



A Mixed Methods Inquiry into the Quality of Instructional Designs and Use of Moodle Learning Management Systems in Historically Black Colleges and Universities

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Abstract: There is no doubt that the demand for e-learning has increased tremendously across the globe. Our main observation is that both students and Faculty have expressed overall satisfaction in the use of E-learning systems and Educational technologies. From concept to content, there have been calls for quality assurance in E-learning most especially in the area of Instructional Designs (IDs) and use of Learning Management Systems (LMS). Quality Management is a vital part of any E-learning application. Tertiary Institutions have spent heavily and are soon expecting Return on Investments which cannot be undermined. The purpose of this study is to investigate quality in Instructional designs and use of Moodle LMS. Faculties of Southern University, an Historically Black College and University (HBCU) were interviewed to identify current state and perceived challenges as well as helpful components based on their online experiences. Survey was also carried out to further support our qualitative inquiry. Results of this study indicated that most students and faculty needs an open mindset, motivation, standardized course design, time management and comfortableness with online educational technologies to achieve quality. Interviewee also indicated difficulty in understanding the use, technical problems, cost and lack of training as challenges. Suggestions for addressing the challenges were provided.

Keywords: E-learning, Educational Technologies, Instructional Design, Learning Management Systems, Quality

1. Introduction

Educational Institutions are currently facing challenges related to Quality [1]. However there are no general guidelines to attaining quality [2]. Therefore, many obstacles to implement and practice quality can only be discovered during consistent practice. However, are forced to select an approach out of several approaches that suits their needs. Secondly, successful implementations depends on overcoming typical barriers [3]. Despite the numerous quality standards available, educational organizations are yet to adhere owing to its complex task requiring competencies, commitment and resources.

Quality in the area of training, education and learning, and specifically online learning has become an issue of increasing

importance in the community of practitioners and researchers [4]. Several methods have been designed in different sectors, such as tertiary institutions [5], colleges [6], in the Elearning sector [7], or the industry in general [8, 9]. Scope or methodology are the only factors that have differentiated these methods or approaches.

There are various dimensions to quality which includes quality of use, in the field of online learning, quality of use can be related to training and education supported by the use of Information and Communication Technologies, products, services for learning and processes.

What contributes to students success in an online environment? What constitutes issues or challenges? The diffusion of internet technology have made the answer to these questions more significant [10]. Today, almost all

Universities in the United States are offering online degree programs and ranging from criminal justice to business, education to nursing. In addition to this, nearly all Universities in the United States make use of Learning Management Systems and Instructional designs as a tool to aid the successful delivery of regular face-to-face degree programs [11].

In addition to courses and programs, all higher education institutions online access to basic classes [12]. This includes important information such as the syllabus, resource lists, recommended texts and instructor office hours. For example, at the University of California at Los Angeles (UCLA), it is mandatory for all arts and science programs to have websites [13], even if otherwise, educators are increasingly developing online presence for their courses via the internet [14]. There is significantly high demand in access to Elearning and LMS and this sounds very interesting. Initial research into the value of online learning has generated some overall insights [15-17]. For example, literature has proven that Elearning enables schools and/or instructors to reach new students remotely, it also eases convenience and creates new opportunities in education [18]. Research have proven that there are lots of benefits for using LMS in teaching and learning. It allows educators divert their menatilty from concept to process [19] promotes passive to active learning [20]. Integration of LMS [21] and to promote interaction between learners and instructors [22, 23].

Furthermore, it is expedient to note that the movement towards online learning is not grounded in empirical evidence that it is effective and/or beneficial for learning [24]. Studies emanating from elearning have remained subjective because it focuses on the view of the educator or the instructional designer[25]. While the overall perspectives and faculty- based studies are important for understanding the potential value of online learning, few studies have

detailed the learners perspectives of online learning [26]. More research activities are needed to promote students online experience as well as overall perceptions. The constant growth of the web influences and changes how online courses are designed and implemented. This in turn may also change the student's perception of their online experience. Continued studies of Southern University faculty and students view of online learning and LMS environments are needed in order to develop quality, more effective web-based instructions that can optimize the learning experience in this ever-changing technology world.

The purpose of this paper is to describe the current state of instructional designs and use of LMSs using southern university as a case study. Specifically, the researcher sought to explore faculty and students' barriers to quality of use using a qualitative interview. The discussion of the study begins with a review of literature related to online learning, instructional design and use of LMSs, Next the background of the research followed by the results of the study is described., Finally, implications and suggestions for further research.

