Generation Z Acceptance and Satisfaction on Learning Management Systems Utilization: A Platform to Enhance Nursing Students' Scholastic Performance

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Abstract. The use of digital technology is empowering and has created a wide array of information and knowledge products, and services in higher education institutions, depending upon the state-of-the-art of information communication technology systems they utilize. Likewise, the development in digital systems has provided technological solutions for these academic institutions and information management organizations to access education and knowledge in virtual environments. The study utilized a Descriptive Correlational Research Design and selected three nursing schools that utilized LMSs as a learning productivity tool for at least three consecutive years. The study used purposive sampling to select Nursing students as the respondents for this study. A modified survey-questionnaire instrument was used, validated and pilot-tested for reliability. This was properly coded as to participating school to maintain confidentiality. Data were treated utilizing inferential statistical measures. Majority of the respondents are between 15-20 years old that belongs to Level IV who are mostly very familiar with computer; their primary Internet source is Google, and they use academic journals as primary Internet source. Likewise, more than half of the participants utilize the LMS once a week that presents an allocation of 1-2 hours per session on LMS, and there is an equal distribution of participants who utilize CANVAS and MOODLE as an LMS platform. The level of acceptance in the course structure and instructor's knowledge and facilitation are highly accepted by nursing students and they are also highly satisfied.

There seems to be a disparity between the instructor's knowledge and their facilitation of LMS to their provision of feedback mechanism to nursing students. It also appears that all features of LMS were not fully utilized, and that poor Internet access and poor time management continues to pose as challenges for LMS utilization.

Key Words: LMS, Nursing Students, Educational Technology, Course Structure

Introduction

The era of industrial revolution, through the use of information and communications technology or ICT (open and distance learning, virtual universities and e-learning), has tremendously improved higher education learning. ICT has become a strong driver in shifting from conventional face-to-face learning to online learning. This development in technology in higher education to meet the world's rapidly changing needs emerges as the center of attention of higher education institutions or HEIs. Indeed, digital learning is real.

The utilization of Learning Management System or LMS as a learning pedagogy, adjunct to the conventional face-to-face discussion, is ubiquitous throughout university education. The globalization on its utilization is widespread, ranging from secondary education to higher education institutions. The integration to higher education pedagogy occurred against a backdrop that includes the development of a unified e-learning strategy (Department for Education and Skills, 2005, in Moule, 2016) prompting universities to utilize it as complement to conventional teaching or teacher-led education. The learning process takes a new dimension as teachers in HEIs have taken advantage of information technology innovations to deliver lessons and fulfil other important roles as teachers to their students.

Meanwhile, the paradigm shifts in the way education is viewed and delivered through a combination of lecture-style and web-based learning approaches is attributed to a knowledge-based economy (Asampana, Akanferi & Ami-Narh, 2017). Obisat (et al., 2013 in Sampana, 2017) emphasized that an online learning management system provides for two major uses. The first is to use it for distance web-based learning and, to supplement in-class lectures where lecture notes, assignments, course outline, slides, and videos are posted online.

Therefore, universities invest heavily in the implementation of LMSs. It creates a significant impact on teaching and learning, including information accessibility, adaptivity, adaptability of learning content, efficient interaction, synchronous and/or asynchronous teaching and learning modes, and reduced learning costs (Al-Azawei, 2017). Locally, more universities use LMSs as a learning tool to keep track with the generation X and Y learners. Teachers are required to undergo extensive training and workshops to keep up with the demands of educational technology. Meanwhile, the use of computers and mobile phones as access to academic learning becomes essential elements to HEI's, especially in schools of nursing. Online learning has not just become a trend; it has become a practice. Truly, academic learning in the Fourth Industrial Revolution (FIR) has come and LMS has become a part of it.

Conversely, despite the advancement in digital technology, the use of LMSs continues to pose a big challenge to HEIs. Various international research studies have been done to identify the gaps and challenges of LMSs. Thus, universities and colleges take on the challenge to better equip with the current trends in global academic society. Along this process though, problems arise, including technological fear and IT infrastructure issues.

Despite the presumed effectiveness of using LMSs, HEIs still encounter many challenges on the utilization, practices, capabilities, and improvement in learning outcomes. Millennial students may be taking them lightly, but for some others, with difficulty. This is attributed to a fact that today's learners come from diverse cultures, backgrounds and status, although most of them are classified as digital natives, categorized as generation Y and generation Z. Given the widespread adoption in university education, some research studies still suggest that the use of LMS has not reached its fullest potential. Moreover, the level of acceptance and satisfaction (as to its utilization) it has brought to end-users have not been fully met given the several variables it considers upon utilization of LMSs.

Course management systems, virtual learning environments, and knowledge management systems are often used as synonyms of LMS (Graf, 2007 in Findik, 2018). Higher education and learning institutions across the globe have developed digital technology platforms to realize and achieve the goals of the millennium culture and social values. Applications of digital technologies and social computing are fundamental electronic planning solutions not only in institutions of higher learning but also information and knowledge-based organizations.

Similarly, an article by Perez (2016) further stated that ICT-enabled education system transforms students into dynamic life-long learners and values-centered, productive and responsible citizens. He furthered that ICT revitalize schools to make them into dynamic, collaborative, and innovative learning institutions where students can become more motivated, inquisitive, and creative learners.

