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Research Paper

Gender Perception on the Effectiveness of ULearn Management System as an eLearning Platform for Distance Education

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ABSTRACT

The increase in education has spilled over to the concept of distance learning to improve the services of distance learning, online web-based systems and platforms. As students and teachers use these platforms, it is important to investigate the effectiveness of these platforms. Moreover, since gender differences exist in traditional face-to-face studies, it is important to investigate the differences in gender perception on the effectiveness of these online distance learning platforms. The study adopted quantitative descriptive survey analysis to investigate effectiveness and differences in gender perception on the effectiveness of uLearn (Online distance learning platform) in the University of Ghana. To measure the effectiveness and gender difference, Test of Science Related Attitudes (TOSRA) consists of 54 items organized into nine scales: Computer Usage (CU), Teacher Support (TS), Student Interaction and Collaboration (SIC), Personal Relevance (PR), Authentic Learning (AL), Student Autonomy (SA), Equity (EQ), Enjoyment (EN), and Asynchronicity (AS) was used. The study found that the level of effectiveness of the platform, from the perspective of the student was high. Moreover, the study found statistical significant differences in gender perception on the effectiveness of the distance learning online platform.

Keywords: *Distance learning, ULearn, ELearning, learning management systems, platform, Gender, Asynchronicity, Distance learning, Perception*

INTRODUCTION

In recent years, there have been major changes in how teaching and learning is delivered. Gradually, the traditional classroom learning is giving way for online based teaching and learning (Jazeel & Saravanakumar, 2016). The increasing pervasiveness of online based teaching and learning is spearheaded by the ever-increasing advancement in technology. Over the last decade, the diffusion of technology and associated web-based learning has increased the adoption of online education or what many terms as distance learning (Armstrong, 2011; Ramírez-Correa, Arenas-Gaitán, & Rondán-Cataluña, 2015). For instance, as indicated by Allen and Seaman, (2008) a Sloan Consortium survey of 2,500 U.S. colleges and universities revealed that, online enrollments more than doubled from about 1.6 million in 2002 to 3.9 million in 2007. It is therefore not surprising that a recent study conducted in 2018 from the same consortium showed that 6.7 million people enrolled in online based studies in the United States.

Within the last decade, the growth of online activities has flourished in Ghana due to the rise of infrastructural development by technological giants in the country (Edumadze, Ogoe, Essilfie, G., Edumadze, & Graham, 2017; Freeman, Antwi-Boampong & Agyemang, 2019). In view of this technological development, it is prudent that educational institutions and most especially institutions of higher learning take full advantage to effectively adopt online learning strategies and maximise its use efficiently. It must be noted that Ghana is growing steadily in the areas of distance educations where the use of online learning is well pronounced. In view of this many studies are fronting for the use of online learning platforms and web-based studies while others are campaigning strongly for its use across all institutions of higher learning (Asabere, Togo, Acakpovi, Torgby, & Ampadu, 2017; Bonney, Namburete, Dagadu, Quao, Osei-Ampofo, Awariyah & Cobbold, 2019; Edumadze et al 2017; Freeman et al 2019).

However, much as the Ghanaian educational ground appears fertile for web-based studies, there exist general demographic differences in terms of gender. Some studies have argued that males and females have different approach to studies in the traditional setting and same is expected to be reflected in online based studies (Kotoua Ilkan, & Kilic, 2015; Owusu-Mensah, Anyan, & Denkyi, 2015). Other studies have made categorical allusion that there is going to be a huge gap on how web based studies is going to affect females. However, this assertion is without any empirical support (Asabere et al 2017; Edumadze et al 2017; Freeman et al 2019; Owusu-Mensah et 2015). The implication

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therefore is that to achieve a high level of effectiveness in the usage of online or web-based studies in higher institutions, the demographic differences in terms of gender should be given proper attention.

While little has been done in finding empirical support for gender differences as far as web-based online studies is concerned, there is equally a dearth of literature on the effectiveness of online web-based studies in Ghana. Some studies have been made on the role of web-based studies in contemporary Ghanaian education (Boateng, Mbrokoh, Boateng, Senyo & Ansong, 2016), while others have examined the effect of online web-based studies in distance learning (Asabere et al 2017; Edumadze et al 2017; Freeman et al 2019; Owusu-Mensah et 2015). However, mechanisms for providing effective web-based online learning is yet to get the needed attention in literature.