2. Literature Review

The Literature focused on online learning, instructional designs and LMSs have continued to dominate research in elearning over the past 10 years. The review below focuses on literature related to educators and learners experience, particularly the students perspectives of strengths and weaknesses related to online learning.

The process of designing instructions is so intense that those engaged lose sight of the overall course landscape through involvement in the details [27]. In order to attain quality in instructional designs it must go through team review, staff review and peer review.

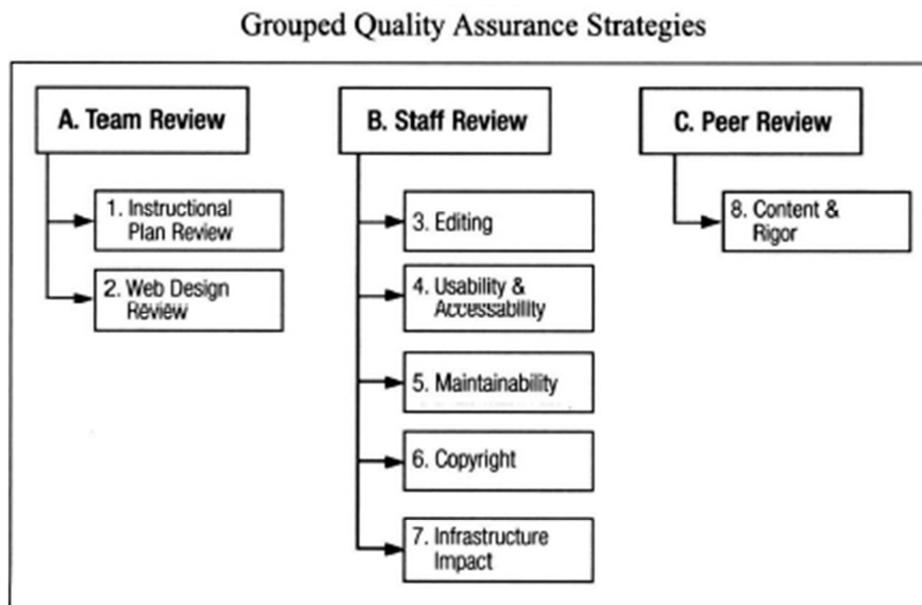


Figure 1. Simplified diagram representing Quality Assurance Strategies.

Some studies have looked into cause and effect of learners view about online learning especially in the areas strength, weaknesses, opportunities and threats., [28] carried out a qualitative study by interviewing students to obtain their perspectives on eLearning, results from the interview shows that some students tended to think more deeply about the subject areas when responding in writing as compared to giving verbal responses, another participant indicated that the online technology allowed more reflection than what might occur for some individuals in face-to-face classroom discussions.

The use of LMS is now widespread across the globe, both in developed and developing economies. For example, all Spanish universities use an LMS [29] and three-fourth of large companies use these systems during their eLearning activities. LMS provides learners and educators with technologies aimed towards improving learning. However, the high adoption rate have not necessarily yielded in better student performance. Three primary reasons have been suggested; The tools provided are not used properly and often are used as mere spaces to publish courses; LMSs restrict opportunities for collaboration in student and for the promotion of social constructivism which is not limited to a period of time [30]; They tailored towards the interest of the institution rather than the needs of students [31].

3. Research Design

The purpose of this study was to use a mixed method study to determine the current state and investigate quality in instructional designs and use of Moodle Learning Management Systems in Southern University. Three primary research questions guided this research:

1. How does the instructor's approach influence student's use of Moodle LMSs?
2. How could online interactions between Instructor and Students be improved?
3. How do students maximize the use of online learning environments?

3.1. Participant

The study participants that volunteered to participate in the interview were faculties in the department of Science and Mathematics Education at Southern University. Participants in the study are very familiar with the use of online learning environment and educational technologies. Participants have occupied various roles which includes instructor and educational technology administrators. Participants signed an informed consent form. Doctoral Students and Faculty in the same department responded to the Online Survey.

3.2. Assumption and Limitations

Assumptions associated with this research included that participants who volunteered to participate must be an

experienced educational technology enthusiast. It was also assumed that participants would be honest in recording a response. Further assumptions were that the participants were representative of student and faculty at the university where the research was conducted and that participants were generally representative of the population involved in an online learning environment at the Postsecondary level.

The major limitation was that the study made use of just two participants in the qualitative interview due to time constraint.

