody>
</table>

In terms of complete and partial survey responses, the following is revealed in Table 4:
Table 4. Complete/Incomplete Responses for E-Learning Survey

<table>
<thead>
<tr>
<th>Sample (N)</th>
<th>Complete Surveys</th>
<th>Incomplete Surveys</th>
</tr>
</thead>
<tbody>
<tr>
<td>412</td>
<td>358</td>
<td>54</td>
</tr>
<tr>
<td>138</td>
<td>136</td>
<td>2</td>
</tr>
<tr>
<td>8</td>
<td>8</td>
<td>0</td>
</tr>
<tr>
<td>558 (TOTAL)</td>
<td>502 (TOTAL)</td>
<td>56 (TOTAL)</td>
</tr>
</tbody>
</table>

Important to note also is the fact that all three sets of survey questions – Students, Teaching Faculty, and Administration/Statutory Officers – showed the specific number of participants who responded to them, as against those who skipped them.

3.6 Data Analysis

The data gathered from the three E-Learning surveys were presented, analysed, and discussed empirically, through the aid of tables, figures and graphs where necessary. Data triangulation was performed, using quantitative and qualitative data. It is important to note that each survey for each set of respondents – Students, Teaching Faculty, and Administrators – was analysed separately, question by question, with the overarching objective of answering the research questions. Subsequently, conclusions were drawn from the information presented and recommendations made to the University to adopt and implement E-Learning practices.
CHAPTER 4
DATA ANALYSIS AND DISCUSSION

The surveys, which were carried out, in accordance with the research aim, questions and objectives (See Chapter 1, pages 16), to explore the potential of implementing E-Learning practices at the University of Guyana, revealed favourable findings. These results are presented, analysed and discussed below. The first of these is the survey for UG Students, followed by the survey for UG Teaching Faculty, and consequently by the survey for UG Administration/Statutory Officers. Each of these surveys is analysed question by question.

4.1 UG Students E-Learning Survey

From the sample size for the UG Students (400), the return rate was 412, or 103%, thus surpassing the sample target. Of the 412 survey responses, 358 were fully complete, while 54 were partially complete.

4.1.1 Question 1

Question 1 focused on whether or not students were from the capital city of Guyana (Georgetown). Figure 4 presents the responses to this question.

*Figure 4. Number of students who are/are not from Georgetown*
As can be seen from Figure 4, these statistics are very important, clearly showing that the majority of the sample is not from the capital city. This can either mean that these students have to travel on a daily basis to get to the University, or that students have to move to the capital city – either to stay with family or to rent suitable accommodation – to be able to get to classes easily.

4.1.2 Question 2

Question 2 wanted to find out the number of students who resided in Georgetown. Figure 5 obviates the answer to this question.

![Figure 5. Number of students who do/do not live in Georgetown](image)

As can be observed from Figure 5 above, and similar to Figure 4, the majority of the sample does not live in Georgetown. This therefore means that these students have to travel on a daily basis to get to the University. Comparing the information presented in Figures 4 and 5, that since 54.5% of the students are not from Georgetown (Figure 4), and 50.1% of them do not live in Georgetown (Figure 5), it can be assumed that 4.4% of them (Figure 4) have moved to Georgetown to access the University (Figure 5). This percentage difference is reflected in the percentage of students who are from

Q2. Do you live in the capital city, Georgetown?

<table>
<thead>
<tr>
<th></th>
<th>Answered</th>
<th>Skipped</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>204</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>203</td>
<td>5</td>
</tr>
</tbody>
</table>

49.9% (203)

50.1% (204)
Georgetown (45.5%) (Figure 4), as against the percentage of those who are living in Georgetown (49.9%) (Figure 5).

### 4.1.3 Question 3

Question 3 dealt with accessibility of education at UG for students. Figure 6 highlights the various answers to this question.

![Figure 6. Accessibility/Non-Accessibility of Education at UG](image)

As highlighted in Figure 6, **68.9%** of respondents find education at the UG accessible to them, **18.8%** of them do not find it accessible, and **12.3%** of them are not sure whether it is or not. While it is obvious that the majority of the respondents find education at the UG easily accessible, the fact cannot be erased that a considerable portion of students does not share this view or is uncertain about this. This can only mean that all students at the UG do not have equal access to education. Accessibility is a pre-requisite for good educational practices (ALA, 2014).

The second part of Question 3 required students to elaborate on their chosen answer. While **69.6%** of them (286) from the total sample (412) commented further, giving
reasons as to why they decided one way or another, 30.4% of them (126) did not elaborate.

From the 69.6% who did respond to this second part of the question, a quick review of the responses can confirm that most of them find education accessible, while some do not, and yet still some are undecided. For those who are undecided, reasons have not been given to support this contention. The main issues addressed are (1) easiness of accessibility, and (2) difficulty of accessibility. A sample of the categorised answers from respondents is given below to support their contention:

*Easiness of Accessibility*

“I agree because it can be accessed yes, but how effectively and efficiently may be the issue, since transportation cost and availability of transport can affect this accessibility especially for those persons living outside of Georgetown”.

*Difficulty of Accessibility*

“I think that the University of Guyana is not easily accessible because its limited branches, that being only established in Berbice and Turkeyen, which makes insufficient to provide education to persons residing in other regions such as Essequibo and the hinterland areas”.

It is important to highlight that the issue of accessibility is very important to this study, and to the delivery of quality education, as highlighted in the literature reviewed in Chapter 2. It is of extreme relevance to EFA. In Guyana’s educational context, many students who attend the University do not live in Georgetown, where the main campus is, while some even live in the hinterland areas. The findings above do validate this position, in conjunction with the responses from students, suggesting that there is room for improvement, with regard to making education accessible to all students.

The issue of ‘distance’ is very important in education delivery. Being at such a considerable distance from the campus, where F2F instruction is the rule of law,
students’ learning process can be frustrated. In order to resolve this issue, it has been suggested that DE can bridge this distance, bringing education closer to students than ever before (Gokool-Ramdoo, 2008). In these enlightened times, ICTs can be used as the vehicle to transmit this education at a distance.

In such a country as Guyana, where the only two campuses for UG are found on the coastland, unlike all the UG students, the issue of accessibility and distance has become paramount.

4.1.4 Question 4

Question 4 hovered around the learning-teaching quality at the UG. Since no previous study has been done on learners’ satisfaction of pedagogical practices, this question, and its corresponding responses, is very significant. Figure 7 indicates the various answers deposited by students.

As is evidenced from Figure 7, 41.1% of participants are satisfied with the learning-teaching quality at UG, 35.1% of them are not satisfied, and 23.9% of them are not
sure whether they are satisfied or not. It can safely be posited that the majority of students are not satisfied with the quality of education at the UG, which is cause for concern and the impetus to promote change.

The second part of Question 4 had to do with students expanding on their answer selection. While 71.4% of them (294) from the total sample (412) explained further, giving reasons as to why they decided one way or another, 28.6% of them (118) did not elaborate.

From the 71.4% who did respond to this second part of the question, a quick review of the responses can endorse that most of them are satisfied with the quality of learning and teaching at UG, while some are not, and yet still some are undecided. Even though the majority of them appear satisfied, they have clearly stated reasons why they are not entirely satisfied. The prevailing themes obviated are (1) satisfaction about learning-teaching quality, (2) doubts about learning-teaching quality, and (3) dissatisfaction about learning-teaching quality. A sample of the categorised answers from respondents is given below to support their contention:

_Satisfaction about Learning-Teaching Quality_

“For some of the courses I would strongly agree, but for the most of them I would select agree...simply because in some cases some of the learning must be accompanied by practical experiences... [...] But at UG this is not the case.... Theory and more theory and that’s it.”

_Doubts about Learning-Teaching Quality_

“Undecided, because different lecturers have different interests. Some show that they have the students’ interest at heart while some is just about the money. Other lecturers just expect you to know and tell you plainly they expect you to know, without even allowing you the chance to reflect”.
Dissatisfaction about Learning-Teaching Quality

“I disagree because, resources are limited almost non-existent […], classroom needs to be modernized, most lecturers are usually unapproachable and not widely read or knowledgeable”.

From the above, it is worthwhile to note that the learning and teaching quality within an educational institution can only be enhanced if there is commitment on the part of teachers (Biggs & Tang, 2007). This pledge involves continual growth and development in their areas of specialisation (Mizell, 2010) through transformative reflection (Ramsden, 2003). For students to learn successfully, teachers must teach successfully. For this to happen, there must be a mutual collaboration for improved pedagogical practices. The findings do suggest that there is room for development of the learning and teaching quality at the UG. If students are to improve their learning outcomes, then the quality of education delivery must be very high (Hattie, 2009; Biggs & Tang, 2011).

4.1.5 Question 5

Question 5 centred on what students feel could be done to improve learning and teaching at UG. The specific question was the following: “What do you think can be done to improve learning and teaching at UG?” This was an open-ended question and, in some regards, was a follow-up to the previous one (Question 4), which sought to gain insights on students’ perceptions of quality learning and teaching. While 80.3% of them (331) responded, from the total sample (412), 19.6% of them (81) chose not to answer.

From the 80.3% who did respond to this question, a quick review of the responses can validate that most of them are concerned with four main issues: (1) lecturer-student-content interaction; (2) active student participation; (3) their different learning needs, and (4) the learning-teaching tools and facilities. A sample of the categorised answers from respondents is given below to support their contention:
Lecturer-Student-Content Interaction
“More interaction is needed with lecturers and students in class. Most student usually become silent during lecture, but if they interact with the class as a whole students can learn from other students and lecturers can learn too”.

Active Student Participation
“First, make students more proactive... avenues to speak their mind and have a say on what they need to learn then be honest enough to do it. A more practical approach would supplement the many theoretical methods which are being applied currently”.

Diversity of Student Learning Needs
“Individual needs need to be met; because many people learn differently”.

Facilities/Learning-Teaching Tools
“Teaching and learning at UG can only be improved: Attitude of lecturers; tools used for teaching; environment of classroom, better equipped facilities, and more knowledgeable lecturers that are dedicated”.

With regard to ‘lecturer-student-content interaction’, it wouldn’t be unfair to say that these are the three protagonists of the learning-teaching process. The fact that respondents have highlighted this issue indicates that it is of concern to them. For students to improve their learning outcomes, and be able to engage in knowledge application, there must be an alignment among these principal actors (Laurillard, 1997; Moore, 1997; Wenger, 2001; Anderson, 2004). In other words, students must be able to interact and communicate with content that is authentic to them, similar to real-world issues. It is the teacher’s responsibility to create activities that are appropriate to the students’ level of understanding.

