Online Learning in Higher Education in Sub-Saharan Africa: Ghanaian University students' experiences and perceptions

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Abstract

This study adopted a qualitative case-study approach to examine the attitudes, experiences, and perceptions of undergraduate students who were enrolled in an online, collaborative learning course at a Ghanaian private university. Data sources included surveys, student and instructor journal entries, email records, individual interviews, and Web-server logs. The study found that the students did not respond favorably to online constructivist teaching approaches such as asynchronous discussions and ill-structured project-based learning activities, and perceived collaborative online learning within their context as a complex, more demanding and time-consuming experience.

Keywords: Higher Education; collaborative online learning; Sub-Saharan Africa; Ghana; students' perceptions; constructivist pedagogy

Introduction

With the current advances in Information and Communication Technologies (ICTs) by way of improved computer power, faster data transfer rates, and attendant lowering of costs, coupled with the fact that the effective integration of these technologies into educational curricula has been demonstrated to have positive effects on student learning (Harvey, 2003; Kiluk, 1994; Salpeter, 1998), technology-enabled instruction, especially online learning, has emerged as the most feasible and economically sound means of expanding access to quality higher education. Online learning is thus being rapidly adopted by educational institutions worldwide as an alternate or complementary mode of education delivery, and indeed has been heralded as the next democratizing force in education, particularly in higher education (Jones, 1997). Thus, in the United States, for example, over 3.5 million college students took at least one online course in the fall term of 2006 (Allen & Seaman, 2007).

In Sub-Saharan Africa, however, where it is estimated that only 1 in 250 people have access to the Internet as against the global average of 1 in 15 (UNESCO Institute for Statistics, 2007) online learning in higher education poses a great challenge as this mode of instruction delivery relies solely on the available information and communication technology infrastructure. In addition, most institutions within the sub-region are currently in a state of crises – having to cope

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with collapsing infrastructure, brain drain, and dwindling financial resources, whilst under increasing pressure to cater for larger student populations (Saint, 1999).

Despite these constraints, online learning is still being touted as the only and best possible solution to the problem of access to quality higher education in Sub-Saharan Africa, especially as it has been demonstrated within other settings (notably the developed world) that learners who have participated in online learning, mostly report that they perceive this mode of learning as being convenient and flexible (Leasure, Davis & Thievon, 2000), offering a greater access to learning resources (Sener & Stover, 2000), increasing student motivation and self-esteem (Kearsley, 1996), enhancing learner participation and interactivity (Fredericksen, Pickett, Shea, Pelz, & Swan, 2000; Maeroff, 2004), and more significantly, improving the quality of learning (Fjermestad, Hiltz, & Zhang, 2005).

Thus most institutions within Sub-Saharan Africa are beginning to explore the possibility of adopting this mode of learning to help address the ever-growing demand for tertiary education within the sub region (UNESCO, 2007). Unfortunately, this is mostly being done with little recourse to trying to understand the students' characteristics and their perceptions about the helpfulness, accessibility, and usability of these technologies within their context.

Indeed, studies have documented students' reported distress with online learning, attributable mostly to inappropriate implementation practices that led to such unpleasant experiences as communication breakdowns and technical difficulties (Hara & Kling, 2003), ambiguous instructions (Merisotis & Olsen, 2000), unwillingness of other learners to participate in group assignments (Dirkx & Smith, 2004; Maeroff, 2004), and the general feeling of 'disconnect' due to the lack of face-to-face interactions (Stodel, Thompson & MacDonald, 2006). These experiences are said to be major contributory factors to the high dropout rates in most online courses (Carr, 2000), low motivation of some students to learn (Maltby & Whittle, 2000), and low student satisfaction with their learning experiences (Kenny, 2003; Muilenburg & Berge, 2005).

The question then arises as to how higher education students who have limited access to technological resources, as pertains in Sub-Saharan Africa, perceive this mode of learning, particularly as they are more accustomed to the traditional lecture mode of instruction delivery, whilst the presence digital content that is aligned with curriculum frameworks is known to be limited in Africa (Farrell, Isaacs & Trucano, 2007).

Ghana is a country located in Sub-Saharan Africa, and so all the aforementioned issues of inadequate resources and institutional difficulties, are more applicable in Ghanaian higher education. As it is known that the total commitment and participation of learners is crucial for successful learning outcomes of collaborative online learning courses (Hiltz & Shea, 2005; Petrova & Sinclair, 2005), if Ghanaian educators hope to successfully implement collaborative online learning within higher education institutions, they must, in addition to considering the broader contextual and environmental factors that influence this mode of learning, make special efforts to get the support and acceptance from the students (Arbaugh & Benbunan-Fich, 2005; Khan, 2005). This starts with empirical studies aimed at understanding the perceptions such students hold about online learning environments within their context (Hara & Kling, 2003; Petrova & Sinclair, 2005; Shneiderman, 1992), and the various contextual factors that influence those perceptions.