3.3. Data Collection

The study adopted a mixed data collection methods. The interview method was chosen to obtain in-depth information in regard to instructional designs and use of moodle LMS and to solicit any advice interviewee may have for students and instructors (see Appendix for the interview protocol). The online survey method was introduced to strengthen the interview method.

3.4. Data Analysis

Analysis of the data focused on the three areas addressed in the research question. It consisted of coding the interview transcripts. Indicators from the interview protocol were identified to assist with the coding. Researcher coded the interview transcript. Themes and patterns were then compiled according to the research questions. Results from the analysis are discussed in the following sections. Quantitative data was analyzed with graphs and interpretation of the corresponding graph.

4. Qualitative Results

Results indicate several trends in instructional designs, educational technologies and use of LMS as well as various challenges that confront them. The overall research questions have been used to organize the presentation of data.

4.1. Interview Question 1

Are LMSs really better than the traditional ways of learning?

Interviewee A felt that "LMS is a one stop shop". She suggested that 90% of student and faculty needs is in the LMS. She stated,

Learning Management Systems is like a one stop shop where you can put everything that a students needs into one place, so they don't have to go searching different places, everything is there for them in one place.

Interviewee B felt that "one is not really better than the other, it depends on the student and the instructor". She stated,

I don't think that you should really look at one is being better or not better, I think very strongly that if you use them together, you have some students that really can work very well using learning management systems environment but

there are others that may not and for those students, you still need your traditional class room environment, now when you put the two together, there are many cases where one can supplement the other, some students with different types of learners, some are hands on while some are not, some are visual learners, so depending on the type of learning you are, one may be better for you, the learning management system may be better for you whereas another student, that students need that lecture, needs that face-to-face, so I wouldn't say that one is better than the other, I think that it should be used together and to supplement one another.

4.2. Interview Question 2

Why do some students prefer traditional ways of lecture delivery to use of Online technologies LMS?

Interviewee A felt that "some instructors use it as repository, some as interaction and some just for texting". She said it depends on the instructor that use it.

Laughs So It just it depends on how he is using the course, everybody doesn't use it the same way, some people use it as repository, other use it as interaction, others use it just for texting, it depends on how the instructor uses it that turns students on to it or turns them away from it.

4.3. Interview Question 3

Why did Southern University Chose to adopt Moodle LMS over Blackboard LMS?

Interviewee A felt "reduced cost, low university enrollment which led to lack of funding, blackboard major upgrade was the major cause". She stated,

For a couple of reasons, one is called reduced cost, state appropriated funds are not enough, public university enrollment are what helps the university, because our enrollment was low, funds were not what they used to be. Cost was one of the issue, the other issue was Blackboard did a major upgrade, it was not the latest version that other campuses were using, we were on a older version, and the upgrade would cost us a lot of money and just being able to upgrade that, maintain it and do other things, would cost us much more at the time so what we needed to do was to look for other alternatives, moodle actually went up few year ago, then it went away and came back. about 2013, 2014 it was actually proposed that moodle will be used then but southern never did make it happen.

Interviewee B felt "Moodle holds the instructor and students accountable" she stated

Moodle is growing in SU, we previously used blackboard, a lot of teachers use that. Moodle I like a lot because it allows you to put information out there and it's a good tracking system and its also a good accountability system because if a faculty member uses moodle and if another faculty member says that he or she has done something, it's there in moodle, if a student says the faculty member didn't do it ****laughs**** that's just the accountability side but for instance learning side, it allows to us to learn anytime and anywhere, you have access, if a

student is on travel, a student has no excuse for not getting the assignment done because if its in moodle, you can go into moodle and get it done.

On whether Moodle is better than blackboard, she stated "Its depends on the person, people are comfortable with what works better"

4.4. Interview Question 4

How do you think Southern University teaching Practice changed from before it began to integrate Moodle LMS into its lessons? Do you see these changes as significant to the outcomes of teaching? Interviewee A felt "Faculty can choose to use it or not, its difficult to measure except its mandatory" She stated,

Ok, so let me say this, the use of LMS is not mandatory, you need to understand that, its not required, faculty can choose, to use it or choose not, some people don't use it, so I don't think you can measure change in teaching practices unless something is mandated that everyone must use it.

4.5. Interview Question 5

In what ways do you think the integration of instructional designs in online environment has influenced interactions between students and teachers? What impact, if any, should Instructional Designs(IDs) have on the way students interact with you and one another?