Schools of nursing have been utilizing the Learning Management Systems as adjunct method to face-to-face teaching delivery. However, only a small number of these nursing schools had been fully implementing it. There were gaps, and issues encountered by students and faculty in the utilization of LMS. Furthermore, few or limited research studies were published locally with regard to utilization of LMSs. There remained deficiencies in the full adoption, utilization, and implementation in local setting.

The study will provide an avenue to the three selected schools to examine, assess, and evaluate the implementation of the program as a teaching-learning pedagogy and to be able to provide quality and effective programs for efficient and effective delivery of academic service.

The primary objective of this study is to investigate the nursing students' acceptance and satisfaction on the utilization of learning management systems as a learning pedagogy.

Conceptual Framework

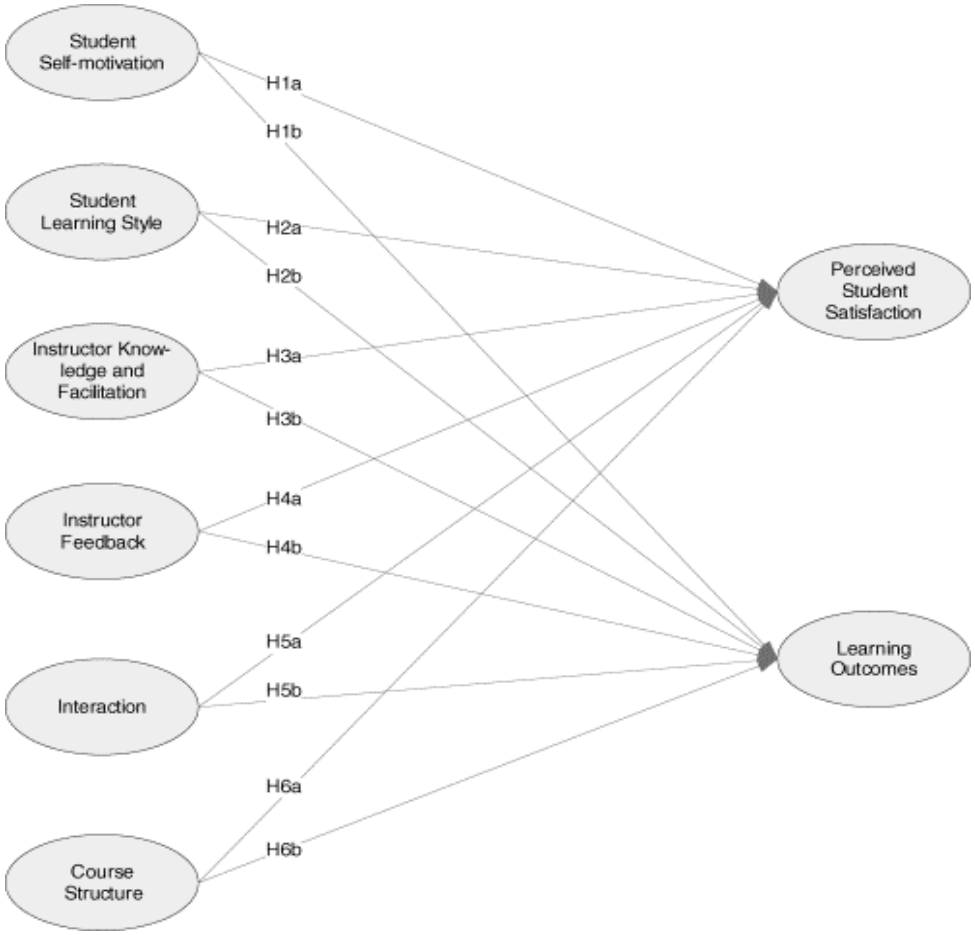

Figure 1. The possible relationship of learning variables to students' acceptance and level of satisfaction in LMS utilization

The paradigm further illustrated the relationship of these learning variables to the level of acceptance and level of satisfaction among participants. Consequently, though not directly related to learning variables and levels of acceptance and satisfaction, the paradigm also illustrated the connection between gaps and challenges experienced by students to be able to create an effective LMS utilization model. This model answered the gaps, challenges, and levels of acceptance and satisfaction of students in relation to learning variables.

Aim of the study

The aim of the study was to identify nursing students' acceptance and satisfaction on the utilization of learning management systems as a learning productivity tool for generation Z.

Method

Study Design

Descriptive, Cross sectional study was used to identify nursing students' acceptance and satisfaction on the utilization of learning management systems as a learning productivity tool for generation Z.

Ethical Procedures

The study complied with the ethical standards set by the university Ethics Review Board. The research involved in subjects must be reasonable, academically and socially valuable, reflecting the relevance of social and academic issues, so that the research results can better understand the relevant issues. Considering that the students are the end-users of learning management systems, this study is of greater value to their individuality, as a nursing student and as a person. The researcher ensured that the respondents were not threatened and coerced, improperly affected, and were competent in receiving and understanding relevant information, and were capable of making research decisions. There was no known vulnerability in as far as the respondents of this study were concerned. Safety in the upkeep and confidentiality of information and results of the study were maintained to the highest level. The study observed the principles of transparency and legality when collecting and storing information. The author complied by the privacy rights of participants. Moreover, all data were properly coded individually instead of patient name to comply with the provisions of Data Privacy Act. Observing privacy, the researcher ensured that the respondents' information would be used anywhere outside the study and anywhere. In aid of provision of a pedagogical model based on the results of the study, the respondents, through its participating nursing schools would be provided results of the study for future information technology and development programs.