With respect to ‘active student participation’, students have also signalled this as a burning issue. From personal observation and experience, the system at the UG heavily embraces a traditional approach which does not lend itself to active student
participation. In the real world, students are expected to be engaged in team tasks in order to construct knowledge and negotiate meaning. This is in keeping with ‘constructivism’ (Piaget 1928; Vygotsky 1930; Dewey, 1938; Bruner, 1973; Jonassen, 1999). In fact, it is expected for learners to be able to deduce information centred on their individual realities, considering that they learn by observation, processing, interpretation and personalisation. Further to this, students cannot learn in isolation. It is in this light that Vygotsky (1978) developed ‘social constructivism’. All learning is social. For students to learn better, they must interact with each other (Langer, 1989; Lipman, 1991). By interacting with each other, they will construct knowledge and derive meaning from the world around them. Such a move is also endorsed by Biggs and Tang (2011).

With reference to ‘diversity of student learning needs’, this is yet another important plea from respondents. From personal observation and experience, pedagogical practices at the UG, for the most part, do not focus on student learning needs. Students are given tasks and they are expected to complete them, whether they ‘understand’ or not. Such a practice is counter-productive to student learning, and will have direct impact on their learning outcomes (Biggs & Tang, 2007). Similar to ‘active student participation’, ‘constructivism’ (Cooper, 1993; Wilson, 1997; Tapscott, 1998; Vygotsky, 1978) can respond to student learning needs. Biggs & Tang’s (2011) ‘constructive alignment’ is the answer for addressing student learning diversity.

Concerning ‘facilities/learning-teaching tools’, Ramsden (2003) affirms that there must be appropriate facilities for engaging with students at their level of understanding. To optimise student learning, consequently, there must be an immediate improvement to the UG’s facilities and to learning and teaching. Biggs and Tang (2011) apostrophise that high-quality learning and teaching ought to ensure that students demonstrate creativity, application and life-long learning. To this end, therefore, and from personal experience, there is a dire need for modernisation and quality assurance and enhancement: improvement in all the UG’s facilities, a restructuring of course offerings and curriculum, and an inclusion of more undergraduate and postgraduate programmes,
matching the entrepreneurial and developmental phases of the country (business, science, and technology, among others). The findings highlight that students are very concerned about the quality of learning and teaching, and steps should be taken to address these issues.

4.1.6 Question 6

Question 6 hinged on students’ familiarity with E-Learning/Technology-Based Education. This was a very important question for students, since the emphasis of this research paper is on implementing E-Learning practices at the HE institution. Figure 8 represents the students’ answer to this question.

![Figure 8. Students’ Familiarity/Non-Familiarity with E-Learning](image)

As is presented in Figure 8, 52.6% of the sample admitted to having familiarity with E-Learning, while 47.4% of them did not possess this knowledge. While there is a greater percentage of students who possesses knowledge of E-Learning, the percentage of students who do not have this familiarity does not contrast sharply, only by a difference of 5.2% (18). Even though the percentage of the sample familiar with E-Learning is very encouraging, the percentage who does not know of it is of great concern. It could
also mean that those who responded negatively simply had a basic understanding of E-Learning, but no hands-on experience. Since this is the age of technology, and there is so much buzz about it, one would think that all students would be familiar with it. This statistic highlights that it is not right to assume that students ‘know’. Such findings only underscore the need for students to have prior knowledge of any new educational initiative before it is adopted and implemented.

The second part of Question 6 centred on students providing examples of their understanding of E-Learning. While 44.9% of them (185) from the total sample (412) provided reasons of their degree of comprehension of E-Learning, 55.1% of them (227) did not elaborate.

From the 44.9% who did respond to this second part of the question, a quick examination of the responses can authenticate that most of them have some understanding of E-Learning/Technology-Based Education. Very few responses are given for those who did not have a clear understanding of what it entails. The two main areas highlighted are (1) familiarity with E-Learning, and (2) non-familiarity with E-Learning. A sample of the categorised answers from respondents is given below to support their contention:

*Familiarity with E-Learning*
“My idea of eLearning is completing courses online, doing eConferencing, online lectures, tests and other things that make up a course but eliminating the compulsory need to be in one geographic location (classroom). It is also any information technology technique or electronic device used in the classroom to teach and promote learning. It could entail the use of smartphones, multi-media, you tube videos and the like”.

*Non-Familiarity with E-Learning*
“I have never heard of this particular phrase but I have heard of persons getting an online degree. I have no idea how it works”.
Since the aim of this research is to explore the potential of using technology in educational delivery and its implementation at the University of Guyana, all of the responses given are of paramount significance. They ratify the need for all concerned parties at the UG to ensure that students are familiar with the use of technology and its tools to aid learning, if a successful implementation of E-Learning practices is to be engendered. In other words, students are to become familiar with the use of these technologies (Illinois Online Network, 2010), and pilot studies need to be effected to ensure that students are ready to commence with TEL.

### 4.1.7 Question 7

The emphasis of Question 7 was on students’ feelings about E-Learning/Technology-Based Education. The specific question was the following: “How do you feel about e-learning/technology-based education?” This was an open-ended question and, in some regards, was a follow-up to the previous one (Question 6), which sought to gain insights on students’ stance on E-Learning. While 70.1% of them (289) responded, from the total sample (412), 29.9% of them (123) chose not to answer.

From the 70.1% who did respond to this question, a quick review of the responses can corroborate that most of them do believe that E-Learning is the way to go, and that it can help to alleviate many of the pedagogical problems that the University is facing. The main issues highlighted by students are (1) accessibility, (2) cost effectiveness, (3) effective teaching tool, (4) improvement of student outcomes, and (5) flexibility. A sample of the categorised answers from respondents is given below to support their contention:

**Accessibility**

“I think it will make life easier for the majority, since not everyone has the time and ability to be on campus for classes e.g. the disabled and working class”.
Cost Effectiveness

“It should be implemented as it simplifies the process; it is cost effective and makes access to information easier”.

Effective Teaching Tool

“I think it’s very efficient and effective and it gives a chance for the lecturer to compress valuable information, which would have been very time consuming to do during normal lectures”.

Improvement of Student Outcomes

“I think it will improve overall results because the students will be able to learn at their own pace and time that is convenient for them and they will therefore have time for other activities in their lives”.

Flexibility

“I think that it is amazing since it offers flexibility which is not easily found in the traditional university. It makes it possible for persons to earn degrees at their own pace and around their busy schedules. It is making education more accessible to working people and is just another example of modernization in the digital age”.

The issues of ‘accessibility’ and ‘flexibility’ (Moore 1991, 1997; Raturi et al, 2011b) have been highlighted as one of the benefits of E-Learning by respondents. Considering, from the myriad of answers, that many students are geographically distant from the University, and that a very large number of them are part of the working class, they would prefer for education to not only be accessible to them, but also flexible. Such a claim is in accordance with what is embraced by Moore (1991, 1997) concerning ‘transactional distance’. Further to this, students also clamour for a certain ‘independence’ and ‘autonomy’ (Moore, 1972; Wedemeyer, 1981; Keegan 1986; Moore, 1994; Estaire, 2005; Hattie, 2009) over their learning. These are undoubtedly necessary components within the learning-teaching process, and especially in the ambit
of E-Learning. In essence, these must all be carefully negotiated with a view to making the students the principal benefactors.

A ‘cost effective’ education is highlighted by learners in many studies in HE (Lee & McLoughlin, 2010; Lai, 2011; Raturi et al, 2011b). Many students today cannot afford to pay for HE, and this is also the current situation at the University. Many students access student loans in order to cover their tuition (UG Registry 2010, 2014). Given the economic situation within the country, a ‘cost effective’ education would be a welcome reality. The literature reviewed in Chapter 2 attests to this assertion. It wouldn’t be unfair to suggest that such a gesture could see an influx of students registering for tertiary education.

Respondents are convinced that E-Learning is an ‘effective teaching tool’, and they are not mistaken. This is a fact, based on empirical evidence from studies done about the transformative potential of E-Learning to engender significant educational experiences (Lai, 2010; Raturi et al, 2011a; Raturi et al, 2011b; Gaffar, Singh & Thomas, 2011; Laurillard, 2012). The fact that many educational institutions are quickly adopting an E-Learning initiative is proof that it is efficient. Since Technology-Based Education is effective, as endorsed by the literature, students also believe that it will lead to an ‘improvement of student outcomes’. Constructivism does support ICTs in educational practices (Biggs & Tang, 2011). In E-Learning, students are also given the freedom to be involved in knowledge construction and application (Lam & Bordia, 2008; Landry, Payne & Koger, 2008).

A good number of student even make reference to the fact that since foreign Universities are employing E-Learning, it would also be beneficial for the UG to do so. This is in keeping with the current pervasion of online education in HE institutions (Garrison & Kanuka, 2004; Allen & Seaman 2007, 2010; Sheridan, 2009; Laurillard, 2012).
The findings for Question 7 do obviate that students are familiar with E-Learning; in fact, quite a number of them have already, or are experiencing, some form of E-Learning practice in their studies. There is mention of the use of ‘Facebook’, ‘Edmondo’, and other such electronic communication tools which aid information dissemination in the shortest possible time. Some students, however, are not too enthusiastic about it since they have concerns about Internet connectivity, the fact that they feel it might replace the F2F sessions which, according to them, is not entirely wise, and the fact that they simply do not trust that learning environment. While their concerns are not ill-placed, it will have to be up to the University to convince students that such a perception is erroneous. Students do believe, nevertheless, that the move to adopt E-Learning would be a step in the right direction.

4.1.8 Question 8

The focus of Question 8 was on whether or not students thought that E-Learning could actually enhance learning and teaching at UG. Bearing in mind their responses to Questions 6 and 7, it was now time for them to decide. Figure 9 portrays the responses to this question.

![Figure 9. Students’ Convictions on E-Learning for the UG](image-url)
As can be observed from Figure 9, **83.4%** of the participants are convinced that E-Learning can help to improve learning-teaching at UG, **2.3%** of them are not, and **14.4%** of them are not sure whether or not it could.

These findings are significant because they corroborate the previous two questions (Questions 6 and 7) that students feel very strongly about having E-Learning practices integrated into the didactic process at the UG. From the data, the highest percentage recorded is for those who strongly agree, followed by those who agree, those who are undecided, those who disagree, and lastly by those who strongly disagree. More than likely, from the way that Questions 6 and 7 were answered, it would not be unfair to suggest that those students who have misgivings about technology in the learning environment were those that responded to ‘Undecided’, ‘Disagree’, and ‘Strongly Disagree’. In essence, there is a general positive perception towards E-Learning. In other words, the respondents for this question (Question 8) have signalled that E-Learning can certainly have a positive impact on the pedagogical processes at the UG. Such revelations are valid.

**4.1.9 Question 9**

The centre of attention for Question 9 was to determine whether or not students were ready for E-Learning. The point must be emphasised that this question was a very important question for students to answer, since it is one of the research questions for this study – Research Question 1 (See Chapter 1, page 16). Since this study hinges on the exploration of E-Learning practices in education delivery at the UG, this is one of three research questions which would seek to verify the practicability of such a step.