Additionally, web-based learning platforms come in different ways which put its effectiveness in the support of distance learning in divergent views (Maina & Nzuki, 2015). Due to technicalities in online web-based studies, many people shy away from utilizing these services (Thomas, & Oladejo, 2017). Thus, when introduced in distance learning, it becomes imperative to assess how people view its effectiveness. Effectiveness in this context is how users (male and female students) benefit from the various dimensions or elements as used in online based learning. According to Gitau and Omwenga (2016) some of the elements within online based learning which breed divergent views on its support and effectiveness are computer usage, teacher support, student interaction and collaboration, personal relevance, authentic learning, student's autonomy and equity. These elements and how they support and contribute to effectiveness in online distance learning, is argued to have gender-based differences.

The forgoing argument, in spite of how valid it appears to be on the face value, do not have comprehensive empirical support. Although some studies have delved into the effectiveness of online learning, it is important to examine how the concept differs from the perspective of males and females. It is therefore important to empirically investigate, gender perception on the effectiveness of online web-based learning. This is very important especially in Ghana, as the country is regarded as one of the fast-growing countries in technology and distance learning education. The study will open up on how students view online web-based studies and the usage of online learning platforms. Students view, use and understanding of online web-based studies would then provide basis for policy formulation by educational administrators and management of distance education in the various schools in the country.

Problem statement

The increasing rate of online education in Africa and for that matter Ghana, necessitates a vigorous study into the various dynamisms of online distance studies as far as users are concerned. Users in this context include teachers, school management or administrators and students. The most prominent stakeholders among these categories of online learning is students. Traditionally, there have been concerns raised about gender inequity in the classroom, particularly once females reach higher level of education and in terms of participation in class discussions. Lower rates of participation of females have been reported, as was less assertiveness on the part of the female students (Crawford & MacLeod, 2010). In contrast, males seemed more outspoken and more comfortable interacting.

Difference and inequity in students participation within traditional form of learning is believed to occur in the online based platforms as well (Jazeel & Saravanakumar, 2016; Maina & Nzuki, 2015 Thomas, & Oladejo, 2017). However, unlike the traditional studies setup where evidence exist on gender differences academic studies, same cannot be said with regards to online web-based learning. Moreover, the online web-based studies with element like computer usage, teacher support, student interaction and collaboration, personal relevance, authentic learning, student autonomy, equity, enjoyment, and asynchronicity and their contribution to the effectiveness of online learning have not been widely exploited (Gitau & Omwenga, 2016). Additionally, from the perception of students the extent of effectiveness of online based distance learning also needs to be examined. This is because the effectiveness and usage of web-based online learning has always been and continuous to be primary concern of all stakeholder of distance education. Therefore, the study seeks to investigate from the perspective of students, the level of effectiveness of online learning and the gender differences in this perception.

Purpose of the study

Web based learning or distance learning has become an accepted medium for education, gaining popularity among many different segments of the population. It has however been observed that in traditional face -to- face classroom studies, students are often reluctant to participate due to anxiety or shyness, lack of preparation for class, and the classroom dynamics caused by differences in status. Similarly, many studies on asynchronous online course discussions believe that there is a tendency of online studies to face the problems that occur in classroom. (Smith, Ferguson, & Caris, 2012; Zabadi & Al-Alawi, 2016; Adegbija, & Bola, 2015). This, according to researchers put the

effectiveness of online study in subjective mode especially on gender basis. To find empirical evidence in support or otherwise of this claim, the study specifically seeks to:

1. Determine students' perception on the level of effectiveness of web-based distance learning
2. Examine gender differences in the perception on the effectiveness of web-based distance learning

Hypothesis

H_0: There is no statistical differences in gender perception on the effectiveness of web-based distance learning

H_1: There is statistical difference in gender perception on the effectiveness of web-based distance learning

LITERATURE REVIEW

The study is guided by the theory of self-efficacy. The self-efficacy theory was developed by Bandura in 1977 with references to behavioural attitude of people (Ingersoll, 2016). According to De FátimaGoulão, (2014), self-efficacy beliefs are fundamental to human functioning. A person must possess the requisite knowledge and skills, as well as the motivation and perception, that s/he can successfully exhibit the required behavior under difficult circumstances (Köseoglu, 2015). Bandura theorized that perceived self-efficacy makes a difference in how people think, feel, and behave. The theory states that people faced with constant rejection must possess high self-efficacy, or self-worth, in order to persist. The theory further maintains that self-efficacy is based on one's judgment of one's capacity to execute a given responsibility (Schunk & DiBenedetto, 2016).

