

## **Administration's perception about the feasibility of elearning practices at the University of Guyana**

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### **ABSTRACT**

Since the genesis of technology, some decades ago, the use of information and communication technologies in educational practices has been steadily increasing. In educational institutions, some form of elearning has been adopted. All over the world, in both developed and developing countries, many universities have embraced this alternative and exciting form of education delivery to enhance the pedagogical practices of their institutions, in order to cater for student learning diversity, and to bridge the geographical gap, making education accessible to all. Since elearning seems to be the catalyst to promote revolutionary instructional practices, the University of Guyana, still largely adopting a traditional approach to learning and teaching, finds itself in a peculiar situation. Taking into consideration the afore-mentioned, this study is based on the perception of the University of Guyana's administrative body about the feasibility of elearning practices at that institution. Using a mixed methods approach, the University's administrators were sampled purposively, by means of an online survey. The data were analysed empirically and the results show that while there is room for development, regarding educational practices, the University's administration generally believes that elearning practices are feasible and should be embraced, once key issues for their adoption are addressed. Recommendation is made for university-wide incorporation of elearning practices.

**Keywords:** *elearning; elearning practices; technology; ICT/ICTs; administrators; administration; technology-based education; higher education.*

### **INTRODUCTION**

It is public knowledge that the traditional approach to learning and teaching is hinged on teacher-controlled practices and strategies: the teacher directs, and the student obeys and follows unquestioningly. Smith (2000) puts forth that this traditional scenario, even if it engages students, is theoretical, and does not foster emancipation or critical thinking. Most of the teaching is done solely via the face to face (F2F) mode. Those students who are able to attend the university campuses benefit from traditional F2F sessions. Those who cannot make it to campus would profit from traditional distance education (DE) print/correspondence. The changing scenes in higher education (HE) at the turn of this century (Biggs & Tang 2011) necessitated a restructuring of didactic practices to embrace student learning diversity and deep approaches to learning. "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" (Biggs & Tang 2011, p. 3).

With the growing use of information and communication technologies (ICTs) in many settings, it was envisaged as a potential and viable resource for transforming educational practices, and for bridging the geographical divide which sought to prevent some students from obtaining access to education. With the passage of time, many universities in both developed and developing countries began experimenting with ICTs in different ways, paving the way for the promotion of elearning. According to Ally (2004, p. 5), elearning can be defined as "The use of the Internet to access learning materials to interact with the content, instructor and other learners [...]". As

espoused by Brown (2005), elearning has caused significant improvements in student learning. Elearning is making significant in-roads in educational practices of many HE institutions. It has been asserted that elearning can cater to the many disadvantages evident in the traditional classroom practices (inflexibility of resources, for example), since it fosters a flexible learning-teaching scenario (Lam & Bordia 2008; Williams & Williams 2010; Gyamfi & Gyaase 2015).

This is the peculiar situation which faces the University of Guyana (UG) which, to a large extent, still embraces traditional pedagogical practices. The situation is such that, despite this technology-dominated age, the 'chalk and talk' classroom practices are ubiquitous, where the teacher plays the role of the 'sage on the stage'. The sagely knowledge is given out in bits and pieces, and the students grasp whatever they can, if they can. Since elearning practices are now flourishing in a plethora of HE institutions across the globe, it is imperative for the UG, through its administrative body, to take cognisance of these rapid changes in the education landscape. It must be established 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) (Laurillard 2012) could help education adapt to a world that is rapidly changing in response to technology. Sound educational practices and effective educational leadership could create and sustain the environment necessary to embrace student learning diversity.

## **BACKGROUND AND CONTEXT**

Of the many goals contained in the UG's Strategic Plan 2009-2012 (UG 2009), one of them is "To achieve higher quality learning and teaching aligned with expanded national needs, especially in science and technology" (p. 28). Unfortunately, the UG's administration is not making good on its promise to provide "higher quality learning and teaching" to its students. This is evident, given that traditional forms of learning and teaching at that institution are still espoused (traditional F2F instruction and traditional distance education [DE] by print/correspondence) (Livingstone 2013a). Since the introduction of the National ICT Development Strategy to Guyana in 2006, there have been many advances made in technology use. Many educational institutions throughout the country are making decided efforts to engage both students and teachers in the use of ICTs. In spite of all this, however, the UG seems very slow to implement university-wide ICT pedagogy.

Since 1992, the UG, through its Institute of Distance and Continuing Education (IDCE), has sought to implement distance learning, offering a number of courses to its students in diverse parts of the country (UG Website 2014; IDCE 2014a). Since then to now, there have been many highs and lows in the DE programme due to lack of student interest in the subject matter or in the kind of instructional delivery mode. Enrolments would soar to approximately 600 students, then they would drop to about 60 (IDCE 2014b).

The UG became a part of the Caribbean Universities Project for Integrated Distance Education (CUPIDE) in 2006 (CUPIDE Website, 2006), a project instituted by the University of the West Indies (UWI) and the United Nations Educational, Scientific and Cultural Organisation (UNESCO) which has the overarching objective of developing and delivering quality DE programmes using ICTs. The UG has been engaging in the CUPIDE Project, however much has not been done to truly revolutionise learning and teaching. Further to this, an elearning workshop was conducted at the UG by a facilitator from the Commonwealth of Learning (COL) in 2009, in collaboration with the International Council for Open and Distance Education (ICDE) (ICDE Website, 2010; COL Website, 2010), in order to heighten awareness about the absolute necessity of ICTs in educational practices.

Given the UG's involvement in these various projects, some courses were offered online from the year 2007, through the IDCE. The Learning Management System (LMS) used was *Moodle* (a free and open source software [FOSS]). These courses were offered as an experiment to test the response of local students to online courses. There was an average enrolment of approximately 30 students. Some of these courses were completed, while some were discontinued because of lack of student interest. The enrolment for these courses was below 10 students. Due to the continued poor responses from students, however, 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 2014a).