347 students answered this question. Of the number that responded, **36.0%** of them (125) strongly agree that they are ready for E-Learning at the UG, **36.0%** of them (125) agree, **22.2%** of them (77) are undecided, **4.3%** of them (15) disagree, and **1.4%** of them (5) strongly disagree. Based on these figures, it would seem that **72.0%** of the respondents (250) are ready for E-Learning, **5.7%** of them (20) are not yet ready for it, and **22.2%** of them (77) remain unsure as to whether or not they are ready for it.
The above finding, though, are inconclusive. A careful examination of Question 6 (pages 74-76), which focused on students’ E-Learning familiarity, exposes that only 52.6% of participants (185), replying to that question, expressed familiarity with E-Learning, while the remaining 47.4% of them responded in the negative. As only 185 students confirmed their knowledge of Technology-Based Education, it therefore means that only they can signal their readiness for E-Learning. Figure 10 portrays those answers to this question from the 185 students.

**Figure 10. Students’ Readiness for E-Learning at the UG**

As presented in Figure 10, only 185 students positively answered Question 6 (pages 76-78), validating their acquaintance with E-Learning. From this number, as evidenced in Figure 10, 68.6% strongly agree, and 31.4% agree that they are ready for E-Learning. For this specific sample, though quite small, it is clear that are all in one accord for the advent of Technology-Based Education at the UG.

These findings are significant since they answer the research question (See Chapter 1, page 16), substantiating that at least some students are ready for E-Learning at the UG.
It cannot be ignored that these respondents are prepared to have technology integrated into the educational process. That is major.

The above results, concerning E-Learning readiness of the 185 students, are also inconclusive as considerable as they may be. They are insufficient because they only capture the selections of a sample from within that sample target (hereinafter referred to as sub-sample).

Considering the afore-mentioned, and in order to make these findings conclusive, it would be advisable to ask such a question within the next three years or so from now, with the objective of authenticating students’ understanding of E-Learning. They would now be in a better position to take an informed decision about their readiness for it.

The second part of Question 9 hinged on students depositing reasons concerning their readiness for E-Learning. Once again, only the 185 students who claimed familiarity with E-Learning (Question 6) can give valid reasons to support their claim.

From the 185 students who did respond to this second part of the question, a quick check of the responses can substantiate that all of them are ready for E-Learning/Technology-Based Education. The principal contention here is (1) readiness for E-Learning. A sample of the categorised answers from respondents is given below to support their contention:

**Readiness for E-Learning**

“The lack of e-learning/technology-based education at UG, and the presence of outdated teaching methods, are only limiting the quality of education that students at the university are receiving. I’m ready to move ahead, to be prepared so as to be able to compete with students from around the world who would’ve benefited from an e-learning/technology-based education”.

“Being introverted, a classroom style learning doesn’t always work for me. In fact it rarely does and uninspiring lectures make it even more difficult to stay in the classroom.
Well-prepared, innovative lectures have an appeal of their own though and I’m looking forward to the day when all my classes could be as stimulating”.

Given that the purpose of this study is to explore the potential of using technology in educational delivery and its implementation at the University of Guyana, each of the answers deposited is pertinent towards this end. In fact, it is quite clear that students are desirous of moving into the 21st century with sound educational practices. They are all cognizant, based on the findings, that it is time for the University to implement it, since technology is now ubiquitous. These respondents are convinced that student learning will be improved, while being able to work ‘autonomously, independently and collaboratively’ (Moore 1972, 1994; Raturi et al, 2011b).

With specific references to those students who claim readiness for E-Learning, there’s a longing for a connection, a connectivity with their learning and their real-life experiences. This is yet another very important concept in the learning-teaching process which has found relevance in E-Learning (Siemens, 2004). Knowledge is not static; in fact, it comes from different places and students should be allowed to discover these for themselves to draw personal meaning and relevance (Siemens, 2008). Student learning ought not to be convergent, but should be divergent. Learning is all about understanding the world around us and making connections with them (Downes, 2012). E-Learning and the WWW create networks and learning communities in which students can connect with each, thus experiencing a richer learning experience (Siemens, 2008; Downes, 2012).

It is necessary for students to be encouraged to separate themselves from a teacher-controlled environment to a learner-directed, autonomous environment, in which they find their own information, and create knowledge by engaging in networks away from the formal setting. Inter-personal communication is still necessary, however their personal interests and preferences – rather than institutional requirements and choices – are the key motivations for their engagement with more knowledgeable others in their learning.
4.1.10 Question 10

The focal point of Question 10 was to authenticate what form of E-Learning students desired. Similar to Question 9, it must be established that this question was another essential one for students to answer, since it is another of the research questions for this study – Research Question 2 (See Chapter 1, page 16). In view of the fact that the primary axis of this research is to investigate the practicality of E-Learning at the UG, it is only wise to determine the form of E-Learning that would best meet students’ needs.

341 students answered this question. From the number that responded, 26.4% of the participants (90) preferred ‘Web-Enhanced/Facilitated’, while 57.8% of them (197) selected ‘Blended Learning’, and 15.8% of them (54) chose ‘Fully Online’.

The above figures, however, are inconclusive. A careful look at Question 6 (pages 74-76), which dealt with students’ familiarity with E-Learning, reveals that only 52.6% of respondents (185), who answered that question, indicated that they were familiar with E-Learning, while the remaining 47.4% of participants signalled that they were not familiar with it. Since only 185 students pointed out their acquaintance with Technology-Based Education, it therefore means that only they are capable of deciding on the form of E-Learning that best suits them. Figure 11 shows evidence of those responses from the 185 students to this question.
As is exhibited in Figure 11, 19.4% of them chose ‘Web-Enhanced/Facilitated’, 69.7% preferred ‘Blended Learning’, and 10.8% selected ‘Fully Online’. For this specific sample, though quite small, it therefore follows that for their preference for the form of E-Learning, their first choice is ‘Blended Learning’, followed by ‘Web-Enhanced/Facilitated’, then by ‘Fully Online’.

The percentage of students who chose ‘Blended Learning’ is considerably higher than those who chose ‘Web-Enhanced/Facilitated’ and ‘Fully Online’. In fact, the percentage of students in support of ‘Blended Learning’ is almost four times that of those who opted for ‘Web-Enhanced/Facilitated’, and almost seven times that of those who selected ‘Fully Online’. These results are important because they answer the research question (See Chapter 1, page 16), corroborating that at least some students are indeed ready for a specific form of E-Learning at UG. Even though they may seem to prefer one specific form over another, the fact cannot be effaced that they all have signaled
their desire to have technology incorporated into the learning-teaching process. That is significant.

Stemming from the above results, concerning the preference of E-Learning form of the 185 students, they are also inconclusive as weighty as they may be. They are inadequate because they do not give a panoramic view of the choices of the entire sample target, but that of a sub-sample (Leedy & Ormrod, 2013).

In light of the above, and in order to make these results conclusive, it would be worthwhile to ask such a question within the next three years or so from now, with a view to substantiating students’ understanding of E-Learning. They would now be in a better position to take an informed decision about their choice of E-Learning form.

The second part of Question 10 hovered over students explaining why they chose one form of E-Learning over another. All 185 respondents did answer this question. A quick inspection of the responses can confirm that students are prepared to welcome E-Learning at the UG; in fact, they have supporting reasons for their selection of E-Learning form: (1) web-enhanced/facilitated, (2) blended learning, and (3) fully online. A sample of the categorised answers from respondents is given below to support their contention:

**Web-Enhanced/Facilitated**

“I appreciate the web-enhanced/facilitated form of e-learning because it is used as a supplement to the traditional face to face learning experiences. I believe some level of interaction is necessary between lecturers and peers. Access to the course material online paired with f2f seems to be better suited to my learning process”.

**Blended Learning**

“I don’t believe in its current state that the University is capable of delivering “Fully Online” program. I believe a blended program should be implemented as a pilot program at first to ascertain the University's capabilities. With that understood, the
amount of online content can be gradually increased with some mechanism to determine effectiveness”.

**Fully Online**

“FULLY ONLINE (The majority of course content, assignments, discussions and interaction is delivered via the Internet and include few face-to-face instructional meetings). In this way I get to work and earn my degree”.

In relation to the above, as can be seen, the students are even more eager to embrace ‘Blended Learning’, since they feel that the F2F component should not entirely be thrown out the window. Their claim is justified because F2F teaching is still a powerful means of stimulating learning (Bershin, 2004; Sheridan, 2009; Raturi et al, 2011b; Livingstone, 2013). Since theory is synonymous with practice, in today’s educational context, given that many programmes are practice-based, ‘Blended Learning’ would be highly favoured and considered a welcome reality.

Taking into consideration that the intention of this research is to *explore the potential of using technology in educational delivery and its implementation at the University of Guyana*, each of the replies provided, towards this end, is relevant.

**4.2 UG Teaching Faculty E-Learning Survey**

From the sample size for the UG Teaching Faculty (257), the return rate was **138**, just about **53.7%** of the sample target. Of the 138 survey responses, 136 were fully complete, with two being incomplete.

**4.2.1 Question 1**

Question 1 hinged on the way in which lecturers perceived the current pedagogical situation at the University. The specific question was the following: “*How do you view the current learning-teaching situation at UG?*” This was an open-ended question, which sought to generate insights from lecturers about this phenomenon. While **96.4%** of the participants (133) answered this question, **3.6%** of them (5) did not do so.
From the 96.4% who did respond, a quick review of the responses can validate that most of them are concerned with the learning-teaching situation at the UG. The dominant themes mentioned are (1) traditional approach, (2) deviation from current trends, (3) dissatisfaction with quality of education, (4) lack of learning-teaching resources and tools, and (5) lack of innovation. A sample of the categorised answers from respondents is given below to support their contention:

**Traditional Approach**

“The current learning-teaching environment at UG is one primarily of chalk-and-talk, archaic. The use of multimedia projectors is sometimes a challenge since one has to arrange for these devices to be set up and the room does not always allow for this”.

**Deviation from Current Trends**

“The current learning-teaching at UG is not to its best. In fact, even though there is potential for improvement, it is way behind a vast number of universities in the Caribbean, Central America North America, Asia, The Pacific Islands, Australia and Europe”.

**Dissatisfaction with Quality of Education**

“As a full-time lecturer at the University of Guyana, I must express my utter disappointment at the learning-teaching situation there. I would summarise the situation as chaotic, simply because it seems that education quality is no longer the subject matter for discussion”.

**Lack of Learning-Teaching Resources and Tools**

“The learning-teaching situation at the University of Guyana must be significantly improved if efficiency is to be achieved. Lack of adequate infrastructure, academic support, use and access to technology and learning materials are among the challenges faced by both lecturers and student”.
Lack of Innovation

“It lacks innovation. The lack to teaching aids such as audio visual equipment means that it is impossible to be creative in the classroom and maintain the attention of students in a technological era”.