Interviewee A felt "instructional designs are not uniform" she felt "every class is different", she suggested "every discipline for example science, should work with the same instructional design". "If IDs are poorly designed, students wont know what to do, if its clearly designed, it makes for better experience " She stated,

I wish like with instructional designs again will be uniform but its not uniform. If you go into my class and you go to somebody else's class, with the same topic, I guarantee you, everyone of those classes will be different which is fine, is it the same discipline say science, yes, that's fine, everyone is science should work with the same instructional design..... Ok, I gat you, ohh I think that there are way that the course is designed really because of how the students interact, if its poorly designed the students wont know what to do, they get confused but if its clearly designed, it makes for better experience for both faculty and students

Interviewee B felt "it has positive and negative contributions". She stated,

In what ways? I am gonna try to respond in the practical way, for students, in some cases, it may take away from that interaction, if student is working at home all the time and he don't have that face to face, that can kind of lessen the interaction itself and you ll just talking to somebody in cyberspace you don't know but if you are in a traditional environment, some word of unspoken force that bring you together where you will have little or more interaction so it may lessen it, it actually depends on the personality. In a graduate program, it should not and ill tell you why, even though graduate students are supposed to be independent

researchers, you have to communicate with your professor so it shouldn't lessen the interaction at all, in undergraduate program, it could, so depending on the type of student, you have to know your self and know if the online learning is meant for you and if its not, get into the traditional environment where you can get more knowledge.

4.6. Interview Question 6

Do educational technologies ease stress off the faculty?

Interview A felt positive "it surely eases stress off faculty" She stated,

Yess, Yess, I will say yess foluso, Yes they know how to do it properly, its just how that is causing them stress, it may be stressful the first time but once you get it, you know, it will be easier to do it again.

4.7. Interview Question 7

Do you need to do further technology integration in your classroom? What additional tools or professional development do you need in order to accomplish this ?

Interviewee A felt "even though there are some things she felt she could do more using existing tools, there is no need for more tool, all that is needed is training and assistance for all users" She stated,

hmm, sometimes I feel somethings I could do more or oh I should have done it that way, ohh ill try next time that way, ill make a note next time but it just depends on the course.....I don't think there is need for more tool, I think there is need for more training and more assistance needed for faculty.

Interviewee B felt "of course yes" she stated,

Absolutely, I think so and ill tell you what I love to do, I have to work on this, something that my husband does and he use a software package called EXPLAIN EVERYTHING, you may have heard me talk about it and with this software, it allows you to record and put your lectures out there in more detailed form and ill like to sit down and have the time to do a whole semester of lectures notes with examples and working through the content and be able to put them out there so can I improve on what am actually doing, my self and class for technology, Yes, do I plan to ? absolutely, do I plan to move completely away from the traditional ? No because ive seen students that need that face to face, I have some students where I can put it out there and they can just go for it but I have some others that cant, they just need a little bit more handholding

4.8. Interview Question 8

How do you envision IDs and use of Moodle LMSs in southern university three to five years from now?

Interviewee A felt "it would take southern university to the another level, Good ID and exposure will make things easier"

She stated,

Hamm, I think it will take us to another level if we have the proper (whats the word I want to use?) oversight, some types of rubrics and standardization across our campuses even if its just by discipline, there should be some oversight. Because for instance if instructional design in a course and faculty have been giving the proper element, exposure to instructional design, I think it will make everything so much easier

Interviewee B felt "I can see SU engaging in more online learning" she stated,

I can see SU engaging more in online learning, I can also see the professors becoming more technology savvy and incorporating it in their classes a lot more and if we don't do it, I think that its gonna be bad, the university will not be on pace with the changes that are taking place. We wanna be able to keep up with not just local but global changes that are taking place and technology is really coming up strong so we have to work to keep up with that.

4.9. Interview Question 9

Is there any other information or recommendation as regarding IDs, Professional Development, Use of Moodle LMS, What advice do you have for Southern University faculty?

Interviewee A felt "Faulty must be open minded, if used properly can take class to another level" On the issue of faculty who have little experience with using educational technology, Interviewee felt "it might take a little bit longer to learn but experienced faculty must be willing to help inexperienced faculty" She stated,

I will say faculty should be open minded about instructional designs and educational technologies, if used properly, it can take your class to another level..... Ive had experience with faculties in these categories where I had to tell them why don't you do it this way, sometimes it takes a little bit longer to help them see the benefits of educational technologies. But we have to help them

5. Quantitative Results

Figure 2-5 represents graphs showing the summary of online survey responses. Out of the 25 students and faculty that received the survey link, only sixteen respondents took part in the survey. Figure 1 shows that (83.3%) think LMS and IDs have contributed positively to teaching outcomes. Figure 2 shows that (67%) are familiar with Educational technologies at the intermediate level. The interesting fact about Figure 3 is that there is still high level of criticism as to whether LMS are better than traditional ways of learning. Figure 4 shows that only (50%) agree that LMS and IDs speed up work.