Starting from September 2014, it is the hope of the UG's administration to offer four online degree programmes, a collaboration between the UG and the Open University (OU), UK (UG/OU Report 2013). The main objective of this initiative is to help make education more accessible to those who are geographically distant, as well as to make learning and teaching more flexible. Even though it has been decided that *Moodle* would be used as the preferred LMS, the specific instructional delivery mode (web-enhanced, blended, fully online) is yet to be determined. Additionally, the Faculty of Education and Humanities (FE&H), one of the UG's Faculties, has been engaging staff in *Moodle* workshops, with the hope of launching it in the FE&H, beginning September 2014, to allow teachers the flexibility to upload course outlines, lecture notes, and other pedagogical resources, and to allow students to familiarise themselves with this LMS and delivery mode (FE&H 2014).

## SIGNIFICANCE OF THE STUDY

The only major study conducted at the UG, with respect to improving pedagogical practices, relates to teaching faculty and student readiness for the use of Web 2.0 tools in the learning-teaching process (Gaffar, Singh & Thomas 2011; Singh 2014). Given this scenario, this study is a pioneer research because it is the *first of its kind* to be conducted at the UG, since there is no research evidence about the adoption of elearning practices for the institution. This study highlights the UG administration's perception about (1) the current learning-teaching climate; (2) the likelihood of improving all aspects of pedagogy; (3) the aptness of elearning to modernise and diversify didactics, and (4) the feasibility of establishing elearning practices.

## LITERATURE REVIEW

### Education For All

According to Dearing (1997, p. 7), "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). This concept was established in 1990 at a conference in Jomtien, Thailand. After a decade of slow progress, 1,100 participants from 198 countries gathered together, in the year 2000 in Dakar, Senegal, to reassess the effectiveness and reach of EFA, which resulted in the adoption of the *Dakar Framework for Action* (UNICEF 2012; The World Bank 2013; UN 2014) which had the overarching objective of achieving EFA by the year 2015.

The ultimate aim of EFA is *sustainable development* (Hargreaves & Fink 2004). The two most important frameworks emanating from this conference were the six EFA goals and the eight Millennium Development Goals (MDGs). “The EFA goals and the MDGs are complementary. When you fund education, you are securing progress towards all the Millennium Development Goals” (UN (2014, p. 1). 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, inclusion, better health and quality education, literacy, capacity development, sustainable lifestyles, strong partnerships and shared commitments. 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.

### **Educational Leadership**

In recent decades, the issue of educational leadership has been gaining considerable attention from all stakeholders within the educational context. Leadership is an integral part of any organisation and no organisation can function without it. Failure to have a leadership team would result in chaos, and an eventual ruin of the organisation. “The most important factor in the implementation of any pedagogical method in a department or faculty is its *leadership*” (Biggs & Tang 2011, p. 291). Leadership involves leaders who influence their followers to achieve common goals and objectives. These followers willingly obey the directives given by their leaders (Northouse 2007; Duignan & Cannon 2011). Bearing this in mind, it is just to suggest that the quality of leadership in the educational institution will determine whether or not any (new) educational initiative is adopted.

Recent studies in educational leadership have highlighted that it is a prerequisite for fostering good governance, which ultimately results in the delivery of high-quality learning and teaching (Lingam 2012; Lunenburg & Ornstein 2012; Livingstone 2013b, 2014). Effective leadership has the objective of ensuring that all plans and proposals are executed collaboratively, in accordance with the aim, vision and mission of the institution. Rutter and Williams (2007) establish that leadership within the educational institution must be effective, if student learning outcomes are to be maximised. For leadership to have the desired effect, it must be delegated/shared/distributed (Spillane 2005). Leadership distribution exists when followers work in harmony, actively participating in making decisions, setting targets, and monitoring their performance. Biggs and Tang (2011) establish that there must be different kinds of leaders, if a successful implementation of an initiative is to be engendered: (1) there must be process leaders who coordinate the different stages of its adoption and eventual institutionalisation; (2) there must be context experts responsible for technical matters and giving advice, wherever and whenever necessary, and (3) there must be political leaders who have sound knowledge of how the system works, to ensure a smooth implementation.

### **Elearning**

Over the past decade, elearning has become synonymous with sound educational practices in HE institutions in both developed and developing countries (Raturi, Hogan & Thaman 2011a, 2011b; Laurillard 2012; Gyamfi & Gyaase 2015). Due to rapid technological advancements, and the Internet’s capacity to connect time and space, elearning has become a formidable force in breaking down traditional barriers of learning and teaching. With digital technology, distance is bridged. Elearning has the potential to bring together cultures and societies and to pave new ways of thought, which are critical for the establishment of any learning technology in any cultural context (Jamlan 2004; Waldron 2009). Laurillard (2008, p. 140) asserts that “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 follows that the emphasis is on student learning. In fact, it is not merely using the Web for content delivery, but rather the specific way in which learning-teaching tools are designed to accommodate student learning needs and diversity.

Elearning is being embraced by these educational institutions, because of the benefits that are derived from this innovative approach. Lai (2011) reveals that for learners, elearning 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. As can be seen from the aforesaid, elearning has the potential to do what traditional forms of education cannot do: create the space necessary for making the learning-teaching process flexible and innovative. With such emancipatory approaches to learning and teaching, student learning outcomes can be optimised considerably.

## **METHODOLOGY**

A case study approach (Thomas, 2011) was used as this study's paradigm. This particular research type was selected, based on the fact that it offered the most suitable methods for a context-sensitive in-depth study of the phenomenon in question. The specific methodology used was mixed methods (Creswell 2009). The UG's administrative body was sampled purposively (Palys 2008), with the objective of answering the research questions.

### **Aim/Questions/Objectives**

This study's aim was to examine the administration's perception about the feasibility of elearning practices at the UG. The research questions of this study were: (1) What is the administration's perception about integrating elearning into the UG's educational context? and (2) Is it feasible to adopt an elearning programme at the UG? In relation to these, the specific objectives were the following: (1) Investigate the administration's perception about using learning technologies in education delivery at the UG; (2) Determine the feasibility of establishing elearning practices, and (3) Recommend the integration of elearning in instructional practices.