It is in line with this argument that this study investigated Ghanaian university students' perceptions of collaborative online learning by eliciting their opinions, and also studying their

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attitudes and experiences as they engage in collaborative online learning activities within the African context.

Research Questions

Considering the fact that Internet usage in Ghana involves only 1.8 percent of the total population (Internet World Stats, 2007), whilst current university students are more accustomed to courses that are delivered as linear lectures and presentations, this study sought to examine the following broad questions:

> 1. What are Ghanaian university students' general expectations and perceptions of collaborative online learning environments?
>
> 2. How will "traditional" Ghanaian university students engage in a collaborative online learning course, and what are the major factors that will influence their performance in the course?

Theoretical Perspective and Research Model

Collaborative learning, an implementation of social constructivist pedagogy, is a learner-centered instructional strategy that involves social processes by which groups of students work together as teams to complete academic problem-solving tasks designed to promote learning (Alavi, 1994; Benbunan-Fich, Hiltz & Harasim, 2005; Dennen, 2000). With institutions now integrating various computer and Internet technologies into instruction delivery, and the subsequent realization that the online environment can effectively support the social aspect of learning emphasized by collaborative learning, most collaborative learning initiatives, such as case-, project- or problem-based learning, are being implemented online. Relan and Gillani (1997) therefore define collaborative online learning as "the application of a repertoire of cognitively oriented instructional strategies, implemented within a constructivist and collaborative learning environment utilizing the attributes and resources of the World Wide Web" (p. 43).

For effective use of the Web as a learning platform, computer software known as Learning or Course Management Systems have been developed to provide a single platform for the integration of components and features for content delivery, communication, and evaluation. Several of these applications have been widely adopted by several higher education institutions as the main platform for collaborative online learning, with notable examples being *Blackboard*, *ClassWeb* and *Moodle* (Bennett, 2003; Dutton, Cheong, & Park, 2004a; Olsen, 2001). Collaborative online learning, therefore, involves harnessing the affordances of media and communication technologies to implement constructivist learning strategies in ways that will encourage students with diverse attributes and in different locations to work together and productively on academic tasks. In addition to constructivism therefore, media effects theories, such as social presence (Short, Williams & Christie, 1976) and media richness (Daft & Lengel, 1986) theories, together with group interaction/ social influence (Benbunan-Fich et al., 2005) theories, all contribute in explaining what happens and why in collaborative online learning environments (Hiltz, Coppola, Rotter, Turoff & Benbunab-Fich, 2000).

Social presence represents the degree to which a medium is perceived as conveying the actual physical presence of the communicating participants, whilst media richness refers to the extent to which a medium can support language variety, feedback, nonverbal cues, and learning. Social

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presence theory argues that different media foster different levels of perceived intimacy and immediacy, with a greater perceived social presence having an intensifying effect on media users, increasing involvement, task performance, persuasion, social interaction (Lombard, Ditton & Reich, 1997). Surveys and experimental studies have, indeed, suggested that greater perceived social presence, as afforded by a particular medium – e.g. television or audio and video conferencing systems – results in greater student satisfaction with socio-emotional tasks, such as persuasion, resolving conflicts, maintaining friendly relations, etc. (Hackman & Walker, 1990).

Media richness theory, for its part, establishes that characteristics of media vary in terms of their ability to support task uncertainty and equivocality, and further portrays the fact that when the information processing capabilities of a medium match information processing demands, task performance will improve (Daft & Lengel, 1986; Rice, 1992). In other words, as Rice (1992) explains, "performance is not assured by any particular organizational design, but is contingent on an appropriate match between contextual variables (such as task demands) and organizational arrangements (such as communication structures and media)" (p. 476).

Group interaction and socio-cultural influence theories dwell on the socio-emotional and cognitive benefits of working in groups by explaining that, through group activities, learners build self-esteem, learn to accommodate diverse opinions on issues, enhance their listening and communication skills, exhibit reduced anxiety towards collaborative activities, and generally develop skills needed in workforce and other out-of-school settings (Johnson, Johnson, Holubec & Roy, 1984; Taylor, 2004). Also, whilst group discussions are capable of providing cognitive scaffolding that is essential for higher order thinking, other spontaneous group activities, such as conversations, conflicts, or disagreements (and efforts being made to avoid or resolve them), multiple perspectives, self-explanations (together with explanations to others), and internalization of concepts conveyed from more knowledgeable peers, all contribute towards the group members' cognitive development (Benbunan-Fich et al., 2005; Roper, 2007; Stacey, 2005). The intensity and effectiveness of group processes, however, depend on some personal attributes of individual group members as well as socio-cultural factors prevailing within the learners' context, and in the case of online learning, the medium of communication and underlying technologies adopted.

As pedagogical, media effects and group interaction theories all contribute in serving as a theoretical basis for collaborative online learning, most research works on this mode of learning tend to organize research variables in terms of an input-process-output model (Benbunan-Fich et al., 2005). According to this model, the input factors, or moderator variables (i.e., the technology, course, instructor, and student characteristics) lead to the amount and type of communication and social learning processes that take place within the online environment as well as the perceptions of the environment by participants (mediator or intervening variables), and these, in turn, determine the outcomes of the learning processes in terms of access to all resources and services related the course, faculty and student satisfaction, student learning, and cost effectiveness (i.e., dependent variables).

