

## *Original Paper*

# Evaluation of Moodle OER for Junior Course Business Subjects Students at Botswana Open University's Centre for Open Schooling

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### **Abstract**

*The paper shares some of the challenges and lessons learnt during the COVID-19 pandemic in Botswana and how Botswana Open University stayed resiliently. Our focus is on various aspects of ODeL (students and tutors).*

*The paper discusses MOODLE portal which was piloted at Botswana Open University's Centre for Open Schooling in 2021 for Junior Secondary School students of business subjects comprising Commerce, Accounting and Office Procedures. This paper drew inspiration from the fact that MOODLE OERs portal is a niche in Open Schools and the that Commonwealth of Learning (COL), among other objectives offers guidance on use of OER in Open Schools. A total of 50 students were selected randomly from BOU's five regions and one class of 30 students from a conventional Junior School participated in the pilot which ran for six months from April 2021 September 2021. The portal assisted students to keep learning ongoing, as University needed response to Covid19. There was need and urgency at BOU to address the desperate situation Open Schooling found itself in without tangible eLearning infrastructure. The paper is based on the experiences of the piloting students and tutors, their observations, as well as the literature review and draws recommendations from aforesaid.*

### **Keywords**

*Open Education, Moodle, Covid19, eLearning, Secondary Education, Botswana, and ICTs*

## 1. Introduction

The author attended PCF9 pre conference workshop in Scotland in 2019 and that's where the idea of developing an Open Innovative Solution (OIS) in the name of Moodle Learning Management System (LMS) was given birth. The author had discussions with The Commonwealth of Learning (COL) to put up a proposal and develop content for junior secondary school level students at BOU's open schooling where the author served as subject specialist for the field chosen. This idea was born timeously in September 2019 before the eruption of Covid19 early 2020. As response to Covid19 crisis, many countries around the world closed schools for about six months in the case of Botswana and others it was more in a move that was deemed to halt the spread of the disease burden. UNESCO, 2020 posit that the peak in school closures was registered at the beginning of April 2020, when around 1.6 billion students from 194 countries were affected which accounts for 90% of total enrolled learners. Covid19 exposed most countries that their educational systems were based on old structures and processes dated back to industrial era, which by 2019 had not evolved to embrace 21<sup>st</sup> Century teaching and learning.

The desperate word over Covid19 situation motivated further the development of the Moodle Learning Management System at BOU for secondary education and content was developed after training of part time writers to up skill their ability to write for online audience in Junior Secondary Course Business subjects. Hamaluba (2022) argues that Business Education must be understood as a programme of instruction that consists of two partly, namely, office education—a programme of vocation for office careers, and general Business Education, which provides the recipients competencies and skills needed in managing personal business affairs and using the services of the business adds also Ezenwafor, (2012). Guidance is given that, in order to have successful eLearning environment, institutions need to have electronic devices such as computers, laptops, mobile phones, as well as access to the WWW or the Internet (Bernaldo & ernandez-Sanchez, 2022).

## 2. Research Design and Method

In this section the study explains the methodology used to conduct the study. A further explanation is offered on what constrains were experienced in the process of conducting the study.

### 2.1 Evaluation Method

A qualitative research methodology study design was adopted. Open ended questions were used to guide the interviewees when collecting data from various respondents that included JC students doing business subjects and tutors for JC business subjects in five (5) study centers based in the BOU Regional Campuses being: Kang, Palapye, Francistown, Maun and Gaborone A sample population of 44 students was derived from the student's attendance register during training using the systematic sampling technique. Purposive sampling was used to select the tutors and sample population of 6 tutors was selected.

The subject specialist scheduled trips to conduct interviews, however, due to COVID19 protocol constrains, some of the trips were cancelled and interviews were conducted over phone. Data was

collected from twenty three (23) JC students who responded and constituted a response rate of 52% within the five (5) regions of Botswana Open University. All tutors participated in the study. During the telephone interviews students were informed on the consent to participate in the interview. They were told reasons why they were being interviewed. In addition, they were also informed that their identity would be kept confidential.