### **University Administration Population**

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 2014). At the time this study was done, the position of 'Chancellor' and Pro-Chancellor were still vacant, hence there were only 12 functioning administrators. The sample population of 12 was determined as the sample target, in accordance with Leedy and Ormrod (2013). These authors affirm that if the population size is smaller than 100, then all should be sampled.

### **Instrument Design and Implementation**

The instrument used in this study was an online survey which consisted of five open-ended and closed-ended questions, centred on the research questions. Three of these questions were designed using the '5-point Likert scale system', where additional space was provided for elaboration on selected answers. The remaining two questions were essay-type, and required longer responses. The questions focused on administration's view of the current pedagogical climate at the HE institution; their perception on whether the current educational practices could be improved through the use of technology, and their views on the feasibility of adopting an elearning programme at the UG. In addition to these elements, a research ethics approval number, a definition of 'elearning', a 'purpose of the research', and a 'confidentiality statement' were included.

Before formally sending out the survey to the UG's administration, a simple validity and reliability test was done (Radhakrishna 2007), using a cognitive interviewing test (CIT). This was to determine whether or not the survey was designed to measure what it was supposed to, minimising misinterpretation and uncertainty of questioned asked. Two individuals, outside of the UG's administrative body, participated in a trial run of the survey, and they completed the survey questions in reasonable time. Subsequent to there being no request for clarification, the survey link was officially sent to the UG's administration on May 14, 2014 to both their institutional and personal email addresses. The administrative body was given weekly reminders, urging them to complete the survey. After being open for 24 days, it was formally closed on June 7, 2014. Subsequently, an email conveying gratitude was sent to all participants of the study. Of the sample target (12), who should have all responded, given the small number, the response rate was 8, with a 66.7% return rate. All of the survey questions were completed by the 8 respondents.

### **Data Analysis**

The data gathered from the survey were analysed quantitatively and qualitatively. Quantitative data analysis made use of tables, figures and graphs. Data triangulation was also performed. Important to note is that that the survey questions were analysed individually, with the aim of answering the research questions. Qualitative data analysis was done by means of content analysis of the open-ended responses from this study's respondents. Keywords were given to the open-ended responses, based on the frequency of certain words and terms used, and also based on the general meaning of the answer given. Participants' answers were subsequently summarised and discussed.

## **PRESENTATION, ANALYSIS AND DISCUSSION OF RESULTS**

As was mentioned in the preceding paragraph, since only 8 of the 12 administrators completed the survey, they were used as the respondents for this study. The findings are presented, analysed and discussed below.

### **Question 1**

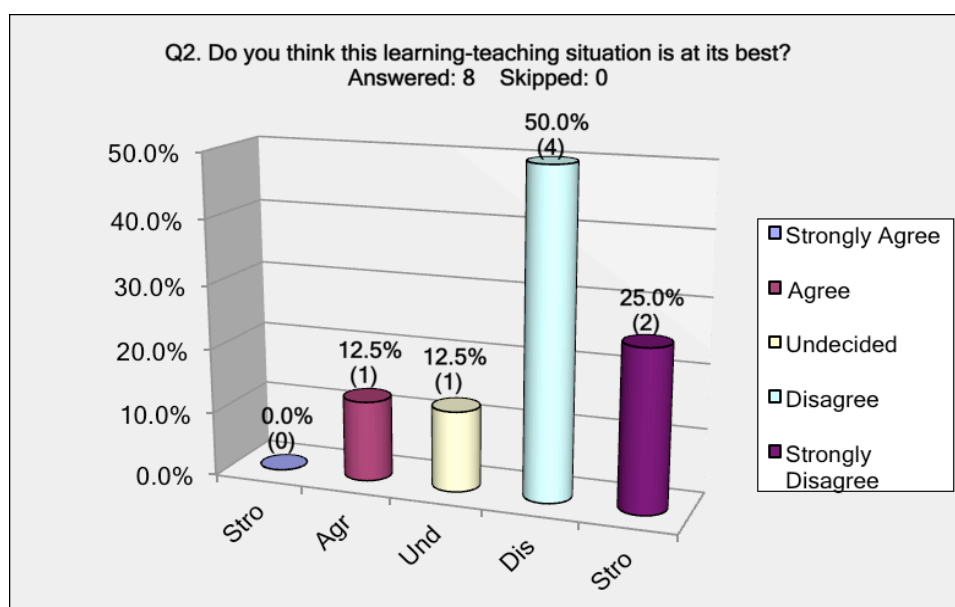
The emphasis of Question 1 was on how the UG Administration viewed the current didactic atmosphere at the HE institution. The exact question asked was "*How do you view the current learning-teaching situation at UG?*" This open-ended question had the aim of pricking the consciences of the administrators to get a glimpse of how they felt about what was happening at UG. All of the respondents gave their perceptions on the current learning-teaching situation. The

concerns raised centre around the (1) traditional approach, (2) lack of learning-teaching resources and tools/proper facilities, and (3) lack of quality education delivery.

From the respondents' submissions, words such as 'average', 'ancient', 'obsolete', and 'leaves much to be desired', among others, were used to describe the dire situation in which the UG had found itself. Respondents felt that the learning-teaching situation was not conducive for effective learning, and that a way should be paved to transform such a situation. 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. These concerns raised above establish that 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.

## Question 2

The focus of Question 2 was on whether or not administrators felt that learning and teaching at the UG was at its best. This question was a follow-up to the previous one. Figure 1 represents the different replies given for this specific question.



**Figure 1:** Administrators' views on learning and teaching

As is highlighted in Figure 1, 12.5% of the respondents find that 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 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 earlier responses where 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. 87.5% of the respondents provided additional information. 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.