The assumption of the theory has various implication for the current study. For instance, the theory argues that skills, knowledge and motivation play important roles if individuals would be successful in their endeavors. The implication of this assumption is that for students to really get the effectiveness of online web-based distance learning platforms, they should have the required skills to access and use the various existing systems. In addition to skills, students should possess accurate knowledge of the online system and be motivated to use it. This further implies that if skills and knowledge as well as motivation is not present, students would not realise the effectiveness of the system. Furthermore, the theory helps us to understand that students should build self-efficacious behaviour in order absorb the technological dynamism that comes with web-based online studies. Additionally, self-efficacy is heavily linked with motivation (Bandura, 2012).

However, Kotoua, et al (2015) argued that, online learners are often required to be more intrinsically motivated because the learning environment typically relies on intrinsic motivation and the associated characteristics of curiosity and self-regulation to engage learners. The authors continued that, the technology itself is viewed by some as inherently motivating because it provides a number of qualities that are recognised as important in the fostering of intrinsic motivation, namely challenge, curiosity, novelty and fantasy (Owusu-Mensah et al 2015). The novelty factor tends to wear off as users become accustomed to the technology (Asabere et al 2017) and intrinsic motivation can wane. Frustration with technical problems can also reduce intrinsic motivation. Therefore, to ensure effectiveness in web-based online studies, students need to be self-efficacious or motivated to deal with the challenges and frustration that comes with technological dynamism.

Web based Learning

Web based learning may be defined as instruction delivered electronically via the Internet, an intranet, or multimedia platforms such as CD-ROM or DVD (Asuman, Khan & Clement, 2018). Web based learning may be delivered either synchronously, where the instructor and students must be online simultaneously, or asynchronously, where there are no time restrictions and students and teachers do not have to be online at the same time (Bonney et al., 2019). In contrast to the classic classroom environment, in an online environment there is no face-to-face contact. According to Tanner et al., context clues are more difficult to read in an online environment, and immediate dyadic communication is more challenging than in traditional face-to-face classrooms. Like any other learning medium, web-based learning has both strengths and challenges.

Research has consistently documented many of these important strengths. For instance, Broadbent and Poon (2015) found that online technology can allow for greater student reflection and foster more thoughtful and responsible comments than what might occur in face-to-face classrooms. Flexibility and convenience are additional strengths, as it is often viewed as easier to work in collaborative groups and schedule meetings because students can meet online instead of in-person (Edumadze et al., 2017). Web based learning has been described as personalized and self-organized because of control over content, learning sequence, pace of learning, time, and media, factors that allow learners to tailor experiences to meet learning objectives and manage access to materials (Olojo, Adewumi, & Ajisola, 2012).

While the strengths of web-based learning are impressive, research indicates it also brings with it many challenges. For example, Asabere, et al (2017) found that it is more difficult to provide affective support to students in web-based learning, where affective support is defined as communications from instructors to students that the students are important and valued individuals. Additionally, Arkorful and Abaidoo (2015) identified the lack of social interaction as the single most important barrier to students learning online. Administrative and instructor issues, time and support for studies, and learner motivation came in very closely as the next most significant barriers, with technical problems and cost being the least significant. Due to both the strengths and weaknesses that exist, instructors and designers need a better understanding of how students perceive web-based learning. In view of this, Kotoua et al (2015) noted that investigating student perceptions informs instructors and designers on how best to foster active participation and engagement in the learning process, which effectively enhance students' learning and motivation. Young and Norgard (2006) stated that in order to assure quality and consumer satisfaction, institutions and their faculty must pay close attention to their students' perceptions of online courses and programs. Freeman et al (2019) also recommended that research on quality web-based learning should focus on student perception.

This interest in students' point of view has led to the development of a number of instruments designed to evaluate perceptions of web-based learning (see Asuman et al 2018; Broadbent & Poon 2015; Edumadze et al., 2017; Kotoua et al 2015; Owusu-Mensah et al 2015). In this study, the Web based learning Environment Survey (OLES) (Edumadze et al., 2017; Kotoua et al 2015) was chosen because it incorporates scales from five other instruments. One strength of the OLES is that it allows researchers to view web-based learning with a finer lens as it measures students' perceptions of nine different components of web-based learning, derived from the five instruments on which it is based (detailed later in this paper). Investigating students' perceptions of these elements provide important information on the unique nature of web-based learning environments.