A significant amount of responses centre on the traditional approach to learning and teaching. Words and phrases such as ‘out-dated’, ‘archaic’, ‘chalk and talk’, and ‘depressing’, among others, all allude to the fact that the situation there is one that leaves much to be desired, in the eyes of the Teaching Faculty. These sentiments corroborate the fact that the learning-teaching situation at the UG is still very traditional, and that lecturers are dissatisfied with the quality of education being offered.

A few of the responses point to the need to use ICTs to improve pedagogy at this HE institution. In this regard, some even shared experiences of studying abroad where the situation was much better, alluding to the fact that international Universities are already engaging with ICTs. There is reference to the need for facilities to be improved. This is also another very important aspect, when it comes to the execution of one’s duties. Many of the respondents expressed concern about this, revealing that the current resources and facilities at the institution do not lend themselves to innovation. As noted by Ramsden (2003), in order to effectively engage students at their level, there must be suitable facilities and resources to this end.

From personal observation and experience, as a former student and as a full-time lecturer at the UG, the pedagogic situation has remained the same for more than a decade. The facilities and resources available at the institution cannot adequately address students’ learning needs, and most certainly do not equip lecturers with the tools needed to teach effectively. As deposited by Biggs and Tang (2007, 2011), effective learning can only be engendered from effective teaching. For effective teaching to take place, Teaching Faculty has to be endowed with the necessary pedagogic tools. The general feeling of lecturers, however, was that the situation could be improved. These findings suggest that the current learning-teaching situation at UG
needs a complete restructuring, with a view to embracing a more modern approach to didactics.

4.2.2 Question 2

Question 2 centred on whether or not lecturers thought that learning and teaching at the UG was at its best. In some regard, this was a follow-up to the previous question (Question 1). Figure 12 demonstrates the various responses tendered for this specific question.

As is highlighted in Figure 12, 4.3% of the respondents find the learning-teaching situation to be at its best, 87.7% do not share that view, and 8.0% remain unsure as to whether or not it is so. It must be noted that the individual percentages for those lecturers who disagree and strongly disagree exceed those who are undecided and those who agree and strongly agree. Even when combined, those percentages still surpass them. The fact that the 87.7% disagree is indicative that the situation is definitely not at its best, and therefore needs urgent attention, if it is to improve. These findings validate
the responses provided in Question 1, where 96.4% of the respondents had agreed that the pedagogical situation at the educational institution warranted urgent attention.

The second part of Question 2 dealt with lecturers elaborating on their chosen answer. While 90.1% of them (125) from the total sample (138) provided reasons to support their stated reply, 9.9% of them (13) did not elaborate.

From the 90.1% who did respond to this second part of the question, a quick check of the responses can substantiate that most of them are in agreement for educational reforms at UG. The common cry, similar to answers provided in Question 1, is that there is (1) a lack of diversified pedagogy, (2) a lack of flexibility and innovativeness, and (3) a lack of educational resources and tools. A sample of the categorised answers from respondents is given below to support their contention:

*Lack of Diversified Pedagogy*

“If learning and teaching at UG were at its best, then it would have been doing everything in its power to ensure that quality is assured, ensured, enhanced and sustained. It would have been employing all pedagogical methods relevant to improving student learning. Sadly, this is not the case hence the need for serious reformation to take place at all levels of this institution”.

*Lack of Flexibility and Innovativeness*

“No lecturer is allowed the opportunity to change the course outline it must go through a process, and even though I understand that certain steps must follow procedure, the time such will take to be implemented is too long and tedious”.

*Lack of Educational Resources/Tools*

“While I acknowledge the efforts that have been made to foster a suitable learning-teaching situation that would be of benefit to all stakeholders, the situation is clearly not at its best for obvious reasons. The morale of both staff and students is low primarily due to shortage of adequate resources”.
Regarding ‘lack of diversified pedagogy’, this can only be improved if Teaching Faculty is engaged in transformative reflection (Biggs & Tang, 2007). Transformative reflection creates the space for staff members to grow and develop professionally. In terms of professional development, Mizell (2010) establishes that the sustainability of the educational institution depends heavily on staff development. This assertion is embraced by Biggs and Tang (2011), Lunenburg and Ornstein (2012), and Lingam (2012), among others.

With respect to the ‘lack of flexibility and innovativeness’, some have made reference to the University Administration as contributing to the current undesired learning-teaching situation. There is mention of words and phrases such as ‘bureaucracy’, ‘rotten leadership’, and ‘attitude of the administration’, among others. Such a situation becomes untenable when staff members feel that their voices are not being heard (Feinberg, 2003; Spillane, 2005). When lecturers react with such strong words it illuminates the point that the current leadership situation at the institution needs to be reexamined.

The ‘heroics of leadership’ (Spillane, 2005), where one educational leader micro-manages, is no longer relevant to today’s educational context, and may result in the partial or total ruin of the institution. From personal experience, lecturers are not given the opportunities to be innovative and flexible in their pedagogical practices. In fact, the length of time taken to get a new educational initiative approved would discourage anyone from continuing with it. It must be noted that for any educational organisation to thrive, there must be a distribution of leadership (Spillane, 2005; Lunenburg & Irby, 2006; Northouse, 2007; Lingam, 2012), where all voices are heard, making room for all stakeholders to take decisions collaboratively about the functioning of the institution.

Another prime concern is the ‘lack of educational resources/tools. Even the findings from the UG Students survey clearly indicate that this is a major concern and challenge for the University. One cannot teach if one does not have resources and tools. One cannot learn if one does not have these resources and tools to aid learning. In other
words, these resources and tools are a prerequisite for effective teaching and effective learning (Hattie, 2009; Biggs & Tang, 2011).

As can be seen from the above, these are issues that are vital to the successful educational practices and measures need to be put in place to address them, if the UG expect to adopt E-Learning.

4.2.3 Question 3

Question 3 hovered around whether or not lecturers thought that the learning-teaching situation at UG could be improved. Figure 13 presents the varied responses deposited.

As can be seen in Figure 13, 93.4% of the respondents find that the learning-teaching situation can be improved, 2.2% oppose this view, and 4.4% are uncertain whether or not it can be. The individual percentages for those respondents who agree and strongly agree surpass those who are undecided and those who strongly disagree. Those percentages still exceed them, even when added together. The fact that the greater part of the participants agrees and strongly agrees indicates that the situation needs to be improved. These figures are in keeping with the way in which Questions 1 and 2 were
answered. There is consistency. In other words, most of the respondents are dissatisfied with the current learning-teaching situation at the UG, for which their replies now show that indeed there is much room for enhancement.

For the second part of Question 3, lecturers had to expand on their preferred answer. While 83.3% of them (115) from the total sample (138) deposited reasons in support of their selected answer, 16.7% of them (23) did not provide any.

A quick perusal of the responses, provided by the 83.3% who did respond to this second part of the question, validates that all of them do believe that the situation can, and needs to be, enhanced. Those who were undecided, or strongly disagreed, did not offer any explanations as to why they felt that way. Added to this, the sentiment coming through is one of great concern for the University, and how it will see itself in the near future. The major issues highlighted here are the (1) need for accessibility, (2) need for curricular reforms, (3) need for diversification, (4) need for varied teaching tools/improved facilities, and (5) need for financial resources. A sample of the categorised answers from respondents is given below to support their contention:

**Need for Accessibility**

“Our modes of teaching have marginalized those individuals in the outlining areas, those who have met the University’s criteria but are unable to physically attend the University”.

**Need for Curricular Reforms**

“Improvement in all situations is possible. Curricula need to be updated, surveys need to be done for feedback, teaching methodology needs to be acquired by faculty as a must. Measures to ensure these are required”.
Need for Diversification
“The teaching-learning process must be improved if the university wants to continue to be called a tertiary institution, compete regionally and internationally while producing students and lecturers fully capable of being integrated into the global economy”.

Need for Varied Teaching Tools/ Improved Facilities
“Presently the learning-teaching situation is not at its best and so there is room for improvement. As stated before there is a lack of teaching resources/tools. The classroom environment can be made more comfortable and inductive to learning”.

Need for Financial Resources
“It goes without saying that failure to address this issue will mean that the University of Guyana would eventually cease to exist as a credible institution of higher learning. If this is to be done, significant financial resources need to be poured into the university ensuring that both the staff and the facilities are top notch”.

In addition to the already popular words and phrases in the answers provided, such as ‘accessibility’, ‘diversification’, ‘facilities’, ‘resources’, ‘methodology’, and ‘curriculum’, among others, a key word that runs through them is ‘funding’. A good portion of the respondents do feel that funding is one of the major factors that has the University in its current state. Allusions are made to the lack of funding that affects the quality and kind of resources and facilities within which lecturers and students operate. Such an affirmation is not ill-placed since, from personal observation, that is the reality of the situation.

The current political situation in Guyana is crippling the University. Even though the UG’s funding comes principally from student fees, and perhaps some amount of external funding, that is not enough. As has already been mentioned, many students at the UG are able to access education by means of student loans. From personal experience, yet again, most of these students do not repay these loans. This is another contributing factor to the current learning-teaching climate at the UG. Since it is a
public institution, however, the ‘powers that be’ need to do everything possible to ensure that the University remains relevant. Finance is vital to the sustenance of the UG, and to any educational institution (Northouse, 2007; Duignan & Cannon, 2011).

4.2.4 Question 4

Question 4 dealt with lecturer’s views with regard to the integration of E-Learning into the learning-teaching process at UG. The direct questions asked was the following: “How do you feel about integrating e-learning/technology-based education into the learning-teaching process at UG?” This open-ended question had the objective of garnering valuable thoughts and insights as to the practicability of embracing technology in education. 94.9% of the respondents (131) offered their personal views, while 5.1% of them (7) refrained from doing so.

The depositions on the necessity of incorporating E-Learning into the pedagogical practices at UG, all point to the urgency of the issue at hand. The 94.9% who chose to provide an answer to the question concur that technology in education at the UG will be a step in the right direction.

Their responses to support such a claim include (1) accessibility and flexibility, (2) improved student learning, (3) university-wide implementation, and (4) future employability. A sample of the categorised answers from respondents is given below to support their contention:

Accessibility and Flexibility

“It is a good step in view of the changing environment as well as the particular situation in Guyana. Some of my students have to travel very far and I can only imagine that being able to access necessary e-learning opportunities might save them a great deal”.

Improved Student Learning

“If we are to keep up with the advancing and changing global technology, then it is necessary to have e-learning/technology as a “fixture” in our curriculum delivery. E-
learning in my opinion greatly improves the students’ grasp of the sometimes complex concepts that are taught. It will add to the variety of instructional strategies to enhance the interest of students in their learning”.

*University-wide Implementation*

“I believe the time has come and there are admirable examples where staff has incorporated technology based education into their teaching process. E-learning has proven to be very effective in improving student learning; however much more needs to be done to ensure this becomes more of the rule rather than the exception”.