Participants and Sampling Scheme

The participants of this study included the undergraduate nursing students in three selected nursing schools who were enrolled between second semester and summer from 2018 to 2019 and were taking up nursing management courses. There are 222 total respondents who participated in this study. The participating schools were those who have been consistently utilizing learning management systems for at least three consecutive years.

The researcher utilized non-probability sampling design, specifically purposive sampling technique. This sampling method was used to ensure that participants who were selected meet the purpose of this study. The respondents of the study were college students taking up Nursing that are officially enrolled and agreed to participate in the study who were present during the time of data gathering.

Research Instrument

This study utilized a survey questionnaire adapted from the study of Eom (2015) and were modified to a higher extent to tailor-fit the learning variables as practiced in undergraduate nursing schools. It consisted of a four-part component; namely: (1) demographic profile; (2) students' level of acceptance on the utilization of LMS; (3) students' level of satisfaction on the utilization of LMS; and 4) gaps and challenges encountered by students in the use of LMS as a productivity tool. An original plan was to provide both face-to-face survey questionnaire and online survey. It should be noted that the researcher had difficulty communicating with the students because of their absence (and lack thereof) of Google accounts and difficulty in meeting up with their academic schedules. Hence, this study contented to using a survey questionnaire instead.

Validity and Reliability Testing

The researcher sought guidance from experts in research. These people were accommodating enough to put inputs and valuable comments in checking, critiquing, and revising the instrument. Subsequently, when the instrument was modified based on recommendations, it underwent a reliability testing using ten nursing students. The dry-run revealed a Cronbach's Alpha results of which the Level of Acceptance yielded 0.971, interpreted as "excellent". As for the Level of Satisfaction, Cronbach's alpha yielded 0.981 which was also interpreted as "excellent".

Statistical Treatment

Mean and Frequency Distribution were utilized in getting the number of participants as respondents and according to their demographic profiles.

Percentage was utilized to gauge respondents' percentage distribution according to socio-demographic profiles.

Rate and Ranking these tools were utilized to determine the most common issues, concerns, and challenges that the student face alongside LMS utilization.

Results

There are 141 participants, comprising 64% of the total population who are 15 to 20 years old. Second Year and Fourth Year nursing students shared the same number of respondents with 88 participants or 40% of the population; Moreover, 55% of the total population stated that they are very familiar with the use of computer;

All participants searched through Google as the main search engine when they researched for assignments. This is followed by academic journals with 48% of the total population. Respondents also searched through social media, specifically Facebook.

More than half of the population stated that they utilized LMS once a week and approximately 35% utilize LMS daily.

The average 44.10% of the respondents spend at least 1-2 hours per session while 41.90% spend 2-3 hours/ sessions; In terms of NCM Courses, 78 participants stated NCM 107: Leadership and Management is the course that utilizes LMS platform as a Learning productivity tool; There are only two LMS platforms utilized by the three selected nursing schools. Findings revealed that there is an almost equal distribution of participants who utilized CANVAS and MOODLE as LMS platforms. 113 respondents, comprising 51% of total population, utilized CANVAS while 49% of participants utilized MOODLE as LMS Platform.

Participants' Acceptance on the Utilization of the LMSs

The level of acceptance of participants on LMS utilization also varied in terms of learning variables.

Table 1. Extent of the participants' acceptance on the utilization of learning management systems with regard to course structure

Course Structure	WM	SD	VI
1. The overall usability of E-Learning was maximized	3.39	0.619	HA
2. The course objectives and procedures as outlines in the syllabus were uploaded accurately and in a timely manner	3.4	0.709	HA
3. The course syllabus was organized into logical and understandable components	3.49	0.685	HA
4. Course assignments were uploaded in a timely manner	3.4	0.697	HA
5. Online lecture notes were uploaded in a timely manner	3.21	0.746	A

6. Course readings were provided online	3.33	0.758	HA
7. Links to online resources were utilized and maximized	3.28	0.769	HA
8. Comprehensive examinations were given online	3.36	0.822	HA
9. Unit examinations and quizzes were given online	3.28	0.775	HA
10. Quizzes were easily shown	3.41	0.754	HA
11. Lecture audio/video application of LMS were utilized	3.12	0.892	A
12. Powerpoint presentation of lectures were uploaded online	3.38	0.731	HA
13. Assignments were uploaded online	3.32	0.814	HA
Composite Mean	**3.34**	**0.75**	**HA**

Note: 1.00-1.75= Highly Not Accepted (HNA), 1.76-2.50=Not Accepted (NA), 2.51-3.25= Accepted (A), 3.26-4.00= Highly Accepted (HA)