This model has served as the main framework around which most empirical research studies involving collaborative online learning have been carried out, including studies that compared the traditional classroom learning with online learning. This is because the model lends itself to quantitative, qualitative, and even mixed modes of enquiry. Researchers who adopt the quantitative approach typically measure online learning effectiveness by using experimental or quasi-experimental research designs to test hypotheses and reach valid conclusions about cause and effect of any of the moderating or mediating variables on quantifiable learning outcomes, such as students' exam grades, projects or portfolios, levels of satisfaction and so forth.

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Qualitative researchers, on their part, mostly employ ethnographic or case-study methods such as surveys, interviews, protocol analysis, and direct observation to evaluate some or all aspects of particular online courses and then use some form of Grounded Theory (Glaser & Strauss, 1967), to build up conceptual structures and models (Arbaugh & Benbunan-Fich, 2005; Dziuban, Shea, & Arbaugh, 2005; Fjermestad et al., 2005; Hiltz & Shea, 2005).

Methods and Procedures

As this study sought to examine whatever preconceptions and expectations a particular group of Ghanaian university students bring to a collaborative online learning environment, their attitudes and experiences as they engage in an online course, and their overall perceptions of online learning based on their experience in the course, a qualitative case-study approach, guided by some aspects of the input-process-output model, was adopted.

Study Setting

The study involved a group of undergraduate students who were enrolled in an online course – *Pedagogical Aspects of ICT* – during the second semester of the 2006-2007 academic year at the Regent University College of Science and Technology in Ghana. *Pedagogical Aspects of ICT* is a three credit course designed to introduce students to the foundations of ICT use in education. Originally designed as a traditional lecture-based classroom course, the course was reconfigured as an online project-based collaborative learning course for the purpose of introducing students to online learning. Course activities were therefore designed to allow students to work with various technology initiatives, work collaboratively, and experience what learners in an online course typically experience.

Both constructivist and objectivist pedagogies framed the learning activities of the course. From the constructivist perspective, supports for the learning activities were developed using Jonassen's (1999) model for constructivist learning environments. This model suggests the provision of a range of resources, tools, and supports within the learning environment to assist learners engage in authentic activities such as projects, solving problems, resolving cases, etc. By engaging in such activities, learners will be able to analyze and explore the problem situation, articulate their solutions, and reflect on the outcomes and their experiences (Bennett, 2003). Thus, for the duration of the course, students were expected to work collaboratively in groups of two or three on specific projects that involved finding solutions to real-life education or training problems. Projects included researching and writing conceptual pieces on issues, such as the digital divide, distance learning and so forth, creating multimedia learning resources, creating instructional websites, etc. All relevant resources and supports were provided, and students self-selected their groups and project topics. Students were assessed on their respective levels of group collaborative activities (which were monitored online), as well as the quality of their final presentations. This aspect of the course carried a total of 40 percentage points.

Objectivist (traditional) design principles were included in the course because it was presumed that, as "traditional" students who were being introduced to collaborative online learning for the first time, a purely constructivist, ill-structured learning approach would have been drastically removing them from their "comfort zone" and might have contributed to a high attrition rate. Thus, the course was organized in modules of sequenced lessons that were focused on learning new concepts and principles. For each module, students were required to read some recommended texts, participate in online instructor-led discussions, take an online quiz, and in

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some cases, submit written responses to assignment questions, all of which were graded for a total of 60 percentage points. Six modules were completed over the 16 week period.

The platform for delivery of the course was *Claroline,* an open source Web-based Learning Management System that has been customized for use at Regent University under the name *eCampus* (see http://www.regentghana.net/ecampus/). Course document uploads and downloads, exercises, announcements, discussions, and chat sessions all took place within this platform, and every activity was recorded together with such details as identities of persons, time of day, length of activity, etc. Communication between instructor and students was mainly by email – also accessible through the *eCampus* platform.

Participants

Twenty six undergraduate students ($n = 22$ male; $n = 4$ female) of Regent University voluntarily registered to take the course. The instructor met the students face-to-face on two occasions, and gave them a brief introduction to the course, and discussed all issues associated with the online processes that they were due to go through for the rest of the course.

Data Collection and Analysis

Two sets of survey questionnaires (developed and pre-tested by the researcher) were administered online, using an online survey tool. The first questionnaire sought basic background information about the students as well as their general opinions, levels of preparedness, and expectations of the course they were about to engage in, and about online learning in general. The second questionnaire, administered at the end of the course, sought to obtain students' perceptions and levels of satisfaction with the course, and included such items as course content and activities, delivery platform, communication, learning outcome, instructor role, and institutional role. Notes were also collected through the instructor's observation of all students' online communication activities throughout the semester, whilst records of all student activities on the course platform, including individual one-to-one email correspondences with the instructor, were also accessed.