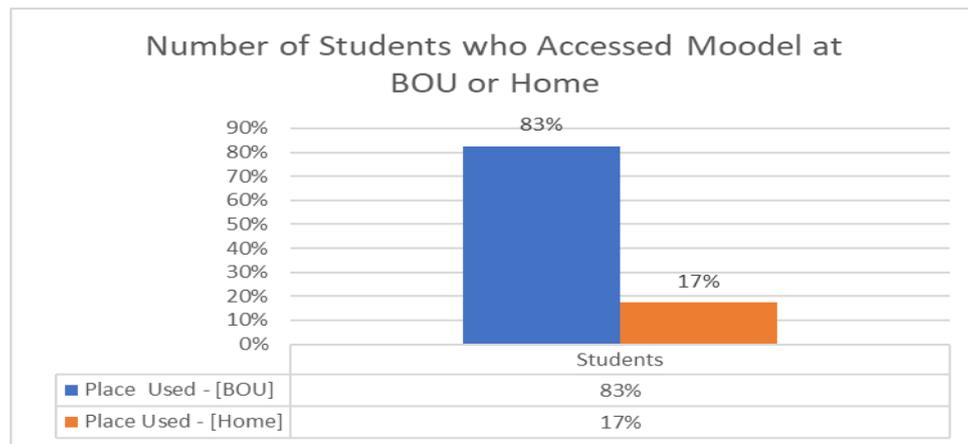
### 2.1.1 Data Collection Limitation

Mobilization of participants was not adequately done as students were preparing for examinations towards October. This affected the numbers of students to be interviewed. Accessibility of some areas in this study was challenging due to COVID-19 protocols (UNESCO, 2020) therefore in some instances the interviews were done using a phone and only one interview session was done physically at Francistown regional campus. Some student phones were not going through and others used their guardian or parent numbers but not staying together. Therefore, some students were unreachable

## 3. Discussion of Results

### 3.1

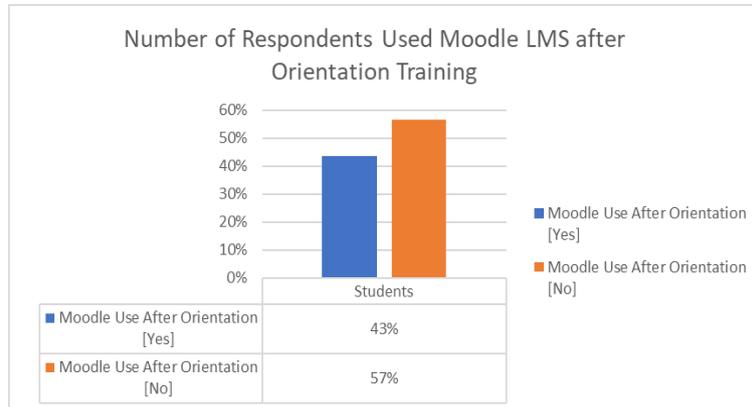
About 17% of the students, accessed Moodle LMS at home using their own Internet access and computers and smartphones to access the online platforms. This shows that a majority of the students do not have ICTs to use at home to access Moodle LMS and can only access at BOU centers.



**Figure 1. Students Who Accessed Moodle LMS at BOU or Home**

### 3.2 Students Who Used Moodle LMS after Orientation Training

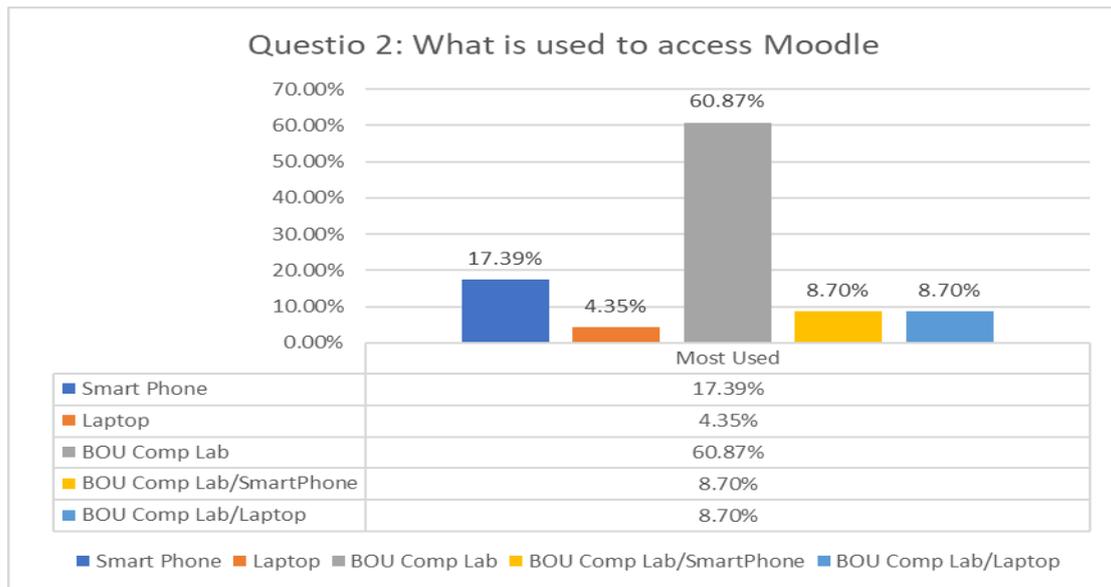
About 43% of the students continued using Moodle LMS and 57% did not. One critical observation noted by the students who attended training for the eLearning system at BOU centers in Kang, Gaborone, Maun, Francistown and Palapye was lack of ICTs to access the Moodle system at home.