The results show that there is a considerably high acceptance by participants on the utilization of LMS. While LMSs offer various supporting features for teaching learning processes and though universities make considerable investment on LMSs, these are not used by faculty members to their fullest capabilities (Jaschik & Lederman, 2014 in Fatherma, et al., 2015; Dahlstrom, et al., 2014; Allen & Seaman, 2010). This study likewise supported the studies by Hustad and Arntzen (2013), which reported that faculty members mostly use LMSs as supplements to their lectures. Synchronous functionalities of LMSs and (i.e. Chat, Online discussions) are seldom used with no direct contact with the participants. In a survey on faculty attitudes on technology conducted by Jaschik and Lederman (2014), majority of the faculty reported using LMS but using limited features only like posting course syllabus, recording grades, and communicate with students. Only 20% of faculty reported using the LMS to record lecture content while approximately 99% of higher education institutions have an LMS in place, approximately one-half of faculty report using such systems on a regular basis and the majority of the faculty do not take advantage of advanced LMS capabilities that have potential to improve the student outcomes (Dahlstrom, et. al., 2014). All these findings indicate that to ensure increased use of LMSs by faculty members, more research is required to gain better understanding of the factors that affect faculty members LMSs usage.

Learning Management Systems (LMSs) provide tools and functions like course management tools, online group chats and discussions, documents (lecture materials, homework and assignments etc.), power points, video clips uploading, grading and course evaluations to support teaching and learning. Since, LMSs have evolved in a complex way in terms of educational contents, technological resources and interaction possibilities; there is an increasing concern in regard to the quality of the interface and the ways in which tasks are completed in these systems.

Table 2. Extent of the participants' acceptance on the utilization of learning management systems with regard to instructor's knowledge and facilitation

Instructor's Knowledge and Facilitation	**WM**	**SD**	**VI**
1. The instructor was very knowledgeable about LMS utilization	3.47	0.636	HA
2. The instructor was actively involved in facilitating the course through LMS	3.41	0.718	HA
3. The instructor stimulated students to intellectual effort beyond that required by face-to-face discussion	3.39	0.735	HA
Composite Mean	**3.43**	**0.7**	**HA**

Note: 1.00-1.75= Highly Not Accepted (HNA), 1.76-2.50=Not Accepted (NA), 2.51-3.25= Accepted (A), 3.26-4.00= Highly Accepted (HA)

Teachers are internal users and interact directly with the e-learning platforms (Aparicio et al., 2016). Traditional face-to-face classes using primarily the lecture method, use the objectivist model of learning whose goal is transfer of knowledge from instructor to students. Even in distance learning, it is still a critical role of the instructor to transfer his/her knowledge to students because the knowledge of the instructor is transmitted to students at different locations (Leidner & Jarvenpaa, 1995 in Eom, 2015). Constructivism assumes that individuals learn better when they control the pace of learning. Therefore, the instructor supports learner-centered active learning. E-learning environments demand a transition of the roles of students and the instructor. The instructor's role is to become a facilitator who stimulates, guides, and challenges students via empowering students with freedom and responsibility, rather than a lecturer who focuses on the delivery of instruction (Huynh, 2005).

Training on LMS utilization also plays a big role in the knowledge and easy facilitation of faculty. These findings indicated that Faculty members with higher self-efficacy find LMS useful and easy to use comparative to faculty members with lower self-efficacy. In other words, faculty members who are confident about their LMS skills (i.e. operating basic features, LMS functions, online learning contents) perceive LMS as a useful technology to use and experience lower complexity using it. Consequently, confident faculty members use LMS more than the less confident ones. The study also revealed a weak positive effect of facilitating conditions (FC) on attitudes (ATT) toward using technology and perceived ease of use (PEOU). It could be possible that faculty members develop positive attitudes toward LMS if adequate facilitating conditions (i.e., adequate guidance on LMS use, personal/ group assistance, specialized instructions concerning LMS use) are available. Another possible explanation of finding a weak relationship can be, if LMS quality is really high and faculty members have high self-efficacy than they do not care as much about or have a need for the availability of facilitating conditions (facilities, training etc.) for using LMS.

Table 3. Extent of the participants' acceptance on the utilization of learning management system with regard to instructor feedback

Instructor Feedback	**WM**	**SD**	**VI**
1. The instructor was responsive to student concerns in LMS utilization	3.34	0.731	HA
2. The instructor provided timely feedback on assignments, exams or projects he/she uploaded on LMS	3.31	0.753	HA
3. I felt as if the instructor cared about my individual learning in LMS utilization	3.27	0.802	HA
4. The instructor returned examination and assignments with his answer marked wrong using Speedgrader features	3.12	0.897	A
5. The instructor gave comments on assignments/quizzes and explained why the answers were correct or incorrect using Speedgrader features	3.04	0.912	A
6. The instructor gave feedback suggesting how the correct responses can be constructed using Speedgrader features	3.05	0.906	A
7. The instructor replied to student emails, graded work with comments, online grade books.	3.04	0.929	A
Composite Mean	**3.17**	**0.85**	**A**

Note: 1.00-1.75= Highly Not Accepted (HNA), 1.76-2.50=Not Accepted (NA), 2.51-3.25= Accepted (A), 3.26-4.00= Highly Accepted (HA)