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, is the need for accessibility, and for an upgrading of methodology, facilities, and resources, among others. Teaching resources at the UG are outdated, where the 'chalk and talk' method is still in vogue. Learning and teaching is mainly done from textbooks, and some teaching faculty may use some form of technology to try to augment and diversify their teaching sessions.

Interestingly enough, the UG's administration highlighted that a 'lack of knowledge application' was of great concern to them. Knowledge application should indeed be their concern, given that it is enshrined in the University's aim, vision and mission. Added to this, the core business of any educational institution should be to provide learning that matters. 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 a bit disturbing to hear this from the UG's educational leaders. These educational leaders are the ones responsible for ensuring that the UG embodies sound educational practices. It can therefore be assumed that leadership has not been as effective as it ought to be.

Another area identified was a 'lack of student interest/motivation'. 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 such a learning environment.

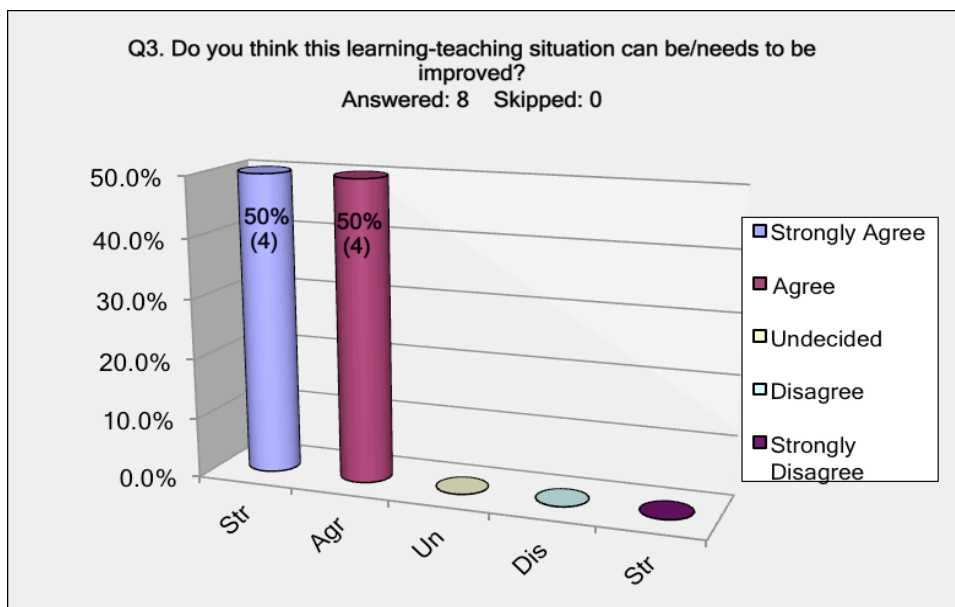
Any educational venture, old or new, must foster student interest and motivation. The notion that learning alone is only dependent on the student's intelligence is no longer valid. Motivation is *the* most important factor in student learning since it plays a crucial role in the learning process. It 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.

The findings from Question 2, coming from administrators, are alarming since good governance of the educational institution is a part of their mandate. 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. A quick appraisal of the responses corroborates that they concur that the situation can be drastically enhanced. For the situation to get better, the UG's administration has to be willing to work collaboratively (Spillane 2005) with teaching faculty, students, and all other stakeholders, to invoke permanent, positive change.

### Question 3



The centre of attention for Question 3 was whether or not administrators thought that the learning-teaching situation at the UG could be enhanced. Figure 2 presents the varied responses tendered.



**Figure 2:** Administrators' views on improving learning and teaching

As deposited in Figure 2, all of the respondents find 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. Respondents 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, administrators had to expand on their preferred answer. 75% of the respondents provided these additional clarifications. The common thread running through the responses is the image and relevance of the UG 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.

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 UG. 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 2008; Biggs & Tang 2011). From personal observation, the UG's approach to leadership is somewhat bureaucratic. The UG presents a very unique situation, where the input and participation by members of staff is minimal. Many of the plans are passed by leaders without much input, if any at all, from staff. The decisions taken, regarding administrative and pedagogical practices, are done by senior leaders, and all those other leaders in very 'high' offices in the UG. They decide what is best for the UG's Faculties, 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.

At the UG, there are hardly ever any professional development (PD) programmes that deal with pedagogical issues. Most of those PD programmes focus on administrative issues. In other words, administrative issues, as important as they are, receive more attention than pedagogical issues. The fact cannot be ignored that improved pedagogical practices can only come through PD which focuses primarily on pedagogy. That is one vital issue that needs urgent attention. The bureaucratic leadership style at the UG does not lend itself to innovation. The top-down management style at that institution is controlling and inflexible: all decisions relating to pedagogy usually pass through one or more leaders. It could therefore be suggested that this is the reason why the UG is in its current state.

'Good leadership' (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 (Livingstone 2014). 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 the UG's administration has raised in this section. This is the impetus for promoting and fostering high-quality education at the UG (Livingstone 2014).

#### Question 4

The focal point of Question 4 was on the UG administration's perception of incorporating elearning into the learning-teaching process at the UG. The specific question asked was "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. This was a very important survey question for respondents, since it sought to address the first research question of this study. 100% of the respondents answered this question. Respondents believed that it would be a worthy investment, once all of the structures are put in place to accommodate it. The areas signalled as important are (1) positive step, and (2) accessibility and flexibility.

Incorporating technology-based education at the UG would indeed be a positive step, since this seems to be the preferred approach being used by universities in both developed and developing countries (Hogan & Kedrayate 2009; Waldron 2009; Lai 2011; Gyamfi & Gyaase 2015). These respondents, the UG's administrators, are not oblivious to the use of technology and ICT tools in the educational process. As earlier mentioned, the UG is a part of the CUPIDE Project. Various elearning workshops, facilitated by a number of organisations, have been conducted at the institution. Once embraced, adopted, and implemented, elearning practices could be positively beneficial for the UG. As has been highlighted in the literature, elearning has the potential to cater for student learning diversity. One main benefit is the improvement of student learning outcomes through active participation and collaboration to complete tasks, resulting in a *community of learners* (learning community).