**Figure 2. Students Who Used Moodle LMS after Orientation Training**

*3.3 Field Research Question 2: What Do You Use to Access Moodle, Phone, and Laptop, Desktop?*

60.87% of the students accessed Moodle LMS at BOU using BOU computer labs. About 8.70% of the students accessed Moodle LMS using laptops at BOU centers and another 8.70% using BOU computer lab/smartphones. 17.89% of the students accessed Moodle from their smart phones at home and 4.35% accessed with laptop at home.



**Figure 3. What Is Used to Access Moodle LMS**

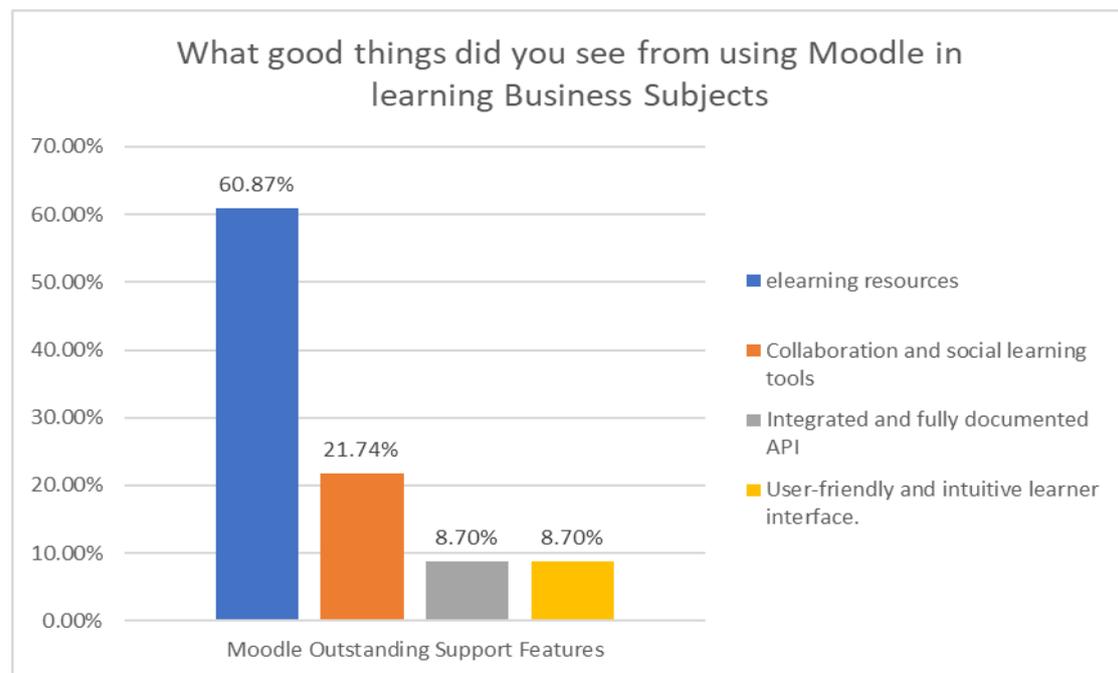
*3.4 Field Research Question 3: What Good Things Did You See from Using Moodle in Learning Business Subjects?*

Based on content analysis of the responses from the participants, about 60.28% of the respondents said they were impressed with a variety of the learning resources in the Moodle LMS. Maun student MS2 said, "...There is a lot of learning tools". The same sentiments are echoed by Francistown student FS2 "...