Johnson (2011) notes that it is important for researchers to understand the characteristics of students participating in web-based learning and how these characteristics may influence the learning outcomes that are achieved. In addition to examining the elements of web-based learning mentioned above, in the present study, a decision was made to consider two important student characteristics: ethnicity and gender. Previous research has examined ethnicity both across cultures () and within the same culture (Broadbent & Poon 2015; Edumadze et al., 2017; Kotoua et al 2015), and the results of these studies point to an increasingly diverse population engaging in web-based learning. Another important student characteristic is gender; the results of previous studies on the difference between males' and females' perceptions tend to be very mixed (Kay, 2008). It was therefore decided that it would be valuable to investigate these two characteristics and their impact on students' perceptions of web-based learning

Learners motivation in web-based online learning

The first perspective adopted when examining motivation in online learning settings has been to concentrate on the design of the environment to elicit student motivation. Several instructional design models have been put forward, some of which consider learner motivation as a component of a broader design approach, and others which focus exclusively on motivation (Schunk, D. H., & Usher, 2012). By far the most frequently used instructional design framework for the development of motivating online learning environments is Keller's ARCS model developed by Keller in 1987 (Yoo et al 2015). The framework was developed as a means of influencing learner motivation by using a systematic approach to instructional design. The attention, relevance, confidence and satisfaction (ARCS) categories serve as guidelines for systematically developing instructional strategies that capture learner attention, establish relevance of what is being taught, encourage learner confidence, and provide a sense of satisfaction via intrinsic and extrinsic rewards (Kotoua et al 2015; Owusu-Mensah et al 2015). Though not originally developed for it, the ARCS model has been used as a design approach for instruction in online learning contexts (Keller & Deimann, 2012) and has underpinned a variety of other studies (Kavanoz, et al 2015; Shen, Cho, Tsai, & Marra, 2013) in online courses and the increase in massive open online course popularity, especially when delivered through an online college using educational apps or Web-based online learning

Gender and Web based learning

Another important characteristic that impacts students' perceptions of web-based learning is gender, with some research findings suggesting males have more favorable perceptions. For example, Kavanoz, Yüksel and Özcan, (2015) examined gender differences in behavior toward computers and found that males had more positive attitudes toward computer use, and used computers much more frequently than females. Similarly, Broadbent and Poon (2015) investigated the effects of age, gender, and prior computing experience on attitudes toward computers in 278 students aged 11-12 and 15-16 years. Males from both age groups reported greater experience with and more positive attitudes toward computers than their female peers.

More specifically, in line with a number of previous studies, that study found that males had greater experience with computers than females. The majority of those who owned or had access to computers at home, used them more frequently, and had wider general experience of computing, were males. Males also showed greater liking for computing than females overall, and males' level of liking did not differ between the two age groups. However, although younger females reported liking computers almost as much as younger males, older females were less positive in their perceptions (Gyamfi, 2017; Sarfo, Amankwah & Konin, 2017).

More recent international research support previous findings in the U.S. attesting to the idea that males have more positive perceptions of web-based learning than females. Gyamfi, (2017) explored gender differences in perceptions and relationships among factors affecting web-based learning acceptance. In a survey of 67 female and 89 male Taiwanese employees, males' ratings of computer self-efficacy, perceived usefulness, perceived ease of use, and behavioral intention to use e-learning were higher than those of females. Similarly, Yoo, Huang and Kwon (2015) investigated differences in use and attitudes toward the Internet and computers generally for 220 Chinese and 245 British students. Responses to a self-report survey questionnaire indicated significant gender differences in both national groups. Males in both countries were more likely to use e-mail or chat rooms than females. Males played more computer games than females, with Chinese males being the most active gamers. Males in both countries were more self-confident about their computer skills than females, and were more likely to express the opinion that using computers was a "male" activity and skill than were females. Gender differences were higher in the British group than the Chinese group.

U.S. based studies conducted by Kay (2009) and Tsai and Tsai (2010) respectively have produced evidence suggesting that male students are significantly more comfortable with computers than females, and that males have significantly higher Internet use intensity than females. However, in Tsai and Tsai's study, females were found to be more communication-oriented Internet users, seeking interaction with others, while males were more exploration oriented in their use. These differences have been found to result in females experiencing a richer, more connected, and more valuable web-based learning experience than males (Johnson, 2011). Additionally, according to Chen, Yang, and Hsiao, (2016)), female students tend to find web-based learning more social and beneficial than male students do, and they have been found to display a higher degree of satisfaction than male students with web-based learning (González-Gómez, Guardiola, Rodríguez, & Alonso, 2012).