Quantitative data, made up of activity statistics logged by the server of the course website and some survey results, was tabulated and analyzed mainly by descriptive statistics with the aid of Microsoft Excel. Qualitative data, consisting of the instructor's journal entries and students' responses to open-ended questions in the questionnaires, was analyzed for emerging themes and consistency with quantitative data.

Results and Discussions

Learner Characteristics

Twenty-two students ($n = 18$ males; $n = 4$ females) completed the initial demographic and course expectation questionnaire. Over 70 percent of students were in the age range of 20 to 25 years, and most were in their first year at the University. The majority of students also reported that they were fairly proficient in the use of computers and the Internet, whilst only five students indicated that they had access to computer and Internet facilities outside the university campus, though they added that irregular power supply was likely to hinder their ability to fully use these resources. All students, however, indicated that they had never participated in an online learning activity prior to the present course. On their level of preparedness to take an online course, almost all

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students indicated that they were fully prepared and also expressed optimism that they will learn a lot and also do well, despite the fact that they were all full-time students and each was taking at least four other face-to-face courses.

Students' Expectations of the Online Learning Process

The first research question sought to understand the general expectations and concerns of Ghanaian "traditional" university students who were being asked to take a course where all teaching and learning activities will be carried out online. The initial questionnaire administered to the students thus contained a series of statements that addressed students' expected level of participation, the personal and environmental factors that were likely to influence participation, and the expected outcome of the learning experience. An open ended question asking students to write down their general opinions and concerns was also included.

Students' general outlook was that despite their restricted access to the Internet, they were capable of spending about 6 -10 hours a week on the course. Quite a significant number (> 60%), however, indicated that the lack of face-to-face learning activities, the lack of a final exam and their participation in other classroom-based courses, were likely factors that could negatively influence their ability to participate effectively in the course. Students said this was the case because they spend almost all their time attending classes (as absence will be noticed by the instructor) and studying for exams, and so an online class that has no such attendance requirements and exams was not motivating enough. They were pleased that they could take a course without having to attend classes at some scheduled times, however.

Analysis of the text of students' responses to the open-ended questions as, well as the instructors' notes yielded two main categories: (a) learning styles and expected benefits, (b) and drawbacks of the online learning activity. From their responses and actions, most students exhibited some amount of uneasiness as it dawned on them that they were being called upon to adopt quite a different learning style – self-directed learning. As this represented a radical departure from the teacher-led instruction that they have been used to over the years, two students expressed their concerns this way:

> Student 1:
>
> *Well I do not personally enjoy the style of the course. I believe I would have enjoyed it much if it was a class based course.*
>
> Student 2:
>
> *Because it turns out to be that we do not have a personal touch with the teacher and practical aspects of the course it makes it more ineffective for me.*

For the expected benefits and drawbacks category, students generally expressed mixed feelings. The more matured and more motivated students (these were a minority though) were hopeful that they will benefit from the course as evidenced by the following written statements from two students:

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Student 3:

This course has been exciting from its introduction stages and I perceive at the completion of the course my computer knowledge and the use of technological devices will increase tremendously.

Student 4:

I believe this will give me my first experience with online education, and I'm certain that I will learn as much as I would if this course were to be held in the classroom.

From the instructor's observation, it was apparent that such students were well aware of the challenges they were about to encounter but, probably due to their prior experiences, they were confident that they will complete the course successfully.

On the other hand, majority of the students were less hopeful of attaining any fruitful learning experience, and therefore appeared to a bit disinterested, with some laying blame on the University's inability to provide high-speed Internet access as major drawback. One student summed up as follows:

First of all, I don't think I have a proper understanding of the course (i.e. in terms of course description). As to what we're expected to learn and to know (or become) at the end of day I don't know. I'll be glad, if you are able to expand on these two areas for me.

This particular student's sentiments were shared by most others, as subsequent one-to-one inquiries by the instructor via email revealed that such students did not fully appreciate how online instruction could possibly replace classroom lectures. "But there is not class periods, no mid-terms, revision period and no exams, so when do we actually learn?" was a remark made by one student in an email response when asked why he appeared so ambivalent about the course. Such thinking is probably informed by the mindset, particularly within the African context, that online learning is second best (Saint, 1999) and, indeed, some African countries have adopted a policy of not recognizing foreign credentials obtained through online courses, citing problems of quality control and accreditation (UNESCO Institute for Information Technologies in Education, 2002).

On the whole, however, the students could be described as willing (albeit reluctantly on the part of some) to take an online course, the infrastructural constraints notwithstanding. As a crucial input factor, it was certain that these learner characteristics could directly influence the amount and level of learning processes that were due to take place. A few adjustments to the original design of the course – i.e., relaxing deadlines – were therefore made.

Students' Online Attitudes and Behaviors

All participating students were found to be capable of logging in and accessing the tools and resources of the course as they logged in about 55 times each on average over the course of the semester. This translated to an average of about three sessions a week per student over the 16 week duration of the course. Also, on average, each student spent close to one hour logged into

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the course, and also downloaded about 14 out of 32 documents that were provided by the instructor. Accessing the course platform was therefore not a problem for students, but they were less enthusiastic about participating in collaborative activities and also in the use of the discussion board.