Data from this table reveal that feedback mechanism to create evaluative performance is not sufficiently enforced by instructors. This could be related to lack of time management among instructors in ensuring that the students get the right amount of feedback for better performance, hence acceptance. Numerous studies revealed that there was strong relationship

between learners' acceptance on LMSs as regards feedback mechanism. A study by Perišić et al. (2018) affirmed this result stating that students' performance was improved by using frameworks with feedback mechanism while the student's feedback from regarding its usefulness was also positive. Accordingly, some studies suggest that the development of a harmonious and effective online course depends on feedback interventions and motivational strategies (Fisher & Baird, 2005; Simonson, 2005; Dias & Diniz, 2014). He furthered that pedagogical design, assessment activities, as well as feedback, seem to represent key features to validate the online formative assessment in higher education. It is truly essential that regular monitoring of programs on learning management systems be continuously done to ensure that the students receive high satisfaction in their usage. A quality feedback mechanism is an effective means to attain this objective. A study by Huey and Baharom (2018) also showed that online courses designed using a problem-centered and case-based approach to learning and utilized technologies including (LMS) such as Moodle as well as functions from the LMS can create good predictors for students' satisfaction. Hence, areas such as learner-content interaction, self-regulated learning design, and Internet self-efficacy were good predictors of students' satisfaction.

Table 4. Extent of the participants' acceptance on the utilization of learning management system with regard to LMS features

LMS Features	**WM**	**SD**	**VI**
1. The video conference features of LMS was utilized	2.68	1.068	A
2. The Speedgrader features of LMS showing instructor's feedback was utilized	2.85	0.948	A
3. The Mastery Gradebook feature of LMS showing student's online grades was utilized	3.04	0.902	A
4. The Dashboard feature of LMS was easily accessed	3.26	0.832	A
Composite Mean	**2.96**	**0.94**	**A**

Note: 1.00-1.75= Highly Not Accepted (HNA), 1.76-2.50=Not Accepted (NA), 2.51-3.25= Accepted (A), 3.26-4.00= Highly Accepted (HA)

The data reveal that participants believed LMS features are not fully utilized. It is consistent with some previous LMSs studies which found that, not all the functions of LMSs were equally used by the users. Some functions are used more frequently than other functions (Jaschik & Lederman, 2014; Weaver, Spratt & Nair 2008; Panda & Mishra, 2007; Akpinar, Bal & Simsek, 2004; Woods, Baker & Hopper, 2004 in Fathema, 2015). Fathema and Sutton (2013) found document uploading; and grade posting and assignments are the most frequently used features of Blackboard learning management systems by faculty members.

Furthermore, some research studies have shown that communication tools that are embedded in LMS such as discussion forums, chat, and e-mail are underutilized (Vovides et al., 2007; Venter et al., 2012; Bhalalusesa et al., 2013). LMS have tools with capability to present the learning materials in various forms of multimedia such as audio, video and animations but research studies have shown that faculty members tend to underutilize such tools, and only use LMS as a course information transmission tool (Vovides et al., 2007; Dube & Scott 2014). Faculty members upload course information in text format for students to download just like any other electronic repository and other faculty confirmed that they used the system for uploading content and files only (South Africa Institute of Distance Education 2013).

Table 5. Summary of participants' level of acceptance in the utilization of learning management systems

Learning Variables	CM	VI
1. Course Structure	3.34	HA
2. Instructor's Knowledge and Facilitation	3.43	HA
3. Instructor's Feedback	3.17	A
4. LMS Features	2.96	A
Overall Composite Mean	**3.23**	**A**

Note: 1.00-1.75= Highly Not Accepted (HNA), 1.76-2.50=Not Accepted (NA), 2.51-3.25= Accepted (A), 3.26-4.00= Highly Accepted (HA)

The study reveals that majority of participants appreciated the efforts of faculty to ensure that they were highly competent and knowledgeable in facilitating LMS as adjunct to face-to-face learning. Universities invest time, machinery through technology, and other resources to uplift and sustain the quality of service delivery through the utilization of information and computer technology. Thus, faculty members who utilize LMSs in their teaching pedagogy are able to deliver the service effectively.

However, there is a downside to this as evidenced by an "Accepted" rating on Instructor's Feedback which is able to yield 3.17 Composite Mean. This result may be attributed to some factors relating to faculty's academic and non-academic responsibilities which may hinder his ability to provide prompt feedback on students' outputs and peformance. The result on level of acceptance by participants on instructor's feedback was supported by review and qualitative study conducted by Hadullo (2018) on factors affecting asynchronous e-learning quality in developing countries. His study revealed that handling too many students was hindering quality e-learning provision by instructors.