A review by Kizilcec, Pérez-Sanagustín & Maldonado, (2017) found that most studies within the U.S. investigating the impact of gender have looked at computer attitude, ability, and/or use, with 30-50% of the studies reporting differences in favor of males, 10-15% reporting differences in favor of females, and 40-60% reporting no difference between gender. While there is a persistent pattern of small differences in males' favor in terms of computer attitude, ability, gender, and use, the results are not necessarily the same when it comes to perceptions and experiences of web-based learning. A recent study by Johnson (2011), for example, interestingly found that females perceived greater social presence in web-based learning, performed better, and were more satisfied with the experience than males.

The literature review has assembled information on web-based online learning and gender perception on its (web-based online learning) effectiveness. The analysis of the efficacy theory drew the theoretical underpinning of how one's ability, skills, knowledge and motivation could be combined to achieve success. The theory help explained how differences in gender exist in the assessment of the effectiveness of online based distance learning. Moreover, the role of learners motivation in online studies have equally been established

METHODOLOGY

The study adopted a quantitative approach due to the numerical statistical analysis of the data. In addition to the quantitative approach, descriptive survey design was used in gathering and analysing data. The survey design is a method for collecting information or data as reported by individuals. Borrowing from Saunders, Lewis and Thornhill (2007), the use of survey design provides an avenue to employ descriptive and inferential statistics to explain findings and answer research questions. The features as explained are consistent with the focus of this study.

Study participants

The participants in this study were 120 undergraduate and graduate students enrolled in 100%-online education courses during the 2018-19 academic year at the University of Ghana. Courses were taught using the University's learning management system, uLearn. The uLearn. an open source Web-based Learning Management System that has been customized for use at by distance learning students from the University of Ghana. 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 which is also accessible by means of the uLearn

Measurement

The respondents responded to the Web based learning Environment Survey (OLES), which provided educators with a means of eliciting and analyzing students' perceptions of web-based learning environments. The overall assessment of effectiveness of the online web-based platform was based on the Test of Science Related Attitudes (TOSRA) developed by Fraser, (1981). The TOSRA consisted of 54 items organized into nine scales: Computer Usage (CU), Teacher Support (TS), Student Interaction and Collaboration (SIC), Personal Relevance (PR), Authentic Learning (AL), Student Autonomy (SA), Equity (EQ), Enjoyment (EN), and Asynchronicity (AS). These nine items helped to measure the effectiveness of the web-based online distance learning platform from the perspective of the participants (students). This same nine items helped in determining the perceived differences in gender on the effectiveness of the web-based online distance learning platform. Participants were asked to rate the items using a five-point scale (1 = "almost never"; 2 = "seldom"; 3 = "sometimes"; 4 = "often"; 5 = "almost always"). Table 1 presents the items in a table format.

Table 1. Sample items used in survey

Scale	Description	Sample Items
1.*Computer Usage (CU)* – 6 items	The extent to which students use their computers as a tool to communicate with others and to access information	I use the computer to e-mail assignments to my teacher (Item 1) I use the computer to read lesson notes prepared by the teacher (Item 4)
2.*Teacher Support (TS)* – 8 items	The extent to which the teacher helps, befriends, trusts, and is interested in the students	If I have an inquiry, the teacher finds the time to respond (Item 7) It is easy for me to contact the teacher (Item 13)
3.*Student Interaction and Collaboration (SIC)* – 6 items	The extent to which students have opportunities to interact with one another, exchange information, and engage in collaboration	I can work with others (Item 15) I discuss my ideas with other students (Item 18)
4.*Personal Relevance (PR)* – 5 items	The extent to which there is a connection with students' out of school experiences	I can relate what I learn to my life outside of this class (Item 21) I apply my everyday experiences in class (Item 23)
5.*Authentic Learning (AL)* – 5 items	The extent to which skills and processes of inquiry and their use in real-world problem solving and investigation are emphasized	I study real cases related to the class activities (Item 26) I apply real-world experience to the topic of study (Item 30)
6.*Student Autonomy (SA)* – 5 items	The extent to which students have opportunities to initiate ideas and the locus of control is student oriented	I work during times I find convenient (Item 32) I am in control of my learning (Item 33)
7. *Equity (EQ)* – 7 items	The extent to which students are treated equally by the teacher	I am treated the same as other students in this class (Item 38). My work receives as much praise as other students' work (Item 41)
8.*Enjoyment (EN)* – 6 items	The extent to which teachers cater for students differently on the basis of ability, rates of learning, and interests	Web based learning is exciting (Item 44) I would enjoy my education if more of my classes were online (Item 47)
9.*Asynchronicity (AS)* – 6 items	The extent to which students enjoy the asynchronous nature (e.g., does it promote reflective thinking?)	I access the discussion forum at places convenient to me (Item 49) The process of writing and posting messages helps me to think (Item 52)