Eighteen ($n = 18$) students were recorded as having ever logged into the discussion forum, but only 11 (44 percent of all students) contributed discussion posts throughout the duration of the course. All discussion threads were started by the instructor, and even though opportunity was given for students to start any discussion topic of their choice, none did. They all responded to the instructor's posts rather than commenting on, or expanding on each other's ideas. In total, five main topics were covered, each lasting for about three weeks. The posting of messages, however, dropped progressively from 14 in the first topic to one by the last topic, and no amount of intervention from the instructor could get the students to post any messages. Yet, all students who responded to the post-course survey questionnaire (N = 9) indicated that they found the discussion board useful, including two students who never even accessed the forum.

Limited student participation by way of written contributions in asynchronous online discussions appears to be a widespread phenomenon (Cheung & Hew, 2004; Hewitt, 2005), and this has been attributed to factors such as unfocused or off-track discussions, lack of encouragement on the part of the instructor, technical difficulties, inappropriate course design etc. (Dennen, 2005; Precce, Nonnecke & Andrews, 2004). In this study, however, none of these factors (aside probably the course content and discussion format), could be identified to be directly responsible for student inactivity. Access and ability to use the technology was not an issue as students could log into the course platform as and when they wished, and most were occasionally able to engage in hearty conversations with each other and with the instructor through the *eCampus* chat room. The instructor also constantly encouraged students by giving positive feedback on their posts and also made students aware that each will be awarded extra credit anytime they contributed meaningfully. Moreover, students who were noticed not to have logged into the discussion forum were sent personal email messages urging them to do so, yet only a few complied, and none came up with a reasonable explanation for their non-participation. One student, however, was frank enough to ask the instructor "Why don't you just come and lecture us and go?"

This situation could partly be attributed to lurking on the part of some of the students – i.e., observing, and possibly benefiting, from a setting without contributing in any noticeable way (Dennen, 2008; Precce et al., 2004). Thus each discussion topic was accessed (read) at a significantly higher number of times by the students as compared to the number of posts made. For instance the first topic recorded a total 122 hits by 18 students, yet only six students made a total of 14 posts (excluding the instructor's responses). This high incidence of online lurking was probably a carry-on from the traditional classroom practices, where most students tend to be comfortable sitting quietly and listening to whatever is taking place and making notes to themselves. However, as meaningful discourse is, discourse being one of the main goals of constructivist learning (Jonassen, Davidson, Collins, Campbell & Bannan-Haag 1995), lurking is clearly not applicable in constructivism. The question then arises as to whether the lurkers were actually learning in this context, but this is a subject for further investigation.

In terms of the group activities, there was little evidence of collaboration as students turned in their final projects individually, whilst group discussion forums that were set-up on the course platform were hardly accessed, despite emails (both broadcast and individual) being sent to them on an almost daily basis.

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Students' Perceptions of the Online Learning Environment

To understand students' perceptions of online learning based on their experiences, one output factor of the learning activity was measured, and that was student satisfaction with the learning processes. Only nine students, however, completed the post-course survey (despite repeated appeals from the instructor), and their general perceptions were obtained by calculating an average score for students' level of agreement with each of a set of statements. On the whole, majority of the respondents were of the view that communication with the instructor contributed in motivating them to pursue the course, and that the learning platform was fairly easy to use.

Forty-four percent of the respondents however strongly agreed that they did not find the style of learning very useful, with only 33 percent indicating that they had benefited from the course. Also, only 33 percent indicated that they were satisfied with the way the course was conducted, but a greater percentage (44%) had no opinion on this question. On the other hand, 66 percent indicated that they will take an online course again if given the opportunity.

In terms of their overall perceptions of collaborative online learning based on their experiences in the course, students were generally held the view that online learning offers no advantage over face-to-face. Figure 1 provides a summary of how the students perceive some factors about online learning.