Easy to understand and learn because of videos”. The same students were impressed with the eLearning tools embedded in the Moodle LMS

21.74% of the students were impressed with the feature of Moodle LMS. Gaborone student GS3 said, “...get assistance from different people...”. A student from Kang, KS2 said that “easy for tutors and learners to discuss any time”

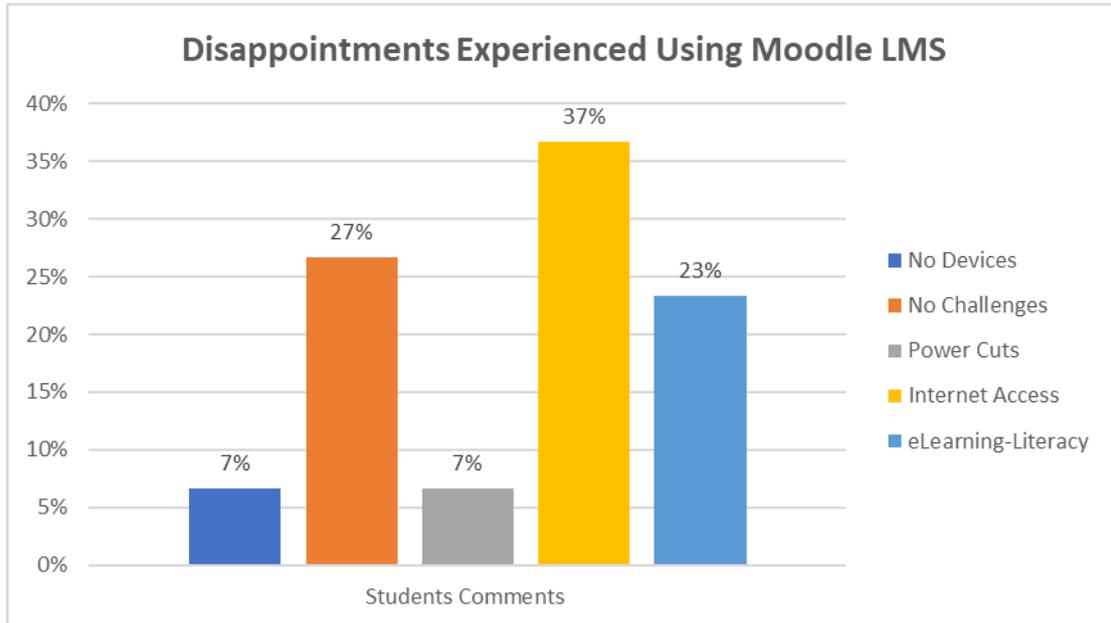
About 8.70% of the students noted the Integrated and fully document API of the Moodle LMS. Palapye student, PS4, cited that “ there is a lot of Information and easily accessible”. This reflects to the ability of Moodle to support a lot of application interfaces. Use of social media services, storage of database driven information and therefore content is dynamic. This functionality is also commented by student from Palapye who said that “... can store information for a long time” and also Francistown student FS2 said “research past papers, revision” implying the Moodle LMS system is meant to store data based on user support.



**Figure 4. MOODLE Outstanding Support Features**

### 3.5 Field Research Question 4: Tell Me about the Disappointments You've Had with Moodle

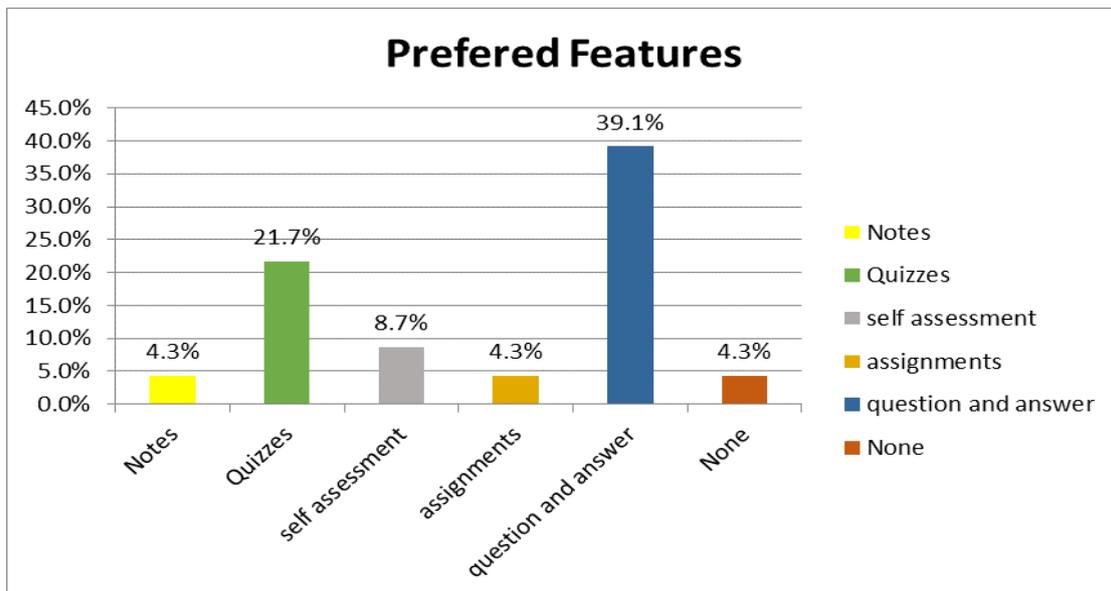
Cumulatively, about 62.2% of the students expressed that they had challenges, with 37% expressing a challenge of Internet access, 23% citing eLearning illiteracy, 7% stating electricity power cuts and 7% ICT devices to use for accessing Moodle LMS.