The first research objective was to:
Determine students' perception on the level of effectiveness of web-based distance learning

Since the study adopted quantitative analysis of the data, this requires choosing appropriate central tendency. The choice of the most appropriate central tendency to be used in this study to analyse these data is based on an assessment of the normality or otherwise of distribution of the two variables (level of perceived effectiveness of the web-based platform and gender differences) Since the study uses Likert scale of 1 to 5, the study follows the cut-off point as applied by Dess, Lumpkin and McFarlin (2005) to determine the perceived lower and higher region of effectiveness of the web-based platform from the perspective of the students. Thus, 1 to 2.9 denotes low level of effectiveness of the platform and 3 to 5 represents high level respectively.

The second objective is to
Examine gender differences in the perception on the effectiveness of web-based distance learning

This objective is analysed using independent sample t-test. The t-test relies on t-statistics to determine the significance difference. The results from independent t-test often reports two t-statistics. To determine the appropriate t-statistics, the Levene test is used. This objective comes with hypothesis. The null hypothesis is that:
There is no statistical differences in gender perception on the effectiveness of web-based distance learning

Result presentation

Of all the participants, 58 were female (48.4%) and 62 were male (51.6%), with an age range of 19 to 58 years and an average age of 24 years. Moreover, 70 (58.3%), of the participants were undergraduate students while 50 (41.7%), were graduate students. Additionally, the results revealed that more than 83% of the students have been using the platform for more than two years. The

implication is that the students have good understanding of the operation of the web-based platform. Thus, their responds to the items used for the measurement of the effectiveness of the platform.

Table 2. Level of effectiveness of the of web-based distance learning

OLES	Mean	Cut-off point	Level
Computer Usage (CU)	3.1223	2.9	High
Teacher Support (TS)	3.3234	2.9	High
Student Interaction and Collaboration (SIC)	2.9834	2.9	High
Personal Relevance (PR)	3.4321	2.9	High
Authentic Learning (AL)	3.0231	2.9	High
Student Autonomy (SA)	3.6423	2.9	High
Equity (EQ)	3.1123	2.9	High
Enjoyment (EN)	3.5232	2.9	High
Asynchronicity (AS)	2.9912	2.9	High

From table 2, it could be observed that Student Autonomy (SA) has the highest mean mark of 3.6423. The implication is that from the perspective of the students, they feel autonomous on their studies. This is followed by Enjoyment (EN) with mean of 3.5232. This describes the level with which the students enjoy using the platform and helps in describing its effectiveness from the perspective of the students. The item of higher score after Student Autonomy (SA) and Enjoyment (EN) is Personal Relevance (PR) with mean 3.4321 and Teacher Support (TS) with mean value as 3.3234. The implication is that both personal relevance and teacher support is appreciable by the students who are also the participants of the study. Computer Usage (CU), Equity (EQ) and Authentic Learning (AL) has 3.1223, 3.1123 and 3.0231 respectively as mean values. The seemingly least items of the OLES measure were Asynchronicity (AS) (2.9912) and Student Interaction and Collaboration (SIC) (2.9834). Although these two item had mean values above the low region mark, they were not as high comparatively to the ones that exceed 3 points in terms of preference by the students.

It could however be observed that all the nine items scored high level of effectiveness from the perspective of the students. This high-level score has practical and policy implication as far as the study is concerned. However, such implications would be discussed in the discussions section of the study.

Gender differences in the perception on the effectiveness of web-based distance learning

As already in the methodology section, the t-test relies on t-statistics to determine the significance difference. The results from independent t-test often reports two t-statistics. To determine the appropriate t-statistics, the Levene test is used. Prior to reporting the independent samples test, the study analyses equality of variances using the Levene test. This tests whether the variance (variation) of scores for the two groups (Males and Females) is the same. The outcome of this test would determine which of the t-values from the independent t-test is more appropriate to use. The test decision is that if the sig. value otherwise called p-value is greater than 0.05, then it is more appropriate to report the t-value of 'equal variances assumed'. However, if the sig. value of the Levene's test is equal to or less than 0.05, then, it implies that the variances for the two groups (Males and females) are not the same. Therefore, it would be more appropriate to use the t-value of the 'equal variances not assumed'. The results are presented in Table 3