Participant's Level of Satisfaction on the Utilization of LMS

Table 6. Extent of the participants' level of satisfaction on the utilization of learning management system with regard to course structure

Course Structure	WM	SD	VI
1. The overall usability of LMS was satisfactory	3.42	0.66	HS
2. The course objectives and procedures as outlined in the syllabus were clearly communicated	3.45	0.689	HS
3. The course syllabus was organized into logical and understandable components	3.46	0.677	HS
4. Course assignments were uploaded in a timely manner	3.33	0.741	HS
5. Online lecture notes were uploaded in a timely manner	3.23	0.739	S
6. Course readings were provided in a timely manner	3.31	0.766	HS
7. Links to online resources were easily accessed	3.32	0.739	HS
8. Comprehensive examinations given were easily accessed	3.35	0.757	HS
9. Unit examinations given through LMS were easily accessed	3.34	0.773	HS
10. Quiz results were easily shown and accessed	3.43	0.738	HS
11. Lecture audio/video application of LMS were easily accessed	3.15	0.869	S
12. Powerpoint presentation of lectures were easily accessed	3.41	0.73	HS
13. Uploading of assignments were manageable	3.36	0.765	HS
Composite Mean	**3.35**	**0.74**	**HS**

Note: 1.00-1.75= Highly Dissatisfied (HD), 1.76-2.50=Dissatisfied (D), 2.51-3.25= Satisfied (S), 3.26-4.00= Highly Satisfied (HS)

Majority of students are specific in saying that video and audio application of their current LMS platforms, including video-conferencing were not fully utilized, hence it shows a quite remarkable difference. E-learning has a significant impact on teaching and learning, including information accessibility, adaptivity, the adaptability of learning content, efficient interaction, synchronous and/or asynchronous teaching and learning modes, and reduced learning costs (Al-Azawei, 2017). On the other hand, LMS usage is strongly linked with student satisfaction (Naveh et al. 2012). Increased LMS usage increases levels of students' satisfaction with courses. Similarly, satisfied learners tend to complain less (Tarigan 2011).

Table 7. Extent of the participants' level satisfaction on the utilization of learning management systems with regard to instructor's knowledge and facilitation

Instructor's Knowledge and Facilitation	WM	SD	VI
1. The instructor was very knowledgeable about the LMS utilization	3.49	0.704	HS
2. The instructor was actively involved in facilitating the course through LMS	3.39	0.746	HS
3. The instructor stimulated students to intellectual effort beyond that required by face-to-face discussion	3.35	0.792	HS
Composite Mean	**3.41**	**0.75**	**HS**

Note: 1.00-1.75= Highly Dissatisfied (HD), 1.76-2.50=Dissatisfied (D), 2.51-3.25= Satisfied (S), 3.26-4.00= Highly Satisfied (HS)

Majority of participants believe that instructors who use course management into LMS are trained to use LMS, as evidenced by a weighted mean of 3.49 at a standard deviation of 0.704, also interpreted as "Highly satisfied".

The data also support a study by Al-azawei (2019) which stated that the influence of quality and experience antecedents on technology use among teachers affect learner satisfaction. Regular training and usability indeed create a high satisfaction and greater results among its learners. The study provides full support for the association between technology use and learner satisfaction.

Table 8. Extent of the participants' level satisfaction on the utilization of learning management systems with regard to instructor feedback

Instructor Feedback	WM	SD	VI
1. The instructor was responsive to student concerns on LMS utilization	3.35	0.745	HS
2. The instructor provided timely feedback on assignments, exams or projects he/she uploaded on LMS.	3.31	0.795	HS
3. I felt as if the instructor cared about my individual learning in LMS utilization.	3.34	0.813	HS
4. The instructor returns examination/assignments with his answer marked wrong using Speedgrader features	3.2	0.866	S
5. The instructor gives comments on assignments/quizzes and explains why the answers are correct or incorrect using Speedgrader features	3.21	0.885	S
6. The instructor gives feedback suggesting how the correct responses can be constructed using Speedgrader features	3.14	0.902	S
7. The instructor replies to student emails, graded work with comments, online grade books.	3.13	0.889	S
Composite Mean	**3.24**	**0.84**	**S**

Note: 1.00-1.75= Highly Dissatisfied (HD), 1.76-2.50=Dissatisfied (D), 2.51-3.25= Satisfied (S), 3.26-4.00= Highly Satisfied (HS)

The table reveals that there was quite a contradiction with regard to learning variable on Instructor knowledge and Facilitation to that of Instructor feedback. The feedback mechanism of instructors especially on areas that require them to focus on student's outputs got a satisfaction rate. This may mean that they only upload assignments, but majority do not really return back the graded assignments. Universities have made a considerable investment in the use of Learning Management Systems to facilitate their teaching learning processes, however, the faculty members to their fullest capabilities do not use these systems. The result of this study supported the study by Fathema et al. (2015) which investigated factors that affect faculty members' LMSs usage behavior, focusing on user related variables and their pivotal role in determining faculty attitudes toward LMSs. His study tried to investigate how faculty members' beliefs and attitudes influence their intention and actual use of LMSs under conditions of non-mandatory use of LMSs in higher education institutions. Data were obtained from 560 faculty members (from two universities) and analyzed using Structural Equation Modeling. The results reveal that the three proposed external variables: system quality; perceived self-efficacy and facilitations conditions were significant predictors of faculty attitude towards LMSs. Similar to prior research findings, the study results further confirmed the validity of the extended TAM in determining users' technology acceptance behavior. The study also addressed the implications of the findings for researchers and practitioners (Fathema et al., 2015).