**Figure 5. Disappointments Experienced Using Moodle LMS**

Only 27% stated that they had no challenges using Moodle LMS both at home and in school. About 37% of the students pointed Internet access as the main problem for using Moodle LMS.

Another problem noted by the students is power cuts, about 7% of the students mentioned electrical power supply problem due to frequent power cuts. A Maun student MS5 also commented that “... Internet access and power cuts ...” are challenges to use Moodle LMS from home.



**Figure 6. Preferred Features and Enjoyed when Using Moodle LMS**

The use of eContent related to notes, all the students ranked self-assessments and assignment at the same preference level with an average of 5.2% response.

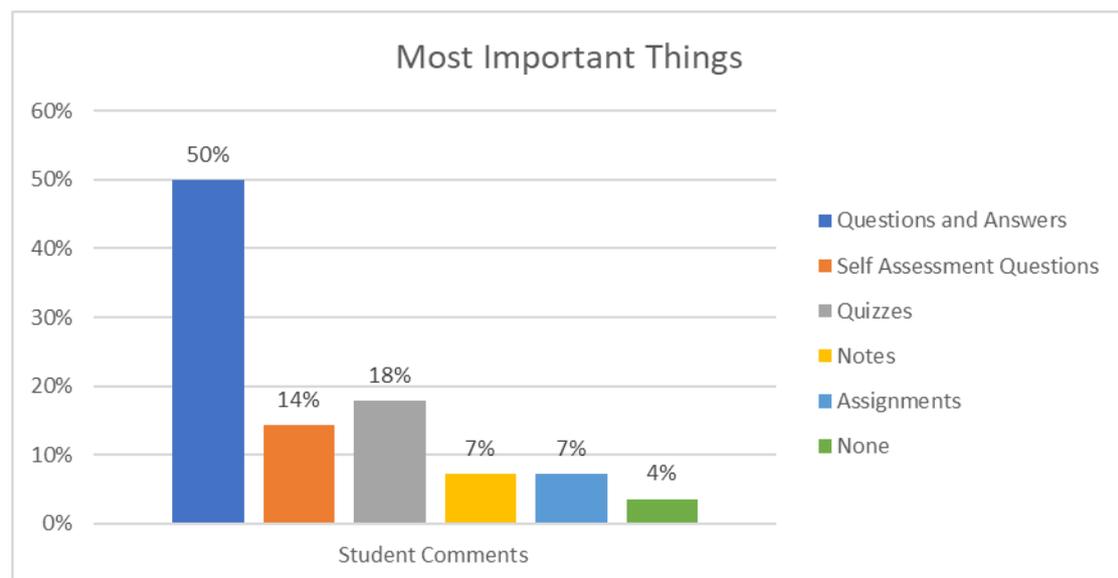
About 4.3% of the students expressed that they did not find interesting eContent features from the Moodle LMS.

**Field Research Question 6:** Of all the things we've talked about, what is most important to you?

When asked, "Of all the things we've talked about, what is most important to you", the same response as in question 5 was yielded. The question-and-answer eContent feature was rated at 50 % and as a useful feature in the Moodle LMS. Francistown student FS3, highlights the importance of the question-and-answer features as "... Moodle helped me understand what the question wants and how to answer..." Student from Kang, KS1, remarked "...questions and answers in the Moodle helped me to build confidence in examination preparation..."

The other Moodle eContent features for Notes was rated at 7%, Quizzes were rated at 18%, Self-assessments were rate at 14%, Assignment were rated 7%,.