Figure 1. Mean ratings of students' agreement with statements regarding Online Learning (OL) (N = 9) (1= Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree)
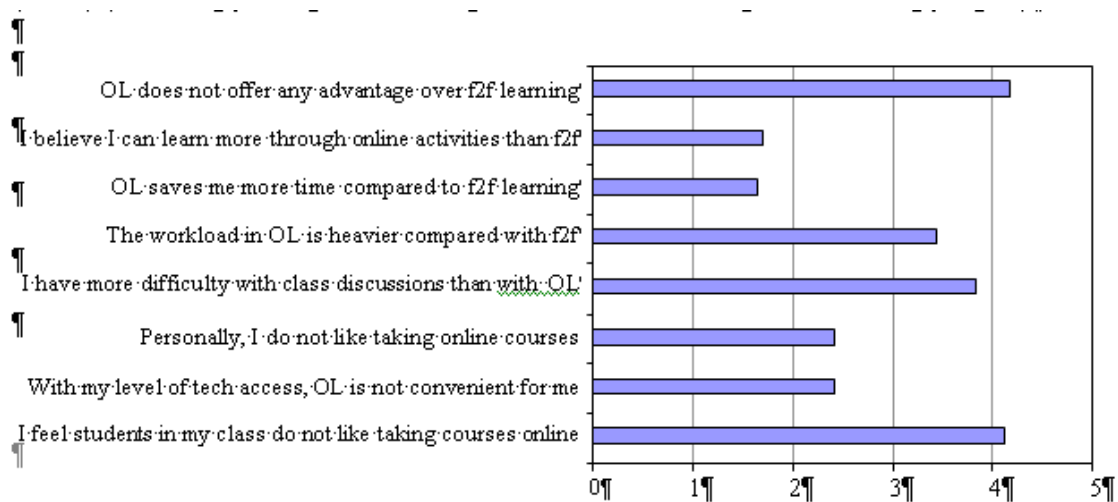
These mixed results were confirmed by content analysis of the text of students' responses to open-ended questions and email enquiries. Two categories were identified: (a) time; and (b) lack of motivation for independent learning.

It was clear that some students' perceptions of online learning being helpful or otherwise had more to do with their ability to fit the online study activities around other academic (mainly classroom based) responsibilities. Being involved in other courses that had daily or weekly face-to-face meetings, assignments to turn in, mid-term and final examinations, students treated the online course as a part-time issue that was only to be handled when they were less busy. The following comments by two of the students capture this issue:

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Student 1:

Most students did not give attention to activities in this course. I think this is because a great chunk of our courses are taught using classroom method so concentration was given there.

Student 2:

With a lot of pressure from classroom learning, students tended to postpone the online learning activities. I would have enjoyed the course better if all students were participating especially in discussions and forums just as you see in lecture halls.

Students' motivation for learning in general, and online learning in particular, was another identified category that influenced students' perceptions of online courses. The bulk of the students were not enthusiastic about learning independently, and this can be attributed to their being accustomed to the didactic teacher-led mode of instruction, having just come in from high school. Upon registering for a course, students expect to attend lectures, take notes, and at a later date, read these notes and write an exam. Collaborative online learning, however, represents a radical departure from these set of activities and students had great difficulty readjusting to the requirements of this new mode of learning. In most cases, it had to take repeated reminders and warnings from the instructor before some students would feel the need to log into the course site and engage in any learning activity. It was therefore not surprising that quite a significant number of those who responded to the post course survey indicated that they did not find the style of learning useful. Others also simply dropped the course without saying a word to the instructor, or first seeking help for whatever difficulties they were encountering. Indeed, only eight students satisfied all the requirements of the course.

Limitations of the Study

The limitations of this study are attributable to the following factors and assumptions:

1. Study participants were not randomly selected and therefore not representative of the entire student body.
2. The researcher was the instructor of the course and this might have influenced student responses to questionnaire.
3. The course was designed with the assumption that all students will engage in online discussions and group activities, whilst students' input was not sought prior to the design of course activities as constructivism demands. This might have alienated some students as they probably had concerns that were not addressed. Also, the reliance on text only as the main mode of delivery and interaction might not have been suitable for all learners, though this was a deliberate choice due to the anticipated bandwidth constraints.
4. Unlike typical online courses where most students are located in diverse geographical areas, the group of students involved in this study had personal physical contacts with each other as they were involved in other classroom based courses. Thus records of students' online collaborative activities probably did not represent all the interactivity that took place pertaining to the course.

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Conclusions and Recommendations

As the current state of Internet connectivity in higher education institutions in Africa has been described as "too little, too expensive and poorly managed" (Gakio, 2006, p. iii), it is not surprising that Internet use in education is still fairly limited in these institutions. In cases where the technology is adopted, it is either implemented as components (e.g., email) of the existing correspondence-type distance learning programs (Axmann, Fourie & Papo, 2002; Rumajogee, 2002), or as add-ons to class-based courses for the reproduction and distribution of course documents (Bongalos Bulaon, Celedonio, deGuzman & Ogarte, 2006; Dutton, Cheong & Park, 2004b). Most research work associated with online learning within the African context is thus conducted under the umbrella of open and distance learning, with most reporting on favorable learner perceptions of this mode of learning due to its openness and flexibility (e.g., Ambe-Uva, 2006; Howell, Harris, Wilkinson, Zuluaga & Voutier,2004; Ojo & Olakulehin, 2006).

These studies, however, mostly involve surveying and/ or interviewing random samples of students who have participated in technology-enabled distance learning programs, and reporting on these students' self-reported perceptions. Whilst this represents a more convenient and more generalizable approach to understanding students' perceptions, it is clear from the present study that students' self-reported perceptions sometimes do not reflect their unique experiences with the online learning environment. A case in point is some students reporting that they found the discussion forum useful, though the records indicated that they never logged onto the forum. The implementation of online learning initiatives within the African context should therefore not only be informed by students' self-reported perceptions, but by more in-depth empirical studies strategically designed to unravel all the contextual factors that influence the effectiveness of such learning initiatives.