Table 9. Extent of the participants' level satisfaction on the utilization of learning management systems with regard to LMS features

LMS Features	**WM**	**SD**	**VI**
1. I am satisfied with the video conference	2.78	1.025	S
2. I am satisfied with the Speedgrader features of LMS showing students' online grades	3	0.927	S
3. I am satisfied with the Mastery Gradebook feature of LMS showing student's online grades	3.09	0.901	S
4. I am satisfied with the clarity of the Dashboard features of LMS	3.27	0.846	HS
Composite Mean	**3.03**	**0.92**	**S**

Note: 1.00-1.75= Highly Dissatisfied (HD), 1.76-2.50=Dissatisfied (D), 2.51-3.25= Satisfied (S), 3.26-4.00= Highly Satisfied (HS)

Results reveal that participants believe all features of LMS like CANVAS and MOODLE are not really utilized to it fullest usability. The degree of satisfaction could have been high if all features are utilized to higher extent. Note that the use of video-conferencing yielded the lowest weighted mean, which could be interpreted that this LMS feature is not fully utilized, hence, the participants are only satisfied. The result of this study contradicts the other results on student satisfaction of Canvas. A study by Phaovisaid (2017) on student satisfaction of CANVAS found that students were satisfied with the system and that certain features within the LMS were more highly rated in terms of frequency of use and benefits to learning. Abdel (2018) also examined the relationship between students' satisfaction in the newly developed Learning Management System called "Acadox", and perceptions of its usefulness, and ease of use. The findings of this study reveal that students' perceptions of ease of use, and perceptions of usefulness are significant predictors of satisfaction in Acadox. The findings of this study are consistent with the Technology Acceptance Model (TAM), which indicated that one's perceptions of ease of use, and perceptions of usefulness of the new technology are the key factors that determine the acceptance of a new technology.

Table 10. Extent of the participants' level satisfaction on the utilization of learning management systems with regard to self-motivation

Self-Motivation	WM	SD	VI
1. I am goal-directed. If I set my sights on a result, I usually can achieve it.	3.49	0.684	HS
2. I put forth the same effort in checking uploads and assignments	3.46	0.69	HS
3. I am motivated to improve my knowledge through online reading	3.46	0.74	HS
4. I am motivated to review journal/reading links as provided by the instructor	3.44	0.72	HS
5. I am motivated to learn much from utilization of LMS as a learning productivity tool	3.44	0.72	HS
Composite Mean	**3.48**	**0.734**	**HS**

Note: 1.00-1.75= Highly Dissatisfied (HD), 1.76-2.50=Dissatisfied (D), 2.51-3.25= Satisfied (S), 3.26-4.00= Highly Satisfied (HS)

One of the remarkable contrasts between successful students is their apparent ability to motivate themselves, even when they do not have the burning desire to complete a certain task. On the other hand, less successful students tend to have difficulty in calling up self-motivation skills, like goal setting, verbal reinforcement, self- rewards, and punishment control techniques (Dembo & Eaton, 2000; Eom et. al., 2017). The extant literature suggests that students with strong motivation will be more successful and tend to learn the most in Web-based courses than those with less motivation (Frankola, 2001; LaRose & Whitten, 2000; Eom, et. al., 2017). Students' motivation is a major factor that affects the attrition and completion rates in the Web-based course and a lack of motivation is also linked to high dropout rates (Frankola, 2001; Galusha, 1997; Eom, et. al., 2017).

It can be inferred that participants develop a higher sense of satisfaction if their behavior affects their performance. Findik (2018) believes that benefits from e-learning systems depend on users' adoption and continued use, users' adoption of this technology needs to be examined with the help of behavioral intention E-learning provides many benefits including an increased accessibility to information, better content delivery, personalized instruction, content standardization, accountability, on-demand availability, self-pacing, interactivity, confidence, and increased convenience (Bhuasiri et al., 2012).

Social support is commonly categorized into four types of supportive behavior: Informational Support, Instrumental Support, Affirmation support, and Emotional Support (Munich, 2014). Weng (2015) in a study on social support as a neglected e-learning motivator affecting online students observed that user satisfaction in e-learning was supported by managerial support, peer support as well as family support. The students also confirmed that they received social support from different sources, such as, peers, forum, chat and e-learning group work (Weng, 2015). Instrumental support came in the form of time off of work during examinations and encouraging students to study during quiet times and allowing access to computers. Colleagues at work provided resources for assignment and editorial assistance or affirmation support. Employers and colleagues both provided affirmation 156 IJEDICT support by telling the students they were doing a great job bringing in new knowledge to the work place. Another study by Muuro (2014), and Queiros and de Villiers (2016) using a descriptive survey with cross-sectional approach confirmed that strong social presence through timely feedback, interaction with facilitators, peer-to-peer contact, discussion forums and collaborative activities was key in learner support. Baxter (2012) revealed that student retention and progression in e-learning can be improved by interaction through the use of social networking tools such as Facebook to help social and academic integration and forming early

strong interpersonal relationships between staff, students and their peers. How lecturers perceive students and how students interact with each other may increases self-confidence in e-learning. Baxter added that positive past learning experiences i.e. success in passing modules created confidence in e-learning students. Kuo et al. (2013) confirmed these findings by stating that learner-to-learner interaction influenced student satisfaction in e learning because it acted as a two-way reciprocal communication between or among learners who exchange information, knowledge, thoughts, or ideas regarding course content. Kuo added that besides interactions, internet self-efficacy or one's capability to organize and execute Internet-related actions required to accomplish assigned tasks positively influences learner satisfaction and hence achievement and persistence in e-learning. Further, studies by Hartnett (2016), Bonk, and Khoo (2014) on online student motivation observed that learner motivation (intrinsic & extrinsic) is crucial to the learners' success in an online coursework environment because it can influence their decisions to stay in or drop out of a course, their degree of engagement in the course, the quality of the work, and their level of achievement in the online course (Hartnett, 2016; Bonk & Khoo, 2014). This further clarify the effectiveness of creating a good interaction between the learner and the teacher, between the learner and another learner because they create a healthier learning process. This may also indicate that an effective teaching using LMS may create a good motivation to learners to study and learn effectively.