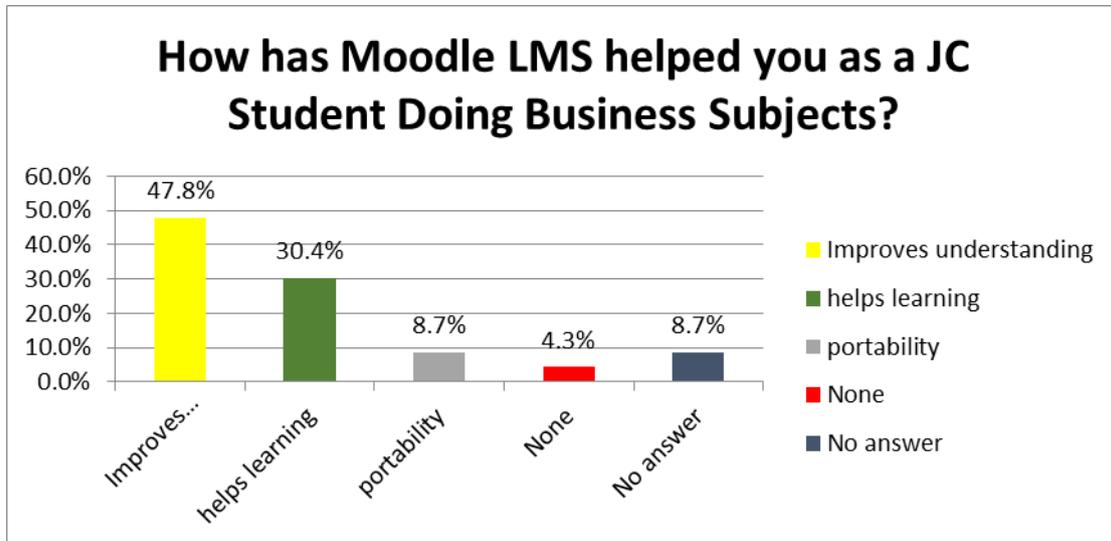
Notably is the consistent response of students who did not indicate any most important feature was 4%, which represented a student from Maun MS3 stated "...Do not remember anything taught..."



**Figure 7. Most Important Features Remembered about use of Moodle LMS**

a) **What are the levels of satisfaction for JC students doing business subjects at BOU when using MLMS?**

**Field Research Question 7:** How has Moodle LMS helped you as a JC student doing business subjects?

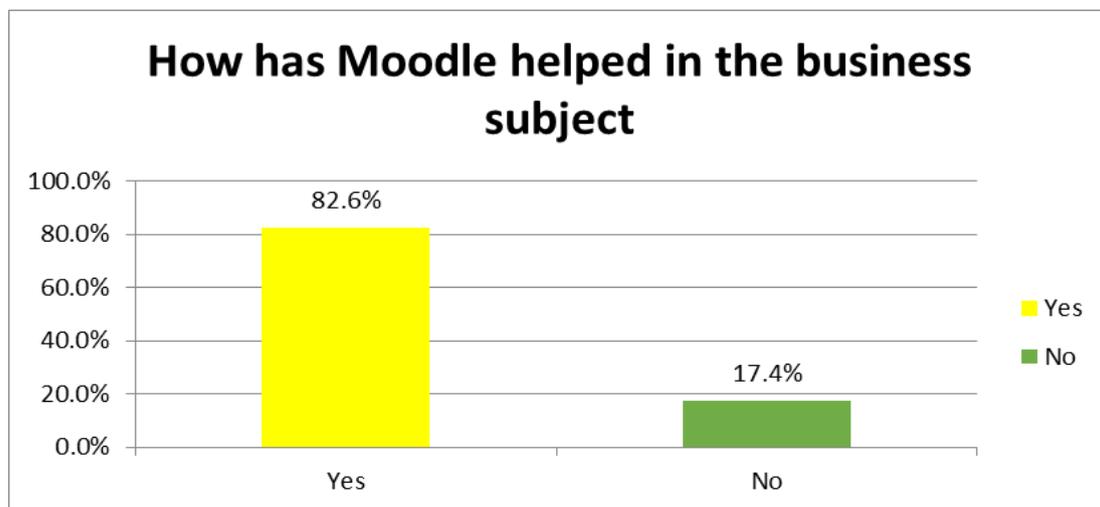


**Figure 8. Moodle LMS Support for eLearning Business Subjects**

A majority of the students (47.8%) indicated that Moodle LMS makes it easier for them to understand better, business subjects’ studies. Gaborone GS2 student commented “...made me understood a lot of content, finished syllabus and hoping to pass...” Francistown student FS6, also expresses the same comments “...prepared me for examination easily.... I thought accounting is hard”.