*Future Employability*

“Such based learning is essential and necessary at the University if our Graduates are to be competitive in a technologically advancing world. But it must not be the wherewithal to change the current state of things. It must be one of the means to bring the necessary and urgent changes”.

In support of the replies tendered, Livingstone (2013), in his paper about implementing hybrid learning at the UG, outlines that the University, through its Administrative Body, will have to work collaboratively with all relevant stakeholders, with a view to ascertaining that all of these matters are addressed. Such actions will guarantee that the institution does not become redundant.

Even though some suggest that it may not be wise to do so immediately, they are in accord that it definitely will be worthwhile, once all of the structures are in place to accommodate it. For any E-Learning initiative to be introduced into any educational organisation, as espoused by Sharma (2008b), every aspect of its introduction must be carefully considered.

With reference E-Learning, from personal experience, as a student, it will help to solve many of the issues facing both lecturers and students, be it time, transportation, or other. It creates the space for accessibility, flexibility and independence (Moore 1972, 1994).
With regard to integrating E-Learning into the educational experiences of UG students, the literature reviewed in this study (Carry & Willis, 2001; Martyn, 2003; Lapointe & Reisetter, 2008; Williams & Williams, 2010) has clearly established why this would be a good move, endorsing the view that it will dramatically improve student learning. Thus, the lecturers’ feelings about it are in keeping with current trends.

In addition to the above, lecturers seem to believe that it should be implemented across the University, and not just for certain Faculties. They strongly feel that it should be made the ‘rule rather than the exception’. For the University to be able to appraise the benefits of E-learning, it must be felt throughout the length and breadth of the institution. A ‘University-wide implementation’ strategy will encourage a gradual transformation towards this instructional delivery mode.

A vital issue that concerns lecturers is the ‘future employability’ of its graduates. Biggs and Tang (2011) reveal that Universities need to choose graduate outcomes that are aligned to course, programme, and institution outcomes, and especially to employers’ demands. At the UG, this is a problem area. From personal experience and observation, many students, upon graduation, find great difficulty in getting employed simply because their graduate attributes do not match those of their potential employers. Owing to this, many of them usually feel that their four years have been wasted. This is not the kind of situation that any University would want to encourage.

In today’s world, everything is moving in the direction of technology adoption. It is in this light that students ought to be prepared, so that they are able to face the 21st century challenges successfully. One way of ensuring this is to integrate Technology-Based Education into the instructional practices at UG. This is what will be the precursor for student success outside of the classroom: a cutting-edge curriculum infused with ICTs.

4.2.5 Question 5

Question 5 focused on the feasibility of an E-Learning programme at the UG. It must be established that this question was a crucial one for lecturers to answer, since it is the
third and final research question for this study – Research Question 3 (See Chapter 1, page 16). Bearing in mind that the principal axis of this research is to examine the potential of implementing E-Learning practices at UG, it was only sensible to elucidate whether or not such a venture is viable. Figure 14 obviates the lecturers’ replies to this question.

![Figure 14. Lecturers’ views on E-Learning feasibility](image)

As is exposed in Figure 14, 75.2% of the respondents find that an E-Learning programme at the UG is practicable, 4.4% oppose this position, and 20.4% remain unsure as whether or not it might be. The percentage of lecturers who selected the option ‘agree’ and ‘strongly agree’ are significantly higher than those who elected the remaining three options (‘undecided’, ‘disagree’, ‘strongly disagree’). Even if one were to add all those who selected the first two options, as against those who chose the last three, the combined percentages of those picked the first two options would be noticeably higher than those who preferred the final three choices. Notwithstanding these data, account must be given for those who are either undecided or opposed to this notion.
It is important to illuminate that these results are substantial because they answer the research question (See Chapter 1, page 16), corroborating that it is feasible for the University to adopt and implement an E-Learning initiative to boost the learning-teaching process. Such findings are significant.

For the second part of Question 5, Teaching Faculty had to provide additional information to sustain their specific answer choice. While 87% of them (120) from the total sample (138) went on to explain why they chose a specific form, 13% of them (18) did not give details.

From the 87% who answered this second part of the question, a fast scrutiny of the responses can authenticate that the majority of them are convinced that such a project is viable at UG. Many of them believe affirm that the UG is lagging behind, as compared with other more recognized Universities, and this will only jeopardise the credibility of the institution. A good number of them, nonetheless, have stated that certain things need to be put in place to ensure the efficacy of such an initiative. With reference to those structures that are to be established, it would be wise to conduct a full situational analysis (Print, 1993; Febrivania, 2011), together with a ‘Strengths-Weaknesses-Opportunities-Threats’ (SWOT) analysis, to determine what steps need to be taken to implement and institutionalise such a plan.

The dominant issues addressed here are their (1) conviction about E-Learning feasibility, (2) doubts about E-Learning feasibility, and (3) lack of conviction about E-Learning feasibility. A sample of the categorised answers from respondents is given below to support their contention:

**Conviction about E-Learning Feasibility**

“Every modern University that is worth its salt should have an e-learning programme. I believe that the University of Guyana is no exception. If we want to keep up with the top Universities then it is incumbent on the Academic community of the University to embrace e-learning because it will uplift the quality and standard of teaching and
learning among staff and students. Feasibility can be achieved with will, determination and proper funding”.

**Doubts about E-Learning Feasibility**

“I am undecided, because I am not sure that our students are ready for such a move in light of the socio-economic conditions that persist in Guyana. Secondly the University does not currently have the resources and equipment necessary for e-learning to be implemented. Nonetheless if those areas can be improved then e-learning is going to be in my opinion a progressive move”.

**Lack of Conviction about E-Learning Feasibility**

“I don’t think the University as it is ready for such a venture currently. UG is not an institution with “mature thinking” individuals (the staff / administration). Many have their own agenda. I am not sure the institution has the necessary to implement and sustain this type of programme. Of course, I would love to be proven wrong”.

Reference is made to the lack of ‘mature thinking’ and that some have their ‘own agenda’ on the part of the UG Staff and Administration. These are very strong accusations, and, from personal experience, they are not out of place. This can also be a deterrent to embracing any new initiative, as good as it might be. This kind of tendency needs to change, if the University is expected to move forward in this age and beyond. Biggs and Tang (2011) assert that there needs to be a *consciousness raising*, an awareness that every effort must be contributed towards ensuring that an educational institution offers high-quality education.

Taking into consideration that the intention of this research is to *explore the potential of using technology in educational delivery and its implementation at the University of Guyana*, each of the replies provided, towards this end, is relevant, regarding the practicality of E-Learning at the UG.
4.3 UG Administration/Statutory Officers E-Learning Survey

It is necessary to mention that the E-Learning survey for the UG Administration was identical to that of the UG Teaching Faculty. This was done with the intention of understanding how both Teaching Faculty and Administration feel about the current situation at the UG and the possible steps that could be taken to correct any deficiencies encountered.

From the sample size for the UG Administration/Statutory Officers (12), the return rate was 8, approximately 66.7% of the sample target. Of the 8 survey responses, all 8 were fully complete.

4.3.1 Question 1

The emphasis of Question 1 was on how the UG Administration viewed the current didactic atmosphere at the HE institution. The exact question asked was the following: “How do you view the current learning-teaching situation at UG?” This open-ended question had the aim of pricking the consciences of the Statutory Officers to get a glimpse of how they felt about what was happening at UG. All 8 of them, or 100%, gave their perceptions on the current learning-teaching situation.

A quick review of the responses can validate that all of them are in agreement that the pedagogical situation can be improved. The concerns raised centre around the (1) traditional approach, (2) lack of learning-teaching resources and tools/proper facilities, (3) lack of quality education delivery. A sample of the categorised answers from respondents is given below to support their contention:

*Traditional Approach*

1. “The current learning-teaching situation at the University of Guyana leaves much to be desired. The only didactic method that is currently used is face to face teaching. The entire system needs to be restructured because it has become obsolete”. 

Lack of Learning-Teaching Resources and Tools / Proper Facilities

“The University of Guyana has great potential, as it has done in the past, to produce excellent standards both in teaching and learning. However, sadly much needs to be done to improve the overall system and environment. The physical environment leaves much to be desired after 50 years”.

Lack of Quality Education Delivery

“The situation is one of delivery of lectures in keeping with the course requirement, while the student, for the most part, digests the relevant areas so as to regurgitate in the final exam”.

From the above, words such as ‘average’, ‘ancient’, ‘obsolete’, and ‘leaves much to be desired’, among others, are used to describe the dire situation in which the University has found itself. These concerns raised above are similar to those of the UG Teaching Faculty, which do put forth that both of these stakeholders are very much concerned about the educational climate at the UG. This outlook supports the claim that the learning-teaching situation at the UG is still very conventional. It is an attestation to the fact that the situation needs immediate attention, and that more needs to be done to bring it up to standard.

For the sake of gaining a good insight into the Administration’s thoughts on the current situation, it would have been good if they could have expounded a bit more on the issue at hand. Notwithstanding this, one of the respondents provided a substantial amount of information, highlighting the need for conducive learning environments, staff development, better resources and facilities, and remuneration, among others.

4.3.2 Question 2

The focus of Question 2 was on whether or not Administrators felt that learning and teaching at UG was at its best. This question was a follow-up to the one previously asked (Question 1). Figure 15 represents the different replies given for this specific question.
As is highlighted in Figure 15, **12.5%** of the respondents find the learning-teaching situation is at its best, **75.0%** do not share that view, and **12.5%** remain unsure as to whether or not it is so. The individual percentages for those Administrators who disagree and strongly disagree exceed those who are undecided and those who agree. Even when combined, the percentages still surpass them. The fact that the greater part of the participants disagrees and strongly disagrees is indicative that the situation is definitely not at its best, and therefore needs critical attention, if it is to get better. These results confirm the responses provided in Question 1, where all of the respondents had agreed that the educational situation at the institution warranted urgent consideration.

The second part of Question 2 dealt with Administrators elaborating on their chosen answer. While **87.5%** of them (7) from the total sample (8) provided reasons to support their stated reply, **12.5%** of them (1) did not elaborate. A quick appraisal of the responses can corroborate that they concur that the situation can be drastically enhanced. For the situation to get better, Administrators have to be willing to work
collaboratively (Spillane, 2005) with Teaching Faculty, and all other stakeholders, to invoke permanent change.

The major concerns raised are the (1) lack of proper facilities/funding, (2) lack of knowledge application, (3) accessibility, and (4) lack of student interest/motivation. A sample of the categorised answers from respondents is given below to support their contention:

**Lack of Proper Facilities/Funding**
“The University of Guyana currently is in serious financial problems and cannot by itself make the necessary improvements to bring it up to standards of university in the region. Student fee is ridiculously low, staff salary is most embarrassing, to say the least, and the environment of students and staff, facilities, lecturers remuneration, benefits, and other incentives, need urgent and necessary transformation in this new era”.

**Lack of Knowledge Application**
“My views are based on the quality of the student in the working environment. They are unable to apply their knowledge in decision making situation. It is better to be learning to explore more in teaching and learning”.