This study, though limited in terms of participant response (and thus making firm and generalizable conclusions impossible), also reveals that learner motivation, possibly influenced by some environmental and socio-cultural factors (at least in the Ghanaian context) is a dominant input factor that determines the success or otherwise of an online course. Whilst it remains possible that the lack of adequate access to computer and Internet facilities could have contributed in making students less enthusiastic about the online activities, the design and style of delivery of the course could have also contributed to learner disengagement as pointed out previously. Possibly, if emphasis was placed less on online discussions and group activities, but more on other learning activities, such as individual responses to assignments and exercises, or the use of other outlets for students to express themselves, students might have responded more positively.

Subsequent studies of this nature should therefore not only seek learner input in the design of course activities, but should also involve the adoption of strategies that will stimulate student engagement, and give them more opportunities (e.g., blogs, wikis, etc.) to express themselves. For campus-based students, a hybrid or blended course (i.e., one that blends online and face-to-face delivery) might be the most appropriate, as the occasional in-class activities will help alleviate students' distress with the online interactions. The issue of online lurking can also be studied through such hybrid courses.

On the whole, it is understandable that many people, especially in the developing world, perceive online learning as inferior to class-based learning, but when students fail to participate effectively when offered an opportunity to take one "easy" online course in addition to their normal classes, one is inclined to agree with Castro's (2000) assertion that ". . . introducing technology into

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educational institutions is not a technical issue but a sociological experiment. The hurdles are not technical but have to do with the internal logic of the institution, with built-in incentive systems, with values, with expectations, and with prejudices. It is not a chapter in the science of technology but in the art of institutional change" (p. 15).

Integrating technology effectively into mainstream teaching and learning within higher education institutions in Sub-Saharan Africa, therefore, requires more empirical studies, similar to the current study reported here, that have the potential of leading to a fuller understanding of all the "sociological" issues that are probably unique to particular institutions or countries.

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Appendix

Pedagogical Aspects of ICT

Student Preparedness and Expectations Questionnaire

Please respond to all the questions listed below as accurately as you can.

1. Age
O 19 or less O 20 - 25 O 25- 30 O 31 and above

2. Gender
O Female O Male

3. Year of Study
O First O Second O Third O Fourth

4. What is your enrolment status at Regent University?
O Full Time O Part Time

5. How many courses (including this one) are you taking this semester?
O Only this one O 2 O 3 O 4 O 5 or more

6. About how many hours a week do you think you can spend on this course?
O 5 or less O 6 - 10 O 11 - 15 O 16 or more

7. What do you consider to be the level of your computer/technology skills?
O Beginner O Competent O Proficient O Expert

8. What type of technology access do you have outside the University campus?
O I have a personal computer but no internet connectivity
O I have access to a computer only part of the time
O I have a personal computer with internet connectivity
O I only have access to a computer with internet part of the time
O I have no access to a computer

9. What is your experience with online learning?
O I have taken a fully online course before
O I have never taken an online course before
O I have taken a part online (hybrid) course before

12. Have you ever taken a course that used the Regent University *eCampus* Learning Management System for instruction delivery?
O No O Yes

13. In your opinion, when comparing an online course with a normal classroom course,
O students taking an online course learn equally as those who attend face-to-face classes
O students taking a face-to-face course learn better than those who take an online course

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O students taking an online course learn better than those who take a face-to-face course
O I cannot tell which method of learning is better

14. How do you think each of the following factors is likely to impact negatively on your ability to participate fully in this online course? Please indicate your answer by choosing the appropriate code

(**1**) Highly Unlikely (**2**) Unlikely (**3**) Neutral (**4**) Likely (**5**) Very Likely	Answer Code				
	1	**2**	**3**	**4**	**5**
1 - My participation in other courses	O	O	O	O	O
2 - My inability to see and talk to the instructor of this course	O	O	O	O	O
3 - The absence of lectures and other classroom activities	O	O	O	O	O
4 - The absence of a final written examination	O	O	O	O	O
5 - My ability to participate in group work	O	O	O	O	O
6 - Lack of regular electric power supply on campus	O	O	O	O	O
7 - My level of access to computer and internet connectivity	O	O	O	O	O
8 - My level of access to library books and other resources	O	O	O	O	O
9 - The University campus environment	O	O	O	O	O
10- My level of computer and internet skills	O	O	O	O	O
11- My other personal obligations	O	O	O	O	O

15. Write down any other general opinions or expectations you have about this online course you are about to take

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Student Experiences Questionnaire

Please respond to all the questions listed below as accurately as you can.

1. How did you gain access to a computer and the internet to partake in this course? (Select all that apply)

O Through my personal computer
O Through the Regent University computer resources
O Through a third party i.e. a friend, internet café, work place etc.