30.4% students indicated Moodle helps with learning. Kang student KS2, stated that “Use of audio-video material improved understanding—exposure to learning through video...” Palapye student expresses same sentiments “...Moodle showed summarized notes and books have open content”

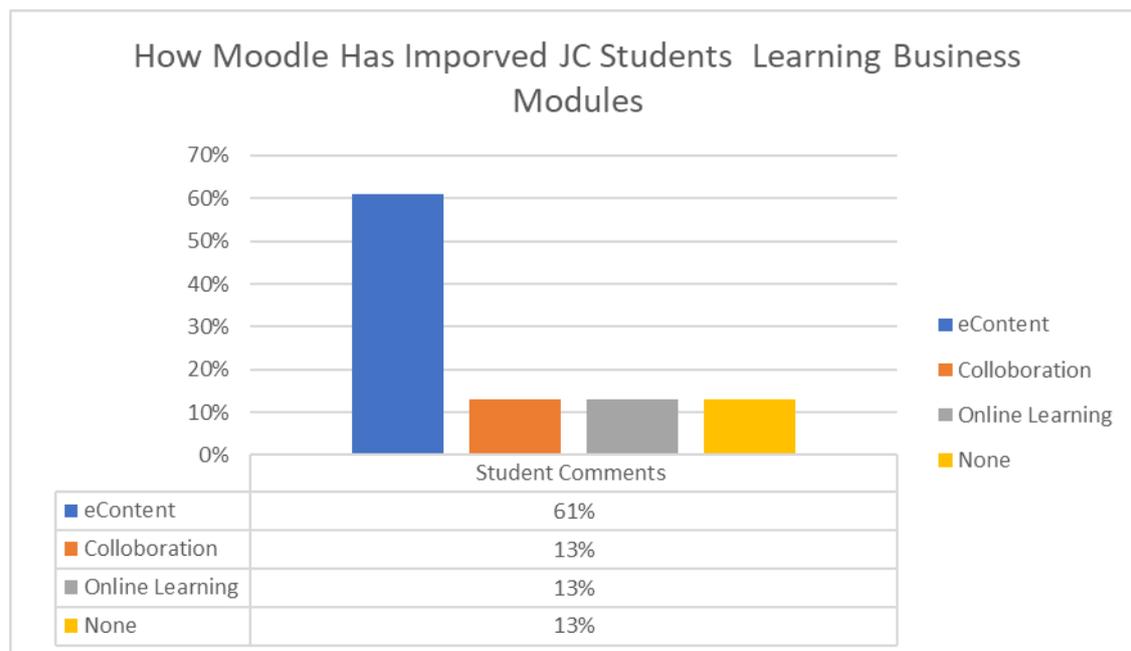
**Field Research Question 8:** How has Moodle improved your understanding of business subject you are taking or has it not helped you as a student?



**Figure 9. Students’ Rating for Use of Moodle LMS**

About 82.6% of the students stated, “YES” and agreed that Moodle LMS has helped to learn Business subjects as JC students at BOU University. From Palapye, a student PS2 indicated that understanding of using Moodle LMS to teach business subjects and facilitated “...discussion forums, questions and answer and self-assessment question helped me...” A student from Francistown FS2, cited that “It helped me to find question and answers and helped understanding question”. Another student from Kang KS4 noted that “...Watching videos and images to understand complex concepts...” Another KS3 said “...Interaction, quizzes and notes” i.e., the power of collaboration with others when learning and the use of complementary teaching approach using video and quizzes. Maun student MS5 also shares the same understanding with other students and informed “...lots of self-assessment questions, videos and images”

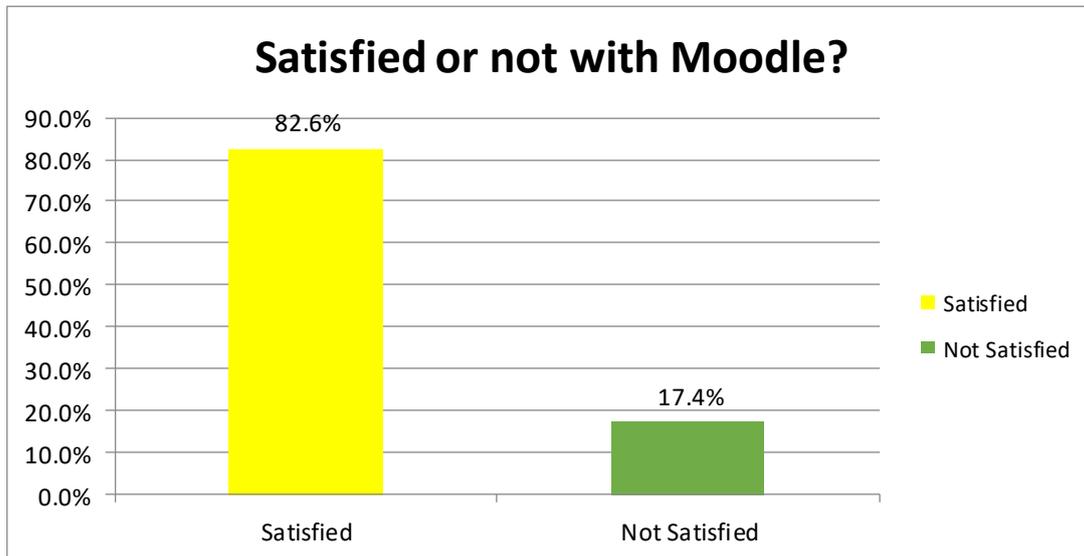
A minority of the students, 17.4% stated “No”. For instance, Maun MS3 student commented that “...I do not remember anything and needed more time...”... MS2 student did not understand what was taught and needed more time. Another student from Francistown informed “No” improvement “.