**Accessibility**
“In relation to the comment in question 1, the situation needs urgent consideration from all concerned parties and stakeholders. Not all students are able to access education at UG”.

**Lack of Student Interest/Motivation**
“Teaching is done; however, most students are not as interested in the subject as they are in the diploma obtainable upon completion”.
Similar to Question 1, the researcher thought that the respondents could have elaborated a bit more, taking into consideration that the sample size was small for this specific group. Three of the participants, nonetheless, provided great insight to the current situation, signaling their rationale for pedagogical transformation. The universal call, similar to replies offered to Question 1, as well as from the findings in the UG Teaching Faculty survey, is the need for accessibility, and for an upgrading of methodology, facilities, and resources, among others.

Interestingly enough, Administration highlighted that a ‘lack of knowledge application’ was of great concern to them. This is another popular theme emanating from both the UG Students and UG Teaching Faculty surveys. The aim of education is for students to demonstrate creativity, application and life-long learning (Biggs & Tang, 2011). While it is good that this has been deposited as an area to be addressed, it is disturbing because these are the very leaders who sit and decide the fate of the institution.

Further to this, another area identified was a ‘lack of student interest/motivation’. Any educational venture, old or new, must foster student interest and motivation. The notion that learning alone is only dependent on the student’s intelligence is no longer valid. Motivation is the most important factor in student learning since it plays a crucial role in the learning process. It is the interest that the student has towards his own learning and towards those activities that lead him to it (Lorenzo, 2004). According to the Instituto Cervantes (2003-2006), “Motivation is the interest and the active participation in the activities done in the classroom – actual or virtual – which is awakened in the learner” (p. 3). This definition of what motivation is highlights that the motivation stimulus must be maintained throughout the learning process. This means that the tasks must be engaging enough to give the student the impetus to do them.

In regard to the afore-mentioned, no student wants to do a task he may view as worthless. Neither does he want to do an activity, however valued, if he believes that he has no chance of succeeding. In both cases, doing them will be seen as a precious waste of his precious time. In other words, for a student to have a successful online learning
experience, *first and foremost*, he must value it, for what it is, value the outcome and expect success in achieving it. In simple terms, then, both the *high value* and the *expectancy of success* must be present, in order for effective learning to be realised in the learning environment.

The findings from Question 2, coming from Administrators, are alarming since they are the ones responsible for the good governance (Northouse, 2007) of the educational institution. While it cannot be ignored that there are many other factors that may prevent them from executing their duties, it highlights that there are leadership issues that need quick attention.

### 4.3.3 Question 3

The centre of attention for Question 3 was whether or not Administrators thought that learning-teaching situation at the UG could be enhanced. Figure 16 presents the varied responses tendered.

*Figure 16. Administrators’ views on improving learning and teaching*
As deposited in Figure 16, the entire sample (100%) finds that the learning-teaching situation can most assuredly receive a boost. Those who strongly agree equaled those who agree. These findings are very significant, since they elucidate that all of the participants are in one accord. These figures coincide with the responses to Questions 1 and 2. There is reliability. All of the participants are unhappy with the current didactic environment at the UG, for which their answers clearly demonstrate that there is much room for progress.

For the second part of Question 3, Administration had to expand on their preferred answer. While 75% of them (6) from the total sample (8) deposited reasons in support of their selected answer, 25% of them (2) did not provide any.

A fast perusal of these answers validates that all are in unison, regarding the enhancement of all learning-teaching facilities and resources. The common thread running through them all is the image and relevance of the University in these modern times. Moreover, the prevailing themes established are the (1) need for varied teaching tools/improved facilities, (2) need for collaboration, and (3) need for motivation. A sample of the categorised answers from respondents is given below to support their contention:

**Need for Varied Teaching Tools/ Improved Facilities**

“For effective learning and teaching to take place there must be necessary facilities and conditions, supportive resources and materials, good human resource base (qualified, skilled and consistently trained staff) and good leadership and management/administrative systems”.

**Need for Collaboration**

“Any learning-teaching can be improved. Nothing is cast in stone. For it to be improved, all parties have to put their creative juices together and pave the way forward for the most cherished asset of the University: the students”.


Need for Motivation

“Motivation for both staff and students go a long way towards improving and supporting teaching and learning environments”.

Besides the already common phrases and words provided like ‘facilities’, ‘resources’, ‘methodology’, ‘motivation’, and ‘curriculum’, among others, interesting terms that emerge from these Administrators are ‘good leadership’ and ‘management/administrative systems’. It seems almost ironic, since they are the ones in the leadership positions, at the helm of the University. Could it mean that they are displaying ‘bad leadership’, and that there are ‘poor management/administrative systems’? It can be argued that since the adjective ‘good’ is used to describe what they would like to see, it wouldn’t be thoughtless to suggest that the current leadership styles are ‘bad’.

The issue of educational leadership and its pertinence for the effective functioning of educational organisations, in this century and beyond, is relevant (Sharma 2008a, 2008b; Biggs & Tang, 2011; Lingam, 2012). From personal observation, the UG presents a very unique situation, where the input and participation by members of staff is minimal. The decisions taken, regarding administrative and pedagogical practices, are done by senior leaders, and all those other leaders in very ‘high’ offices in the University. They decide what is best for the various Faculties of the University, and lecturers are forced to simply abide by whatever they say. Some of the pertinent issues are not addressed due to ‘exclusive participation’ in decision making. There is no inclusivity (Spillane, 2005) and no active participation, on the part of lecturers.

‘Good leadership’ (Sharma 2000a, 2000b, 2008a, 2008b, 2008c; Duignan & Cannon, 2011; Lingam, 2012) entails the provision of opportunities for all stakeholders to work together and help build ongoing collaborative structures that encourage them to take leadership. They can create the environment, the time and the opportunities for leadership to arise. By sharing responsibility for making decisions and exercising leadership, leaders let the staff know that their voice is important and that they are
partners in making the institution a place where all can thrive. Leaders need to exercise faith and confidence in them to use their initiative in planning for the learning-teaching process. Lecturers need to be encouraged to share their ideas and develop their talents. They need to be given the freedom to explore new and creative ways of teaching their students. Good leadership will address all the concerns that Administration has raised in this section. This is the impetus for promoting and fostering high-quality education at the UG.

### 4.3.4 Question 4

The focal point of Question 4 was on Administration’s perception of incorporating E-Learning into the learning-teaching process at the UG. The specific question asked was the following: “How do you feel about integrating e-learning/technology-based education into the learning-teaching process at UG?” The aim of this open-ended question was to obtain insights about the likelihood of espousing technology in education. 100% of the respondents, all 8 of them, answered this question.

A review of the answers above highlights that all of the respondents do believe that it is a worthy investment, once all of the structures are in place to accommodate it. The areas signalled as important are (1) positive step, and (2) accessibility and flexibility. A sample of the categorised answers from respondents is given below to support their contention:

**A Positive Step**

“This is a bold step in the right direction. Many good Universities have already latched on to E-learning. I would support integrating e-learning technology; however I do think that the University of Guyana has to put systems in place before they can deal with it.

**Accessibility and Flexibility**

“This may be a sound step, since one will not necessarily have to leave the comfort of one’s home more often than not.”
More common terms used are ‘accessibility’ and ‘flexibility’. Sharma (2008a, 2008b) upholds the view that every aspect preceding the adoption of any new educational venture in any educational context must be properly ascertained. The findings above are important because the respondents, the Administration, who are responsible for the growth and development of the University, have all tendered the affirmation that an E-Learning programme is vital for the UG’s future. Such a declaration cannot be ignored.

4.3.5 Question 5

The crucial point of Question 5 was the feasibility of an E-Learning initiative for UG. This question, without a doubt, was a critical one for Administration, owing to the fact that it is the third and final research question of this study – Research Question 3 (See Chapter 1, page 16). Taking into consideration that the primary aim of this research is to explore the potential of implementing E-Learning practices at UG, it was the right thing to do, to confirm whether or not such an endeavour is practicable. Figure 17 underscores the chosen answers.

![Figure 17. Administrators’ views on E-Learning feasibility](image-url)
As is exposed in Figure 17, **100%** of the respondents (8) find that an E-Learning plan at UG is practical. That is very encouraging. Important to note is that the majority of the sample ‘agree’, rather than ‘strongly agree’, which indicate that perhaps there are issues that need to be considered before the adoption of this new educational initiative.

It is imperative to shed light on the fact that these findings are considerable because they answer the research question (See Chapter 1, page 16), validating the feasibility for the University to espouse and put an E-Learning proposal into operation to heighten the learning-teaching process. Such findings are of profound significance for this study, since it is Administration who, to a great extent, has to take some of the most crucial decisions about pedagogy.

The second part of Question 5 required Administration to offer supplementary information to support their stated answer. While **75%** of the respondents (6) gave details for their preference, **25%** of them (2) refrained from doing so. The major issue considered in this section is (1) conviction about E-Learning feasibility.

**Conviction about E-Learning Feasibility**

“It is feasible because the University has the capabilities to offer E-learning to its students. The new internet cable should be operational soon, providing the campus with adequate bandwidth. We have the internet connections and other infrastructure; however, this programme should be supported with consistent power supply […]. The current vice-chancellor, along with most academic staff, is favourably disposed to such a programme, coupled with the fact that Internet access will become substantially cheaper with current input by GTT”.

The above answers all attest to the likelihood of E-Learning at the University. Taking into consideration that the goal of this research is to *explore the potential of using technology in educational delivery and its implementation at the University of Guyana*, each of the replies supplied, consequently, is of interest.
A comparative observation of the findings for the UG Teaching Faculty and Administration Survey reveal that both sets of respondents are in accord that change is imminent at the University, and it must now see itself challenged to move forward into the next generation.

Very interesting issues emerge like ‘Internet connection’, ‘Bandwidth’, ‘Internet cable’, ‘Infrastructure’, and ‘Support’, among others. The first three terms all relate to Internet Connectivity. The Illinois Online Network (2010) expounds that since the key components in developing an E-Learning programme is technology, Internet Connectivity must be duly considered, if the technology is expected to function effectively. For any LMS to work properly, connection to the Internet must be quite good and steady, or one may run the risk of not connecting at all. If one does get to connect, it may be at a very slow rate. This kind of situation, according to Lai (2010, 2011), may frustrate student learning.

Another very important term is ‘Infrastructure’. Infrastructure has to do with those physical services and structures that are needed in order for a system of some sort to function properly. This can be a severe deterrent to online learning development, and to good Internet Connectivity. This includes electricity and telecommunications, among others. Sharma (2008b) adds that equality and accessibility to ICT still remain problematic in developing countries, especially in establishing good infrastructure for ICT. According to Johansson-Fua (2005), information and communication technologies’ (ICT) initiatives are hindered by infrastructure, in that the supporting infrastructure cannot meet the demands of hardware facilities as well as cope with the maintenance needs of the existing ones. In this regard, it is vital to mention that the situation in Guyana, and at the UG, has improved over the years. Be that as it may, the critical message running through is that all of these issues needed to ironed out before an E-Learning initiative is undertaken, or its durability could be seriously threatened.