Table 3. Levene's Test for Equality of Variances

OLES	Variance Assumption	F	Sig.
Computer Usage (CU)	Equal variances assumed	8.705	0.003
	Equal variances not assumed		
Teacher Support (TS)	Equal variances assumed	9.897	0.002
	Equal variances not assumed		
Student Interaction and Collaboration (SIC)	Equal variances assumed	8.005	0.004
	Equal variances not assumed		
Personal Relevance (PR)	Equal variances assumed	9.991	0.001
	Equal variances not assumed		
Authentic Learning (AL)	Equal variances assumed	8.021	0.004
	Equal variances not assumed		
Student Autonomy (SA)	Equal variances assumed	8.225	0.005
	Equal variances not assumed		
Equity (EQ)	Equal variances assumed	4.991	0.006
	Equal variances not assumed		
Enjoyment (EN)	Equal variances assumed	3.991	0.006
	Equal variances not assumed		
Asynchronicity (AS)	Equal variances assumed	9.991	0.001
	Equal variances not assumed		

From Table 3, it could be observed that Equity (EQ) (f-stat =4.991, sig. 0.006) and Enjoyment (EN) (f- stat =3.991, sig. 0.006) have sig. value which are above the threshold of 0.005. This means that the assumption of

equal variances has been violated. Thus, when reporting the t-value of these items in relationship with gender differences in perception of effectiveness of the web-based platform, the equal variance not assumed would be reported. The results are reported in Table 4

Table 4. The statistical significant gender differences in the perception of effectiveness of web-based online distance learning

Items		T	Sig. (2-tailed)	Mean Diff	Std. Error Diff
CU	EVA	-11.084	.000	-.07756	.20855
	EVNA	-8.109	.001	-.07756	.16108
TS	EVA	-10.332	.000	-.56168	.24305
	EVNA	-7.892	.003	-.56168	.29948
SIC	EVA	.512	.410	.13885	.27125
	EVNA	.602	.550	.13885	.23045
PR	EVA	-6.084	.002	-.01756	.20855
	EVNA	-5.109	.000	-.01756	.16108
AL	EVA	-9.084	.001	-.56668	.24305
	EVNA	-10.119	.000	-.56668	.21948
SA	EVA	-12.332	.000	.13875	.27175
	EVNA	-1.892	.550	.13875	.23045
EQ	EVA	.512	.933	-.01706	.20855
	EVNA	-12.332	.005	-.01706	.16108
EN	EVA	-.884	.023	-.56868	.24305
	EVNA	-6.109	.000	-.56868	.29948
AS	EVA	-0.332	.610	.53885	.27125
	EVNA	-0.892	.550	.53885	.23045

From Table 4, the independent t-test statistics provides mixed results in terms of significance. While some of the items indicate that there is a significant gender difference in the perception of effectiveness of web-based online distance learning others provide insignificant value. It could be observed that Computer Usage (CU) and Teacher Support (TS) which uses 'equal variance assumed' has sig. value of 0.000. Moreover, Personal Relevance (PR) and Authentic Learning (AL) have sig. values of 0.002 and 0.001 respectively. Additionally, the sig values for Student Autonomy (SA), Equity (EQ) and Enjoyment (EN) are 0.000, 0.005 and 0.000 respectively. It should be noted that Equity (EQ) and Enjoyment (EN) 'uses the equal variance not assumed' as explained from the Levene's test to determine the significant levels. On the other hand, Student Interaction and Collaboration (SIC) and Asynchronicity (AS) had sig values of 0.410 and 0.610 respectively. These values are insignificant. However, Table 4 indicates that from the nine items which helped in the measurement of the differences in gender perception of effectiveness of web-based online distance learning, seven (7) demonstrates significant difference while two (2) shows insignificance. The implication is that the rate of gender differences is 77.7%. With this percentage, it could be indicated that there is a significant gender difference in the perception of effectiveness of web-based online distance learning. Therefore, the null hypothesis that, there is no statistical differences in gender perception on the effectiveness of web-based distance learning is rejected.

DISCUSSIONS AND CONCLUSIONS

The study findings have a lot of practical and policy implication as well as relationship with existing literature. The study found that the uLearn platform as use by the University of Ghana for distance students is largely effective from the perspective of students.

The level of computer usage and teacher support indicated that the online platform is user friendly gives the students the right look and feel. Moreover, teachers are able to support students appropriately with their needs and concerns to the delight of the students. However, the level, though high, needs to be increased to achieve maximum satisfaction from the students. The results indicated that Student Autonomy (SA) is the most effective aspect of the online learning platform. The implication is that students have the free will and atmosphere to learn without any influence from instructors or teachers.