The issues of 'accessibility' and 'flexibility' are relevant to any educational context, especially in these modern times. Accessibility, is an important concept which simply establishes that education should be accessible to all those who desire to have it irrespective of their social class, ethnicity, background or physical disabilities (UNICEF 2011). Accessibility of education at the UG is a major issue. The UG is located in the capital city, Georgetown, with its main campus there, the Turkeyen Campus, and another campus, the Tain Campus, in another part of the country. Those are the only two campuses. Students attend the UG from all parts of the country. Not all those desirous of attending the UG can do so, because of the problems of distance and accessibility. Teaching at the UG is done via the traditional F2F and DE modes. Since the UG has not yet adopted an elearning initiative, education is not accessible to all. Education is accessible to those who are willing to make the sacrifice to travel to the capital city to attend the UG. Not everyone has the means to do so, especially those (potential) university students who are living in the hinterland regions of the country. Adopting elearning practices at the UG can alleviate this situation and open up the way for equal access to education. Education should be able to engage students, whatever their geographical location might be (Moore 1991, 1997).

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 (UNICEF, 2011). The increasing importance in equal access 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 individual will have in the future. To this end, an academic system that practises educational access and equality is a strong foundation of a society that is fair and flourishing.

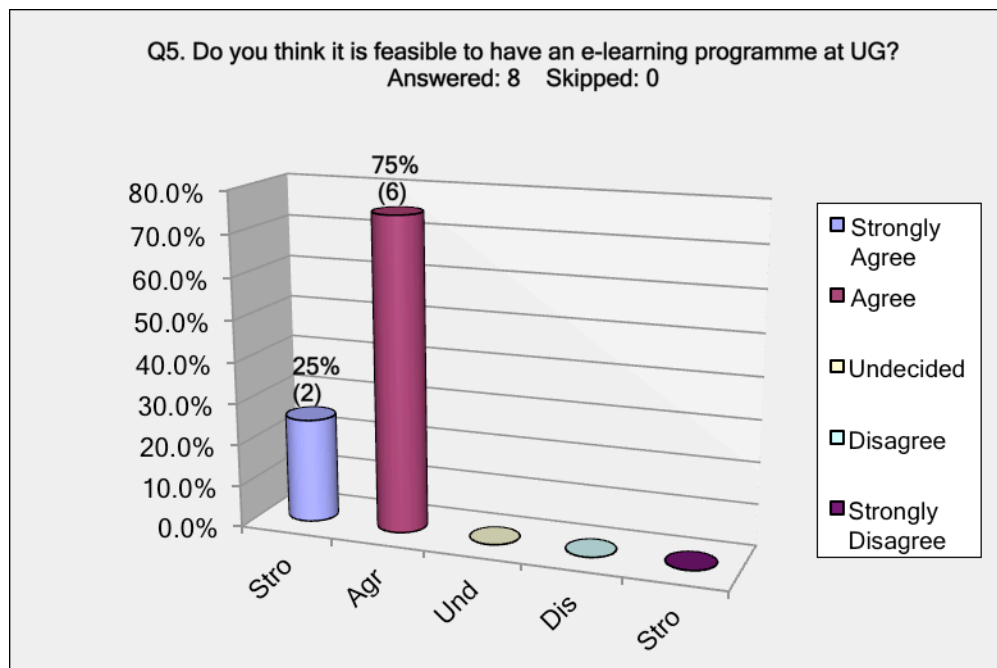
In terms of flexibility, education must not only be accessible, but it should also be flexible. In other words, it should be able to accommodate the schedules and different learning styles and learner needs. All learners do not learn in the same way. Traditional learning-teaching methods, while they may engage students, are teacher-directed and teacher-controlled. They do not lend themselves to learning-teaching diversity. Added to this, many students at the UG are from the

working class. The Faculty of Social Sciences usually has the largest number of students enrolled (about 600) per academic year. Most of the programmes are offered in the evening because the majority of those students have day jobs. Considering that all students from the UG do not inhabit the same space, adopting an elearning initiative at the institution will help to ease students' frustrations, with respect to their running to campus for classes, only to find out the class has been cancelled, without prior notice. Such a situation can be avoided with the use of technologies in education delivery, to the extent that students would be able to work from whatever their location, at their own pace, and at a time best convenient to them. Students' educational needs should be met, regardless of their geographical boundaries and learning styles (Goold, Craig & Coldwell 2007).

Sharma (2008) 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 UG's administration, who are responsible for the growth and development of the UG, have all tendered the affirmation that an elearning programme is vital for the UG's future.

### Question 5

The crucial point of Question 5 was the feasibility of an elearning initiative for UG. This question, without a doubt, was a critical one for the UG's administration, owing to the fact that it is the second research question of this study. Taking into consideration that the primary aim of this research is to *examine the administration's perception about the feasibility of elearning practices at the UG*, it was necessary to elucidate whether or not such an endeavour was practicable. Figure 3 underscores the chosen answers.



**Figure 3:** Administrators' views on E-Learning feasibility

As is deposited in Figure 3, 100% of the respondents found that an elearning plan at the UG would be 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, validating that it is feasible for the UG to put an elearning proposal into operation to significantly improve the learning-teaching process. Such findings are of profound significance for this study, since it is the UG's administrative body who, to a great extent, has to take some of the most crucial decisions about pedagogy.

The second part of Question 5 required administrators to offer supplementary information to support their stated answer. 75% of the respondents gave details for their preference. The major issue considered in this section is their conviction about elearning feasibility. In relation to feasibility, 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 UG has its own CIT which manages its internet and intranet systems. Some respondents made mention of the fact that Guyana got its own fibre-optic cable, some years ago, and that plans are ongoing to improve its effectiveness throughout the country. Respondents believe that Internet Connectivity issues must be carefully addressed before the elearning initiative is adopted. They all allude to the fact that a disruption in Internet services would affect information transmission online, and could possibly frustrate student learning (Hogan & Kedrayate 2009), a situation which should be avoided. According to the Illinois Online Network (2010), since one of the key components in developing an elearning 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.