Table 11. Extent of the participant's level satisfaction on the utilization of learning management systems with regard to interaction

Interaction	**WM**	**SD**	**VI**
1. I feel that I interacted with the instructor in online activities	3.18	0.858	S
2. I feel that I interacted with other students in online activities	3.21	0.863	S
Composite Mean	**3.19**	**0.86**	**S**

Note: 1.00-1.75= Highly Dissatisfied (HD), 1.76-2.50=Dissatisfied (D), 2.51-3.25= Satisfied (S), 3.26-4.00= Highly Satisfied (HS)

Results on this also aspect reveal a strong comparison between interactions of participants to that of utilization of LMS features. Note that video conferencing has a satisfactory interpretation that correlated to why the respondents felt that they are only satisfied by the interaction with and among other users. Conmy (2016) did a study among 116 distance-learners using quantitative and qualitative analyses with data transformation merged analysis and data triangulation to investigate where student-student interactions occurred in online-only and low-residency degree programs, and the extent to which those interactions related to students' perceived senses of community and learning. Findings indicate that most programs required the use of only two interaction tools, discussion boards and emails, and that students commonly selected to use only the two required tools plus student-initiated email, discussion boards, and social networking. These selected tools were frequently used in their personal and professional lives.

Table 12. Summary of participants' level of satisfaction in the utilization of learning management systems

Learning Variables	**CM**	**VI**
1. Course Structure	3.35	HS
2. Instructor's Knowledge and Facilitation	3.41	HS
3. Instructor's Feedback	3.24	S
4. LMS Features	3.03	S
5. Self-Motivation	3.48	HS
6. Interaction	3.19	S

Overall Composite Mean	**3.28**	**HS**

Note: 1.00-1.75= Highly Dissatisfied (HD), 1.76-2.50=Dissatisfied (D), 2.51-3.25= Satisfied (S), 3.26-4.00= Highly Satisfied (HS)

The data reveal that students, majority of which belonged to Generation Z, are clearly motivated to utilize information technology, as evidenced by their high satisfaction rating on LMS utilization. The usage of any interactive activities and services intended to support and facilitate the learning process encourage students to be motivated to learn. They include the use of multimedia and discussion forums. The use of multimedia coupled with solid content and appropriate instructional methods can greatly influence the learning process (Tchoubar, 2014 in Hadullo (2018). Multimedia Improves learning by keeping the learners engaged and motivated to learn. Using audio narrations can reduce overload and help learners remain focused on the visual (animations) in the screen while the use of videos and animations can explain complex concepts more effectively than standalone text (Kazaine, 2015 in Hadullo, 2018). The effect of using discussion forums is beneficial and useful to e-learning students in terms of improving their learning skills and quality. Muuro (2014, in Hadullo, 2018) stated that forum activity in e-learning enables participants to asynchronously share and exchange their ideas and experiences independently with or without their instructor's participation. Similar interaction can be achieved through the LMS chat, although in a synchronous mode. A chat develops student's independent learning as they are engaged in acquiring information from others without the help or intrusion of instructors. (Muuro, 2014; Soliman, 2014; Hadullo, 2018).

Conclusion

Determinants like age, year level, computer familiarity, Internet source, and specific platform utilized are not significant factors in the level of acceptance and level of satisfaction among nursing students in their LMS utilization.

There seems to be a disparity between the instructor's knowledge and facilitation and their feedback mechanism. This may mean that instructors give time in uploading files like learning materials, course syllabi and assignments but they do not give much time on making feedback by returning the graded assignments and graded quizzes of students online.

Recommendation

University policy makers and IT departments should concentrate more efforts on the periodic monitoring of program and quality improvement of LMS to make it more usable to students as well as to the faculty. The interface, features, functions, contents, navigation speed, interaction capability etc., of the LMS should be periodically monitored and improved according to the faculty members and students' need. It is further recommended that formative evaluation should be conducted to collect feedback from the LMS users about the quality issues, problems and recommendation for improvement and will plan for LMS improvement actions accordingly. Perhaps, a standard policy on feedback mechanism should be enforced to require instructors to provide immediate, effective and collectively friendly feedback on their students' outputs and assignments. This will generate a more conducive interaction between teacher-and-student, and student-to-student. Moreover, universities need to pay attention to ensure availability of reliable network access and technological support to ensure smooth running of LMS. They should provide extensive online and face-to-face support and guidance for faculty members and students to ensure that students have high acceptance and satisfaction toward LMS utilization.

Conflicts of Interest Disclosure

The author declares there are no significant competing financial, professional, or personal interests that might have influenced the performance or presentation of the work de- scribed in this manuscript.

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