2. On average, how frequently were you able to access the course on *eCampus* during the semester

O Daily
O 3 to 4 times a week
O 1 to 2 times a week
O Once a while

4. On average, how many hours a week did you spend logged into the course during the semester?

O Less than 4 hours O 4 - 6 hours O 8 - 10 hours O 11 hours or more

5. I spent ------ time on this course as compared to each of the classroom-based courses that I have participated in at Regent University.

O less O the same O more

6. Did you incur any extra cost by virtue of your participation in this course?

O No O Yes

7. What is your opinion about the class size (number of students)?

O too small O just right O too big O no opinion

8. Would you recommend this course to other students?

O No O Yes

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9. Please indicate your opinion with regard to each of the following statements about the course by selecting the appropriate answer code (i.e., 1 = Very Useful ---. 5 = Not Very Useful)

(**1**) Very Useful (**2**) Useful (**3**) Neutral (**4**) Not Useful (**5**) Not Very Useful	Answer Code				
	1	**2**	**3**	**4**	**5**
1 - The subject area covered by the course	O	O	O	O	O
2 - The role played by the instructor of the course	O	O	O	O	O
3 - Working in groups	O	O	O	O	O
4 - The discussion forum on *eCampus*	O	O	O	O	O
5 - The links to other external web resources	O	O	O	O	O

10. Please indicate your opinion with regard to each of the following statements about the course by selecting the appropriate answer code (i.e. 1 = Very Easy ..... 5 = Very difficult)

(**1**) Very Easy (**2**) Easy (**3**) Neutral (**4**) Difficult (**5**) Very Difficult	Answer Code				
	1	**2**	**3**	**4**	**5**
1 - Connecting and logging into *eCampus* anytime	O	O	O	O	O
2 - Connecting and logging into *eCampus* from anywhere	O	O	O	O	O
3 - Use of the *eCampus* interface	O	O	O	O	O
4 - Getting technical support when having difficulties with *eCampus* or other computer problems	O	O	O	O	O
5 - The reading material for the course	O	O	O	O	O
6 - The exercises and other assignments	O	O	O	O	O
7 - Communication with the instructor through *eCampus*	O	O	O	O	O
8 - Communication with other students through *eCampus*	O	O	O	O	O
9 - Uploading and Downloading content through *eCampus*	O	O	O	O	O
10- Contributing to class discussions through the discussion forum of *eCampus*	O	O	O	O	O
11- Working in groups through the *eCampus* platform	O	O	O	O	O
12- In comparison with face-to-face courses, the learning activities in this course were	O	O	O	O	O

11. Please indicate your level of agreement with each of the following statements regarding the content and activities of the course you have just participated in. Select the appropriate code (i.e. 1 = Strongly Disagree ---.. 5 = Strongly Agree)

(**1**) Strongly Disagree (**2**) Disagree (**3**) Neutral (**4**) Agree (**5**) Strongly Agree	Answer Code				
	1	**2**	**3**	**4**	**5**
1 - The course had clear objectives	O	O	O	O	O
2 - The course readings and activities were relevant to the objectives of the course	O	O	O	O	O
3 - The exercises and assignments were graded fairly	O	O	O	O	O

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4 - I did not enjoy working with my other group members	O	O	O	O	O
5 - The online collaborative activities contributed to my understanding of the course content	O	O	O	O	O
6 - The instructor's interactions online encouraged me to get the most out of my learning	O	O	O	O	O
8 - I participated more in this course than I normally do in classroom courses	O	O	O	O	O
9 - I would have preferred taking down my own notes in class	O	O	O	O	O
10- Overall I am very satisfied with the way the course was conducted	O	O	O	O	O

12. From your experience in this course (and other online courses that you might have taken), indicate your level of agreement with the following statements regarding online learning. Select the appropriate code (i.e. 1 = Strongly Disagree ---.. 5 = Strongly Agree)

(**1**) Strongly Disagree (**2**) Disagree (**3**) Neutral (**4**) Agree (**5**) Strongly Agree	**Answer Code**				
	1	**2**	**3**	**4**	**5**
1 - To me, online learning does not offer any advantage over classroom learning	O	O	O	O	O
2 - I believe I can learn more, or would learn more through online activities than through classroom lectures	O	O	O	O	O
3 - Online learning saves me more time compared to attending classroom lectures	O	O	O	O	O
4 - Online learning is more cost effective compared to attending classroom lectures	O	O	O	O	O
5 - Compared to classroom learning, the workload for collaborative online learning is too heavy	O	O	O	O	O
6 - I have more difficulty contributing to classroom discussions than I do with online discussions	O	O	O	O	O
7 - I enjoy online learning much more than I do with classroom learning	O	O	O	O	O
8 - I interact more with my instructor and with other students in the online environment than in the normal classroom	O	O	O	O	O
9 - With my current level of access to computer and internet facilities, online learning is not convenient for me	O	O	O	O	O
10- I feel students in my class do not like taking courses online	O	O	O	O	O
11- Personally, I do not like taking courses online	O	O	O	O	O
12- I believe Universities in Ghana are capable of offering fully online courses	O	O	O	O	O

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13. Write down any other general opinions you have about this online course or online learning in general.

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