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. Respondents have all signalled that infrastructural issues must also be addressed in order to ensure a smooth functioning of technology. Sharma (2008) 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), 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 be resolved before an elearning initiative is undertaken, or its durability could be seriously threatened.

The issue of 'support' was also mentioned by respondents. They felt that there should be a technical team commissioned, or a Learning Support Department set up, to oversee issues regarding support, since it has a direct bearing on the longevity of the educational venture. For the sustainability of any project, 'support' must be continual (Northouse 2007; Livingstone 2013a). It is one of the most fundamental issues in elearning implementation. 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, towards ensuring its prolonged existence. This is one of the principal prerequisites. These are some of the issues highlighted by the UG's administration that will naturally have to be addressed before the elearning initiative is fully adopted and implemented.

A summary of the results obtained in this study is as follows:

#### **UG Administration's Survey**

1. 100% perceive the current pedagogical context as out-dated.
2. 75.0% concur that the learning-teaching situation is not at its best.
3. 100% coincide that there is room for improvement.
4. 100% are enthusiastic about E-Learning incorporation into the UG.
5. 100% substantiate that elearning at the UG is feasible.

#### **CONCLUDING REMARKS**

This study has centred its attention on the UG administration's perception about the feasibility of elearning practices at the institution. In accordance with the research aim, questions and objectives, the results highlight that, while a number of issues need to be addressed before the implementation of this new educational initiative, the UG's administrative body is generally ready for elearning practices to be integrated into the pedagogical practices of its teaching faculty. The administrators concur that such a venture is feasible.

Since the establishment of the UG in 1963, the educational landscape has not really undergone significant changes, in terms of pedagogical practices. During its early years, the UG had the distinction of being the leading HE institution in the Caribbean Region. The institution fell from its pedestal, due to the fact that outdated instructional practices were still in vogue, even though all sorts of changes were taking place in educational institutions in both developed and developing countries. With the passage of time, the situation at the institution deteriorated. In these modern times, even though there have been rapid transformations in HE institutions around the world, to embrace student learning diversity, the UG has still not really joined the bandwagon of change. Generally, the traditional learning-teaching approach is still in vogue, with snippets of the use of some form of technology. Even though the UG is expected to offer four online degrees, it still has not adopted a university-wide elearning initiative. This is the issue that needs to be addressed, as the UG administration can no longer be oblivious to the cries of the student population for high-quality learning and teaching (Livingstone, 2013a).

The UG's administrative body has not been doing enough to revolutionise learning and teaching. In other words, the UG's aim, vision, and mission are not being fulfilled. The blame needs to be laid at the feet of the administration, since it is they who have the power and the responsibility to ensure that the UG employs cutting edge pedagogy that would once again raise the standard of the institution, making it marketable, competitive, and comparable to other universities in the Caribbean Region and beyond. The leadership of any organisation is critical to its success or failure. The UG has been failing its students, since it has not been, and still is not, offering high quality education. For students to be offered a quality education, the UG's educational leaders need to mobilise the teaching faculty, and create the necessary pedagogical reformation, so that teaching faculty can restructure their pedagogical practices. Once teaching faculty undergoes transformative reflection, through reflective practice, their instructional practices will improve, consequently improving student learning. Improving pedagogical practices throughout the university will ensure its relevance and, ultimately, its sustainability. This is the direction in which the University needs to move, and it is the leaders who need to initiate this shift.

The UG's administration is very much aware of the influence of elearning 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 University of the West Indies (UWI), CARICOM's only regional university, has three regional campuses and an Open Campus. The

Open Campus, offering online and distance learning (ODL) programmes through its 50 site locations, serves 17 countries in the English-speaking Caribbean (UWI Website 2014; UWI Open Campus 2004-2014). The UG's administration is aware of ICT integration into the learning-teaching context. Change must take place, and it must begin from the top.

### Limitations

The first significant limitation was that only two thirds of the administrators completed the online survey, despite continued pleas, throughout the survey period, for them to do so. The second major limitation was that most of those who did complete the survey did not give the expected and desired detailed responses. Since these individuals comprised the UG's governing body, the researcher was expecting in-depth responses from them, regarding the institution's role in tertiary learning and teaching. Had they all responded, and in detail, the study would have shed more light on the way forward. Perhaps the lack of participation from all the administrators could have been due to the final exam period that was underway, when this survey was launched (May 14 - June 7 2014).

### Recommendations

Given that the UG's leaders are aware of the rapid changes taking place in the HE landscape, the major recommendation would be for them to quickly undergo a paradigm shift and begin to embrace *effective leadership practices*. Effective leadership will promote *effective pedagogic leadership*, which has the overarching objective of revolutionising pedagogy and sustaining cutting edge educational practices. Since the UG's administrators are at the helm of the institution, their role in the adoption, implementation, institutionalisation and sustainability of the elearning initiative is mandatory.

### Further Research

Some areas for further research could include the following: (1) Since some of the teaching faculty are using *Moodle*, to upload course notes and the like, it would be good for the UG's administration to liaise with the UG's Centre for Information Technology (CIT) to conduct a pilot study, perhaps over a period of one semester, to assess its effectiveness for elearning. This pilot study can also act as a means of *on-going training* for both teaching faculty and students. Valuable light can be shed on the degree of achievement of learning outcomes, student satisfaction, retention and success, and programme satisfaction, among others. (2) Regarding the use of *Moodle*, another online survey could be directed towards the administrators to find out their preferred instructional delivery mode for students and teaching (web-enhanced/blended/fully online). It would be interesting to see what these results reveal. (3). F2F interviews could be done with all the UG's administrators as a means of gaining richer, deeper and detailed insights, not previously given. This would augment the richness of the study.