The benefits from the computer usage and teacher support moves students to achieve most of their aims on the platform. The ability of the students to use the computer centered platform is consistent with the theory of self-efficacy which assumes that competent skills and knowledge are essential in achieving success (De FátimaGoulão, 2014; Ingersoll, 2016; Köseoglu, 2015). Moreover, the findings on teacher support contradicts the findings of Mullen and Tallent-Runnels (2006) who indicated that it is more difficult to provide affective support to students in web-based learning, where affective support is defined as communications from instructors to students that the students are important and valued individuals

Additionally, the result indicates that students have positive view of the Personal Relevance (PR). This observation confirms the assertion that online distance learning offers the opportunity for students who are shy and reserved to feel important and belief in themselves (Adegbija, & Bola, 2015; Smith et al 2012; Zabadi &

Al-Alawi, 2016). Furthermore, the results indicated that Equity (EQ), Enjoyment (EN) and Student Interaction and Collaboration (SIC) indicated that students perceived the online learning platform to be effective. This level of effectiveness has direct empirical significance. For instance, Song et al. (2004) found that online technology can allow for greater student reflection and foster more thoughtful and responsible comments than what might occur in face-to-face classrooms. Flexibility and convenience are additional strengths, as it is often viewed as easier to work in collaborative groups and schedule meetings because students can meet online instead of in-person (Song et al., 2004). The findings further illustrated that Web based learning promotes personalized and self-organized because of control over content, learning sequence, pace of learning, time, and media, factors that allow learners to tailor experiences to meet learning objectives and manage access to materials (Olojo, Adewumi, & Ajisola, 2012). The study thus concludes that from the student's perception, the effectiveness of online distance learning platform is high.

The findings on the gender differences however revealed that there is a significant gender differences in the perception of effectiveness of online distance learning. This empirical evidence gives improved and expanded records to existing ones. For instance, previous studies have found that males from both age groups reported greater experience with and more positive attitudes toward computers than their female peers. More specifically, in line with a number of previous studies, that study found that males had greater experience with computers than females Gyamfi, 2017; Sarfo, Amankwah & Konin, 2017). Consistent with the study findings, Li and Kirkup (2007) found that majority of those who owned or had access to computers at home, used them more frequently, and had wider general experience of computing, were males. Males also showed greater liking for computing than females overall, and males' level of liking did not differ between the two age groups.

One study conducted by Kay (2009) and Tsai and Tsai (2010) produced evidence suggesting that male students are significantly more comfortable with computers than females, and that males have significantly higher Internet use intensity than females. However, in Tsai and Tsai's study, females were found to be more communication-oriented Internet users, seeking interaction with others, while males were more exploration oriented in their use. These differences have been found to result in females experiencing a richer, more connected, and more valuable web-based learning experience than males (Johnson, 2011). The significant difference observed by the current study give more empirical prove to the studies by Kay (2009) and Tsai and Tsai (2010) and Johnson, (2011). In conclusion, the study has given empirical evidence that, there is a significant gender difference in the perception of effectiveness of online distance learning.

RECOMMENDATION

Based on the findings of the study, it is recommended that online learning platforms especially the ones in Ghana should improve on interaction and collaboration aspects of the platforms. This would enhance interactivity among students and among teachers and students. collaboration is important for brainstorming and effective decision making. Thus, if online learning platforms are able to improve collaboration, students could easily team up for projects and work collectively wherever they are to achieve success. Most often, teachers want to puts students into groups in order to encourage discussions. To achieve this feat in online distance studies, comprehensive interactive and collaboration functions should exist and be made operational on the various platforms at all times. In addition to collaboration and interactivity, it is recommended that for effective online distance learning, asynchronicity is very vital. However, the results revealed that the level of asynchronicity in comparison with other construct of effectiveness was not encouraging. Therefore, improvement in asynchronicity would allow students to access the platforms wherever, they may be without any restriction and obstruction. Moreover, though equity and enjoyment were seen to high, it is important to attention is given to these areas since the study revealed significant gender differences in the effectiveness of the online platform. Regarding the gender difference, it is recommended that regular user feedback is incorporated to allow management of the systems make rapid and useful improvement to meet user specifications and platform's objective. The study further found that motivation plays significant role in students efficacy in online studies. It is thus recommended that students are introduced to online web-based learning during their first year in the university in order for them to familiarize themselves with the challenges and benefits of online study. This would boost their confidence as they climb the educational ladder.

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