Do you think Learning Management Systems and Instructional designs have contributed positively to teaching outcomes ?

6 responses

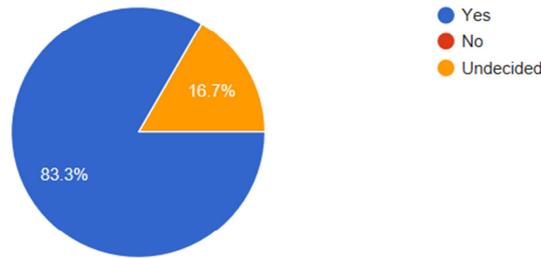


Figure 2. Simplified pie chart showing contributions of LMS and ID.

Familiarity with Educational Technologies

6 responses

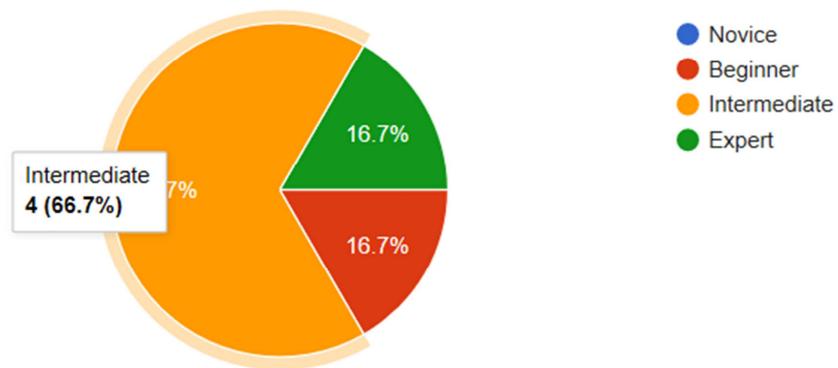


Figure 3. Simplified diagram representing participants familiarity with Educational Technologies.

Are Learning Management Systems really better than traditional ways of Learning?

6 responses

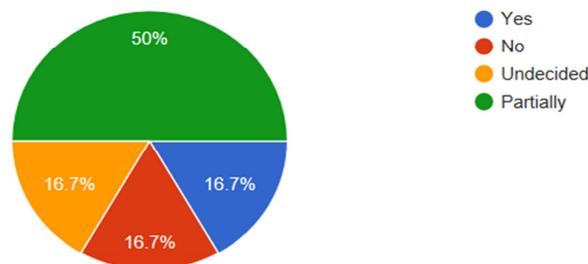


Figure 4. Simplified diagram showing whether LMSs are better than traditional forms of Learning.

Instructional designs and moodle LMS enables me to accomplish task more quickly

6 responses

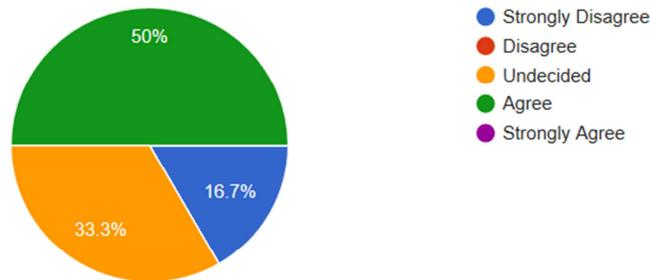


Figure 5. Simplified Pie-chart showing participants view of Moodle LMS.

6. Conclusion

The current study offers several implications for practice and research. First, there is a need for improving instructional designs for regular and online courses. The design should focus not only on the technological aspects, but also on uniformity on the goal, objectives and expectations for the students. Faculty should continue to explore design models that are most effective for online learning and LMS.

Secondly, there is a need to work with inexperienced faculty and students with respect to necessary training and assistance. Higher education institutions should invest in training and development for educational technology, making them see reasons why they need to embrace educational technologies.

Finally, there is need to work with students to assist them with establishing a community of feelings of connection in online contexts. Integrating strategies for community building into the design of the course may assist with this effort.

The growth of Educational technologies will continue and as indicated in this study, it will come with its own challenges, institutions and individuals may face different challenges but as educators and students become more comfortable to adapt at communicating and learning via LMSs, it will remain imperative that quality practices associated with these learning environments continue to be explored.

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