A successful introduction and implementation of elearning at the UG, through effective educational leadership, as signalled by Livingstone (2013a, 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”.

This study can form part of the existing empirical evidence that establishing elearning practices can alleviate some of the challenges facing universities in developing countries. For elearning to be adopted, implemented, institutionalised and sustained, all concerned parties/stakeholders need to work collaboratively and participate actively in all decisions relating to pedagogy. This is the only way for true educational and pedagogical transformation to take place.

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### REFERENCES

- Ally, M 2004, “Foundations of Educational Theory for Online Learning”, in *Theory and Practice of Online Learning*, eds T. Anderson & F. Elloumi, Athabasca University Press, Athabasca, pp. 3-31.
- Biggs, J & Tang, C (eds) 2011, *Teaching for Quality Learning at University*, 4<sup>th</sup> edn, McGraw – Hill/Open University Press/Society for Research into Higher Education, Maidenhead.
- Brown, M 2005, “Learning Spaces Design”, in *Educating the Net Generation*, eds J. Oblinger & D. Oblinger, EDUCAUSE, Boulder, CO., pp. 12.1 – 12.22.
- COL 2010, *eLearning Workshop at University of Guyana*. Available from <<http://oldwebsite.col.org/news/Connections/2010jun/Pages/Events.aspx>> [July 7, 2015].
- Creswell, JW 2009, *Research Design: Qualitative, Quantitative and Mixed Method Approaches*, 3<sup>rd</sup> edn, SAGE Publications, California.
- CUPIDE 2006, *CUPIDE Project Description*. Available from <<http://www.cupide.org/index.html>> [July 7, 2015].
- Dearing, R 1997, *The Dearing Report*. Available from <<http://www.educationengland.org.uk/documents/dearing1997/dearing1997.html>> [April 25 2014].
- Duignan, P & Cannon, H 2011, *The power of many: Building sustainable collective leadership in schools*, ACER Press, Melbourne.



- Faculty of Education and Humanities 2014, *Using Moodle in the Faculty of Education and Humanities*, University of Guyana Press, Georgetown.
- Gaffar, K, Singh, L & Thomas, T 2011, "Are We Ready for Web 2.0? Evidence from a Caribbean University", *Caribbean Teaching Scholar*, vol. 1, no. 2, pp.129-146.
- Goold, A, Craig, A & Coldwell, J 2007, "Accommodating culture and cultural diversity in online teaching", *Australasian Journal of Educational Technology*, vol. 23, no. 4, pp. 490-507.
- Gyamfi, SA & Gyaase, PO 2015, "Students' perception of blended learning environment: A case study of the University of Education, Winneba, Kumasi-Campus, Ghana", *International Journal of Education and Development using Information and Communication Technology (IJEDICT)*, vol. 11, no. 1, pp. 80-100.
- Hargreaves, A & Fink, D 2004, "The seven principles of sustainable leadership", *Educational Leadership*, vol. 61, no. 7, pp. 8-13.
- Hogan, R & Kedrayate, A 2009, *E-Learning: A Survival Strategy for Developing Countries*. Available from <<http://sta.uwi.edu/conferences/09/salises/documents/R%20Hogan.pdf>> [June 15 2014].
- ICDE 2010, News from the University of Guyana. Available from <[http://www.icde.org/News+from+the+University+of+Guyana.b7C\\_wljQXR.ips](http://www.icde.org/News+from+the+University+of+Guyana.b7C_wljQXR.ips)> [July 7, 2015].
- IDCE 2014b, *Report on Distance Education at the University of Guyana*, University of Guyana Press, Georgetown.
- IDCE 2014a, *Distance Education at the University of Guyana*. Available from <<http://www.idceug.com/>> [March 16 2014]
- Illinois Online Network 2010, *Key Elements of an Online Programme*. Available from <<http://www.ion.uillinois.edu/resources/tutorials/overview/elements.asp>> [June 10 2014].
- Instituto Cervantes 2003-2006, *Diccionario de términos claves de E/LE*. Available from <[http://cvc.cervantes.es/obrel/deccio\\_ele/diccionario/default.htm](http://cvc.cervantes.es/obrel/deccio_ele/diccionario/default.htm)> [June 12 2014].
- Jamlan, M 2004, "Faculty opinion toward introducing e-learning at the University of Bahrain", *International Review of Research in Open and Distance Learning*, vol 5, no. 2, pp. 1-14.
- Johansson-Fua, S 2005, *ICT in secondary education in the Pacific: Status, trends and prospects*. Available from: <[http://www.usp.ac.fj/jica/ict\\_research/documents/pdf\\_files/ICT%20in%20Secondary%20Education%20in%20the%20Pacific%20Region.pdf](http://www.usp.ac.fj/jica/ict_research/documents/pdf_files/ICT%20in%20Secondary%20Education%20in%20the%20Pacific%20Region.pdf)> [June 13 2014].
- Lai, KW 2011, "Digital technology and the culture of teaching and learning in higher education", *Australasian Journal of Educational Technology* vol. 27, no. 8, pp. 1263-1275.
- Lam, P & Bordia, S 2008, "Factors affecting student choice of eLearning over traditional learning: Student and teacher perspectives", *International Journal of Learning* vol.14, no. 12, pp. 131-39.