For the sustainability of any project, ‘Support’ must be continual (Northouse, 2007). It is perhaps the most fundamental issue in E-Learning. It is pointless to even think of
establishing an initiative if there are no plans in place to enable it to function and to give assistance, with a view to ensuring its prolonged existence. This is one of the principal prerequisites.

These are some of the issues highlighted by Administration that will naturally have to be addressed. Each one of them must be considered since they have a bearing on the longevity of the educational venture.

4.4 Summary of Findings
With special reference to the three surveys analysed, the following information is summarised:

UG Students’ Survey
1. 54.5% of respondents are not from the capital city, Georgetown.
2. 50.1% of the participants do not live in the capital city, Georgetown.
3. 68.9% of the respondents claim that education is easily accessible to them.
4. 41.1% of the students are satisfied with the quality of learning and teaching at the UG, 35.1% disagree, and 23.9% are undecided.
5. A number of issues must be addressed to improve the learning-teaching process.
6. 52.6% of the participants are familiar with E-Learning, while 47.4% are not.
7. 70.1% of the students welcome it, while 29.9% have reservations, or are unsure.
8. 83.4% of the respondents agree that E-Learning can improve the pedagogical situation at the UG.
9. 100% of the sub-sample is ready for E-Learning.
10. 69.7% of the sub-sample, who expressed familiarity with E-Learning, prefer ‘blended learning’, while it is 19.4% for ‘web-enhanced/facilitated’, and 10.8% for ‘fully online’.

UG Teaching Faculty Survey
1. 96.4% of respondents view the current learning-teaching situation as archaic.
2. 87.7% of the sample agrees that the learning-teaching situation is not at its best.
3. 93.4% of the participants concur that the situation can be improved.
4. 94.9% of the lecturers feel very strongly about E-Learning integration into the UG.
5. 75.2% of respondents confirm that it is feasible for UG to adopt E-Learning.

UG Administration/Statutory Officers’ Survey
1. 100% of participants perceive the current pedagogical context as out-dated.
2. 75.0% of the sample concurs that the learning-teaching situation is not at its best.
3. 100% of the respondents coincide that there is room for improvement.
4. 100% of the Administrators are enthusiastic about E-Learning incorporation into the UG.
5. 100% of the participants substantiate that E-Learning at UG is feasible.
CHAPTER 5
CONCLUSIONS
The last few decades, due to the spread of the Internet and web-based technologies, have seen the dramatic increase in E-Learning in different parts of the world, at different universities. Such a change has been necessitated due to the changing scenes in tertiary learning and teaching, the need to offer students more meaningful options, and the need to embrace student learning diversity (Biggs & Tang, 2011). Based on research conducted (Garrison & Kanuka, 2004; Dunlap, Sobel & Sands, 2007; Cooper, 2013), Technology-Based Education, rightly designed and implemented, has the potential to produce significant educational experiences.

This research has centred its attention on Exploring the potential of implementing E-Learning practices at the University of Guyana. The UG, to date, still espouses a traditional approach to learning and teaching, where all pedagogical practices, for the most part, are still conventional, and where the only instructional delivery mode is by F2F contact. Traditional DE print-based correspondence is still in vogue, which only benefits but a few students. Research has revealed that such a method, as much as it might involve students, is still teacher-centred and does not allow an emancipatory, student-centred approach to learning (Fraser & Bosanquet, 2006). It is in this light that this research geminated, which sought to shed light on current pedagogical practices at UG, and the steps that could be taken to enhance them with the aid of ICTs.

With reference to the research questions, aim and objectives of this study (See Chapter 1, page 16), three E-Learning surveys were designed for the UG Students, Teaching Faculty, and Administration. They were subsequently implemented, with the purpose of determining, through participants’ responses, the practicability of adopting Technology-Based Education for the HE institution. The results have shown that the University is generally ready for E-Learning and, consequently, steps should be taken to adopt it in accordance with the educational context of that HE institution. More specifically, these findings, in accordance with the research questions outlined, obviate the following: (1) 100% of the sub-sample seem to be ready for E-Learning; (2) 69.7% of the sub-sample
seem to prefer a ‘blended learning’ approach above the other forms of E-Learning, and (3) It is feasible to establish an E-Learning programme at the UG. Further to these results, other important findings arising from the data collected reveal that (1) while some students appear to be more satisfied that others, in terms of the learning-teaching quality, most of them concur that the situation can be improved; added to this, they also are in agreement that this can be achieved through the use of technology; (2) both lecturers and University Administrators are of the view that there is much room for improvement; in fact, they share the opinion that E-Learning would be a welcome reality at the institution.

**Significance of the Study**

As has been highlighted earlier in this research, this study is significant, since it is the *first of its kind* to be done about the UG. While the latest research done in the area of E-Learning at UG (Gaffar, Singh & Thomas, 2011) sheds light on the degree of lecturers’ readiness for the adoption of Web 2.0 in their pedagogical practices, there is currently no documented research about the UG, in Guyana, that (1) underscores students’ position about accessibility and equal opportunity in education; (2) highlights the extent of students’ satisfaction of current pedagogy and why there should be improvements; (3) brings to light students’ feelings about E-Learning and what it would mean for them; (4) underlines student preference for a specific instructional delivery mode; (5) draws attention to the stance of lecturers and Administrators about (a) the current learning-teaching climate at UG, (b) whether or not that situation could/should be improved, (c) whether E-Learning could foster this improvement, and (d) whether it is feasible for the University to introduce E-Learning to its students. Such findings, once carefully considered, can only have positive far-reaching consequences on the HE institution.

This research that has been conducted will assist Administration and instructional technology designers in supporting both teaching staff and students with technology integration in the learning-teaching process. By knowing both students and lecturers’ perceptions and convictions about the quality of learning and teaching, they could be further engaged, with a view to tailoring adoption strategies accordingly so that the
implementation process could be as smooth as is possible. Gaining such insights into the manner in which teaching staff and students value the pedagogical process may very well be the key to E-Learning adoption. Most importantly, it will inform faculty on how to identify their own commitments to the education profession and how these commitments, consequently, may directly impact on their acceptance of innovative change. The findings of this research will also be able to guide Administration on how best to deal with students and teaching staff who may be resistant to change, unwilling to see the benefits, and perhaps refuse to participate in best practices.

**Limitations**

No research, as good as it might be, is without limitations. For this study, since data collection was done through the use of online surveys, the limitations encountered were the following:

(1) Some Teaching Faculty and Administrators did not take the time to complete the survey. Due to this, the response rate was a bit low and thus the sample target was not met. Had the target been achieved, the findings would have been much more informative. Regarding the Students’ survey, even though the response rate superseded the sample target, it would have been good if a lot more students had participated.

(2) Some of the respondents who completed the surveys did not answer all the questions. The number of unanswered questions for Teaching Faculty and Administrators was very small. For the Students, however, quite a number of them refrained from answering, the highest being in excess of 100. It would have been worthwhile had they all responded.

(3) In relation to limitations 1 and 2, the time period to complete the online survey could have played a part in respondents either not answering the survey at all, or completing it partially. Time period can mean two things: (a) the amount of time needed to complete the survey and, (b) the period of time that the survey is open to respondents.
A major factor that could have influenced limitations 1, 2, and 3, above, was that the University was administering end-of-semester final exams to its students during the period in which the survey was implemented. For future online surveys for research purposes, it would be advisable to conduct it during a less busy period.

(4) A potential limitation of this survey could have been the sincerity and correctness of responses on the part of the participants. While such a possible limitation is acknowledged, it is assumed that respondents were honest and correct in their answers. It is also assumed that the anonymity of the survey responses supported the possibility of frank responses, and the question format assisted in triangulation (Mann & Stewart, 2000).

(5) Another limitation of this study was due to a lack of awareness regarding E-Learning (Question 6). Some students could not respond, in an informed way, to the form of E-Learning they desired. Based on the findings revealed in Chapter 4 of this study, nearly half of those who answered the question on E-Learning familiarity (47.4%) claimed that they were not acquainted with E-Learning. Due to this deficiency, their judgement about the kind of E-Learning was impaired. Since this is one of the research questions for this study, it would be worthwhile to conduct a study, at a later date, to ascertain this.

Future/Further Research
Future/further research can be done since there are a number of ways in which this study can be extended. They are as follows:

(1) The focus could be on the type of LMS to be used, and the kind of Web 2.0 technology features that students would like the LMS to possess.

(2) The questions on students’ satisfaction of learning and teaching, as well as the form of E-Learning (web-enhanced/blended/fully online), initially directed to students, could
now be answered by Teaching Faculty and Administration. It would be rather interesting to see what those findings would disclose.

(3) The rank of most of the lecturers at the University, part-time/full-time, falls between ‘Assistant Lecturer’ to ‘Lecturer II’ (UG Personnel Office, 2014). For future studies, consequently, it would be worthwhile to have a sample size yielding faculty demographics. A future comparative study could be done also only with full-time lecturers, on the one hand, and one with only part-time lecturers, on the other hand.

(4) An additional suggestion for future research would be to provide an option for a few hand-written surveys to accommodate teaching faculty with low technology use. Similarly, research could be conducted to directly target these low technology users and their perception of technology.

(5) An added proposal would be to conduct a few interviews with some of the respondents. From personal experience, interviews help to acquire deeper and detailed information not previously given. Such a practice would contribute to the richness of the study.

(6) Another suggestion for future research would be to conduct a longitudinal study over a 5-yr period, which would be very useful.

**Recommendations**

Bearing in mind the focus of this research paper, in accordance with its aim, research questions and objectives (See Chapter 1, pages 16), the following recommendations are offered, with regard to implementing E-Learning practices at UG:

(1) There first needs to be *consciousness raising* (Biggs & Tang, 2011) about the need to ensure effective teaching and its vitality in effective learning, before trying to implement E-Learning.
(2) A learning team (Biggs & Tang, 2011) could be established to facilitate self-improvement and interdependence through professional growth and development.

(3) There is an urgent need for effective leadership practices (Sharma 2008a, 2008b) at the institution. There needs to be strong pedagogic leadership (2008c), since the nucleus of any educative organisation is learning and teaching. Considering the focus of this research, the UG Administration will have to play a key role in the introduction and implementation of E-Learning to ensure effective didactic practices.

(4) It would be worthwhile to have a Centre for Leaching and Teaching and a Quality Enhancement Team/Department/Committee with responsibility for designing, implementing, institutionalising and sustaining the E-Learning initiative.