- Laurillard, D 2012, *Teaching as a Design Science: Building Pedagogical Patterns for Learning and Technology*, Routledge, New York.
- Laurillard, D 2008, *Digital technologies and their role in achieving our ambitions for education*, Institute of Education, University of London, London.
- Leedy, P & Ormrod, J 2013, *Practical Research: Planning and Design*, 10<sup>th</sup> edn, Pearson Education Inc, Upper Saddle River, New Jersey.
- Lingam, G (ed) 2012, *Educational Leadership: Emerging Issues and Successful Practices*, University of the South Pacific Press, Suva.
- Livingstone, K 2014, "Improving Curriculum Design and Development: A Case Study from the University of Guyana", *Blue Ocean Research Journals – Journal of Business Management and Social Sciences Research (JBM&SSR)* vol. 3, no. 5, pp. 1-17.
- Livingstone, K 2013b, *Reflective Essay on Educational Leadership*. Available from from <[https://www.academia.edu/6503004/Reflective\\_Essay\\_on\\_EDUCATIONAL\\_LEADERSHIP](https://www.academia.edu/6503004/Reflective_Essay_on_EDUCATIONAL_LEADERSHIP)> [April 24 2014].
- Livingstone, K 2013a, "Implications of introducing a hybrid learning approach at the University of Guyana", *Baraton Interdisciplinary Research Journal* vol. 3, no. 2, pp. 53-62.
- Lorenzo, S 2004, "La motivación y el aprendizaje de una L2/LE", in *Vademécum para la formación de profesores. Enseñar español como segunda lengua (L2)/lengua extranjera (LE)*, eds J. Sánchez Lobato & I. Santos Gargallo, SGEL, Madrid, pp. 305-328.
- Lunenburg, FC & Ornstein, AO 2012, *Educational administration: Concepts and practices*, Wadsworth, Belmont, CA.
- Moore, M 1997, "Theory of transactional distance", in *Theoretical Principles of Distance Education*, ed D. Keegan, Routledge, New York, pp. 22-38.
- Moore, M 1991, "Distance Education Theory". *The American Journal of Distance Education*, 5(3). Available from <<http://www.tandfonline.com/doi/abs/10.1080/08923649109526758#.VU0mOJMwDQ0>> [March 14 2014].
- National ICT Development Strategy 2006, *ICT Development in Guyana*, Sustainable Development Networking Programme, Georgetown.
- Northouse, PG 2007, *Leadership: Theory and Practice*, 4<sup>th</sup> edn, SAGE Publications Inc, Thousand Oaks, CA.
- Palys, T 2008, "Purposive Sampling", in *The SAGE Encyclopedia of Qualitative Research Methods*, vol 2, ed L. M. Given, SAGE Publications Inc, Thousand Oaks, CA, pp. 697-698.
- Radhakrishna, RB 2007, "Tips for Developing and Testing Questionnaires/Instruments", *Journal of Extension* vol. 45, no. 1. Available from <<http://www.joe.org/joe/2007february/tt2.php>> [July 1 2014].

- Raturi, S, Hogan, R & Thaman, KH 2011b, "Learners' Preference for Instructional Delivery Mode: A Case Study from the University of South Pacific", *International Journal of Instructional Technology and Distance Learning (IJITDL)*, vol. 8, no. 6, pp. 17-30.
- Raturi, S, Hogan, R & Thaman, KH 2011a, "Learners' access to tools and experience with technology at the University of the South Pacific: Readiness for elearning", *Australasian Journal of Educational Technology (AJET)*, vol. 27, no. 3, pp. 411-427.
- Rutter, L & Williams, S 2007, *Enabling and assessing work-based learning for social work: supporting the development of professional practice*, Learn to Care Publishers, Birmingham.
- Sharma, AN 2008, "ICT in Teacher Education: The USP Experience", in *Pacific Education: Issues and Perspectives*, eds J. Dorovolomo, C.F. Koya, H.P. Phan, U. Nabobo-Baba & J. Veramu, University of the South Pacific, Suva, pp. 165-179.
- Singh, L 2014, "Technology enhanced peer learning with PeerWise: Experiences and perceptions from a developing country", *Caribbean Teaching Scholar* vol. 4, no. 1, pp. 5-22.
- Smith, MK 2000, "Curriculum Theory and Practice", *The Encyclopedia of Informal Education*. Available from <[www.infed/biblio/b-curric.htm](http://www.infed/biblio/b-curric.htm)> [March 16 2014].
- Spillane, JP 2005, "Distributed Leadership", *Educational Forum* vol. 69, no. 2, pp. 143-150. The United Nations 2014, *Education For All: Overview*. Available from <<http://www.un.org/en/globalissues/briefingpapers/efa/>> [April 25 2014].
- The World Bank 2013, *Education for All (EFA)*. Available from <<http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTEDUCATION/0,,contentMDK:20374062~menuPK:540090~pagePK:148956~piPK:216618~theSitePK:282386,00.htm>> [April 25 2014].
- Thomas, G 2011, *How to do your Case Study: A Guide for Students and Researchers*, SAGE Publications Inc, Thousand Oaks, CA.
- University of Guyana 2014, *About the University*. Available from <<http://www.uog.edu.gy/?q=about>> [March 25 2014].
- University of Guyana 2009, *University of Guyana Strategic Plan 2009-2012*, University of Guyana Press, Georgetown.
- UG/OU Report 2013, *The Open Education Programme (OEP) at the University of Guyana*, University of Guyana Press, Georgetown.
- UNICEF 2012, *Education For All*. Available from <[http://www.unicef.org/education/index\\_44870.html](http://www.unicef.org/education/index_44870.html)> [April 25 2014].
- UNICEF. (2011). *Equal Access to Education*. Available from <[http://www.unicef.org/education/index\\_access.html](http://www.unicef.org/education/index_access.html)> [April 25 2014].
- UWI Open Campus 2004-2014, *About the UWI Open Campus*. Available from <<http://www.open.uwi.edu/about/welcome-uwi-open-campus>> [May 14 2014].

University of the West Indies 2014, *About the University*. Available from <<http://www.uwi.edu/about.asp>> [May 14 2014].

Waldron, L 2009, "Technology-oriented or learning-driven?", *International Journal of Education and Development using Information and Communication Technology (IJEDICT)* vol. 5, no. 4, pp. 67-72.

Williams, M & Williams, J 2010, "Evaluating a model of business school students' acceptance of web-based course management systems", *International Journal of Management Education* vol. 8, no.3, pp. 59-70.

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