(5) There needs to be support and training for teaching staff and students for the longevity of the E-Learning initiative (Garrison & Kanuka, 2004; Sharma, 2008b; Illinois Online Network, 2010; Lai, 2011). A recommendation is to have an initial workshop specifically for teaching staff for mentoring in learning-teaching methods and the need for ICTs inclusion, since 87.7% of the Teaching Faculty (Question 2) is not happy with the current pedagogical context at the UG. Additionally, a dedicated student service and lecturer support centre needs to be established to assist students and lecturers with technology access not only to get computers with the correct software and Internet connectivity, but also to train them with the necessary skills to be successful in such an environment.

(6) In order for E-Learning practices to be executed, there must be a channel through which this can be done. From personal experience, as a student, the LMS that would best suit the UG’s educational context is Moodle. This is the recommended LMS for developing countries (Whelan, 2007; Whelan & Bhartu, 2007; Hogan & Kedrayate, 2009; Raturi et al 2011a, 2011b). Since the FE&H will be using Moodle from September 2014, it would be worthwhile to see it being utilised University-wide.
Another suggestion is to conduct a pilot study with Moodle, perhaps over a period of one to two months or so, to assess its effectiveness for E-Learning. This pilot study can also act as a means of on-going training for them. Valuable light can be shed on the degree of achievement of learning outcomes, student satisfaction, retention and success, and programme satisfaction, among others.

In light of recommendations 6 and 7, another would be to have blended learning as the instructional delivery mode, since this is the preferred mode highlighted by a sub-sample of students (69.7%) in this study (Question 10). A blended learning approach is the favoured instructional delivery mode in developing countries (Whelan, 2007; Whelan & Bhartu, 2007; Sharma, 2008b; Raturi et al. 2011a, 2011b). Before blended learning is adopted as the preferred form, it would be advisable to begin the process with web-enhanced/facilitated learning since 47.4% of students indicated their lack of familiarity with E-Learning. A gradual transition from ‘web-enhanced/facilitated learning’ to ‘blended learning’, after some time, would only serve to strengthen students’ and lecturers’ confidence in such an environment.

In light of the above, a successful introduction and implementation of E-Learning at the UG, as signalled by Livingstone (2013, p. 60) will necessitate the following:

“(1) Establishing a clear institutional direction and policy. (2) Increasing awareness and commitment. (3) Creating a point of support, quality assurance and enhancement and project management. (4) Creating a fund specifically for financial support and incentives, through the University, to commence the web-enhanced/facilitated course transformation process, followed gradually by blended learning. (5) Investing in a reliable and accessible technology infrastructure. (6) Selecting models strategically which prove to be exceptionally successful exemplars to effective learning and teaching. (7) Developing a formal pedagogical design support via the blended learning format. (8) Evaluating systematically the satisfaction and success of learning and teaching, technology and new course administration. (9) Instituting a task team to address issues, challenges and opportunities and communicate and suggest new directions to the University community”.
Fulfilling the demands of the above pre-requisites present a notable challenge to University Administration and other stakeholders. The literature reviewed has clearly established the vital role of learning technologies in education. What is the UG doing to respond to the rapid changes which are certain to dislocate its traditional framework and operational dynamic? The answer to this question lies in whether the UG’s educational leaders have the courage and vision to transform it into a 21st century institution. To ignore would be to disregard the core purpose of HE: scholarly inquiry by students and teachers. And as Mahatma Gandhi said, “We ignore, at our own risk”.

Educational technology offers a range of pedagogical activities addressing a wide range of learning outcomes. E-Learning can mimic standard classroom teaching but, essentially and most importantly, it offers possibilities of engaging learners in ways that are not possible in the classroom (Biggs & Tang, 2011). Technology is not the panacea for correcting problems in education, but must be viewed as a tool for effecting change in the way institutions teach and students learn (Gaffar, Singh, & Thomas, 2011).

In this age of ICTs, it behooves the UG to move swiftly in the direction of E-Learning, to give students a more broad-based learning, using a repertoire of learning and teaching tools and resources. Learning effectiveness is the key to high-quality education and, ultimately, the success of the educational institution. Considering that the core business of any HE institution is learning and teaching, all energies must be channeled into ensuring that it meets everyone’s expectations.

In order for learning and teaching to meet learners’ expectations, since the goal of education (learning) is to be achieved in them (Lunenburg & Irby, 2006), then there must be accessibility and equality in education and educational practices. In other words, all students must be able to benefit from equal access of educational opportunities. This will have a direct impact on those students who are living in hinterland areas, at a great distance from campus, or those who are not able to access education at all due to their geographical location. To satisfy this requirement, and in view of this research conducted, E-Learning will be able to bridge the gap making it very possible for all those who wish to pursue a University education.
This research can form part of the existing empirical evidence about integrating ICTs in education, and the need to transform HE learning and teaching. It can be used as a guide for those Universities in developing countries which are considering implementing E-Learning, and those which are yet to do so.
REFERENCES


Distance Education Info (2014). *What is Distance Education and Why Students Should Consider Enrolling Under a Distance Education Program.* Retrieved April 20, 2014, from http://distanceeducationinfo.com/what-is-distance-education/


IDCE UG. (2013b). Report on Distance Education at the University of Guyana. Georgetown: University of Guyana.


APPENDIX A

QUESTIONNAIRE FOR IMPLEMENTING E-LEARNING PRACTICES – UG STUDENTS


Quality Education is the availability of (1) adequate resources and facilities, relevant curricula and materials for the acquisition of skills, (2) trained teachers who use child-centred teaching approaches in well-managed classrooms, and (3) outcomes that encompass knowledge, skills and attitudes, linked to national education goals, and positive participation in society (Adams, 1993).

Purpose of the Research: This research seeks to explore the potential of using technology in educational delivery and implementing E-learning practices at the University of Guyana. To this end, an online survey has been prepared (see below) with the intention of collecting data to address this study’s research questions. This data will then be analysed and discussed with a view to arriving at judgments about the study conducted. Conclusions will then be drawn from the information presented and recommendations will be made for plausible E-learning solutions at the UG.

Confidentiality Statement: Please bear in mind that this survey is voluntary and that your responses will be fully confidential. The time that you take to complete it is hereby duly acknowledged and appreciated.

1. Are you from the capital city, Georgetown?
   YES    NO

2. Do you live in the capital city, Georgetown?
   YES    NO
3. Is education at UG easily accessible to you?
STRONGLY AGREE  AGREE  UNDECIDED  DISAGREE  STRONGLY DISAGREE

Please explain/elaborate on your answer

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4. Are you satisfied with the quality of learning and teaching at UG?
STRONGLY AGREE  AGREE  UNDECIDED  DISAGREE  STRONGLY DISAGREE

Why do you say so?

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5. What do you think can be done to improve learning and teaching at UG?

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6. Are you familiar with e-learning/technology-based education?
YES  NO

Please provide examples of your understanding of e-learning/technology-based education

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7. How do you feel about e-learning/technology-based education?

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[146]
8. Do you think e-learning/technology-based education can help to improve learning and teaching at UG?

STRONGLY AGREE  AGREE  UNDECIDED  DISAGREE  STRONGLY DISAGREE

9. Are you ready for e-learning/technology-based education?

STRONGLY AGREE  AGREE  UNDECIDED  DISAGREE  STRONGLY DISAGREE

Please explain why you think that you are ready

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10. What form of e-learning do you think will best suit your needs?

- **Web-enhanced/facilitated** (media technologies are used to supplement or enrich the traditional face to face [F2F] learning experiences. Web pages are also used to post syllabi, calendars of events and assignments, while video, audio or the Internet is to boost course content).

- **Blended learning** (a substantial amount of course content and material is delivered online and paired with F2F course activities).

- **Fully online** (the majority of course content, assignments, discussions and interaction is delivered via the Internet and include few to no face-to-face instructional meetings).

Why do you think that form is best for your needs?

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APPENDIX B

QUESTIONNAIRE FOR IMPLEMENTING E-LEARNING PRACTICES – UG TEACHING FACULTY


Quality Education is the availability of (1) adequate resources and facilities, relevant curricula and materials for the acquisition of skills, (2) trained teachers who use child-centred teaching approaches in well-managed classrooms, and (3) outcomes that encompass knowledge, skills and attitudes, linked to national education goals, and positive participation in society (Adams, 1993).

Purpose of the Research: This research seeks to explore the potential of using technology in educational delivery and implementing E-learning practices at the University of Guyana. To this end, an online survey has been prepared (see below) with the intention of collecting data to address this study’s research questions. This data will then be analysed and discussed with a view to arriving at judgments about the study conducted. Conclusions will then be drawn from the information presented and recommendations will be made for plausible E-learning solutions at the UG.

Confidentiality Statement: Please bear in mind that this survey is voluntary and that your responses will be fully confidential. The time that you take to complete it is hereby duly acknowledged and appreciated.

1. How do you view the current learning-teaching situation at UG?

2. Do you think this learning-teaching situation is at its best?
STRONGLY AGREE  AGREE  UNDECIDED  DISAGREE  STRONGLY DISAGREE

Why do you say so?

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3. Do you think this learning-teaching situation can/needs to be improved?

STRONGLY AGREE  AGREE  UNDECIDED  DISAGREE  STRONGLY DISAGREE

Why do you say so?

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4. How do you feel about integrating e-learning/technology-based education into the learning-teaching process at UG?

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5. Do you think it is feasible to have an e-learning programme at UG?

STRONGLY AGREE  AGREE  UNDECIDED  DISAGREE  STRONGLY DISAGREE

Why do you say so?

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APPENDIX C

QUESTIONNAIRE FOR IMPLEMENTING E-LEARNING PRACTICES – UG ADMINISTRATION/STATUTORY OFFICERS


Quality Education is the availability of (1) adequate resources and facilities, relevant curricula and materials for the acquisition of skills, (2) trained teachers who use child-centred teaching approaches in well-managed classrooms, and (3) outcomes that encompass knowledge, skills and attitudes, linked to national education goals, and positive participation in society (Adams, 1993).

Purpose of the Research: This research seeks to explore the potential of using technology in educational delivery and implementing E-learning practices at the University of Guyana. To this end, an online survey has been prepared (see below) with the intention of collecting data to address this study’s research questions. This data will then be analysed and discussed with a view to arriving at judgments about the study conducted. Conclusions will then be drawn from the information presented and recommendations will be made for plausible E-learning solutions at the UG.

Confidentiality Statement: Please bear in mind that this survey is voluntary and that your responses will be fully confidential. The time that you take to complete it is hereby duly acknowledged and appreciated.

1. How do you view the current learning-teaching situation at UG?

2. Do you think this learning-teaching situation is at its best?
3. Do you think this learning-teaching situation can/needs to be improved?

STRONGLY AGREE   AGREE   UNDECIDED   DISAGREE   STRONGLY DISAGREE

Why do you say so?

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4. How do you feel about integrating e-learning/technology-based education into the learning-teaching process at UG?

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5. Do you think it is feasible to have an e-learning programme at UG?

STRONGLY AGREE   AGREE   UNDECIDED   DISAGREE   STRONGLY DISAGREE

Why do you say so?