**Figure 10. Moodle LMS Objects that Facilitated Learning**

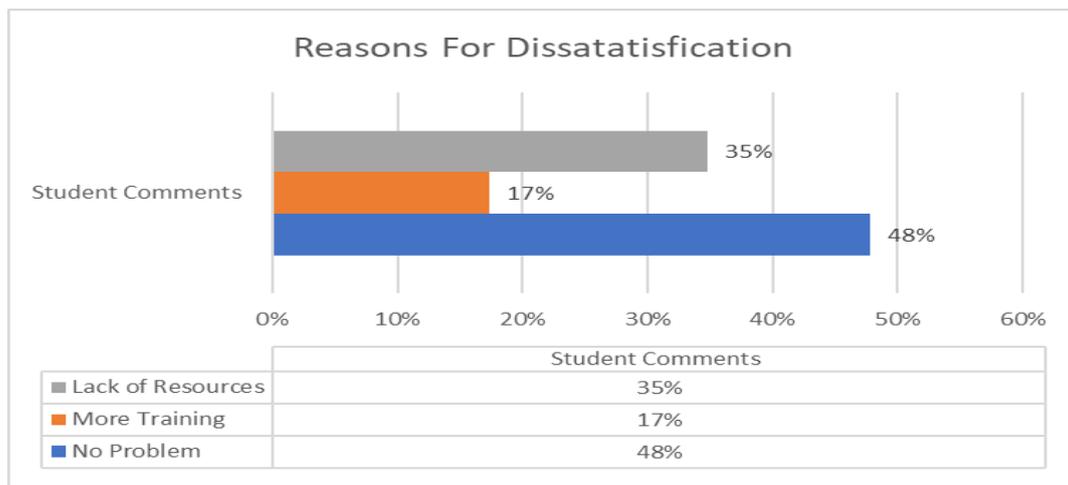
On doing content analysis of the students’ comments and responses it’s implied that about 60% of the students liked the eContent in the form of question and answers, quizzes, self-assessments, video and audio lessons. About 13% liked the aspect of learning online and another 13% like the aspect of interacting and collaborating with peers and tutors online. However, another 13% were not sure i.e., neutral.

**Field Research Question 10:** How satisfied are you with using Moodle? Did you face any problems? And if yes, what are they?



**Figure 11. Students’ Satisfaction Level on Use of Moodle LMS**

(82.6%) showed that they were satisfied with using Moodle. Nonetheless, some students (17.4%) indicated that they were not satisfied with using Moodle due to varying reasons. Maun student MS3 had this to say ““ No ...not satisfied ...time was not enough” Student from Francistown, said, “No .... lack of network at school”



**Figure 12. Reasons for Dissatisfaction on Use of Moodle LMS**

Text analysis and noting the key words as elicited from the students reports showed the following

crosscutting thematic words and their distribution amongst the students. No Problem, meaning student satisfied, More Training, Limited Internet Access, No Smart Phone, Not Internet at home, and Lack of Resources. The analysis of these results showed that about 48% of the students did not have challenges meaning they were satisfied. However, 35% complained of resources as informed by Gaborone student GS1, “Yes satisfied.... but ...If I had smart could still learn all the times”. Maun student MS1, “Very satisfied....but no accessibility at home”.

#### TUTORS OF JUNIOR CERTIFICATE STUDENTS DOING BUSINESS SUBJECTS

##### a) What are the levels of satisfaction for JC tutors teaching business subjects at BOU when using MLMS?

##### Field Research Question 1: What do you know about JC Moodle Business Subject Project?

About 86% of the tutors informed they know JC Moodle Business Project was implemented as an eLearning platform. Francistown Tutor commented, “...it is meant for JC students to access their material online” implying an eLearning platform. The same sentiments were echoed by Maun-Tutor saying “...it provides online learning for JC students doing business subjects...”

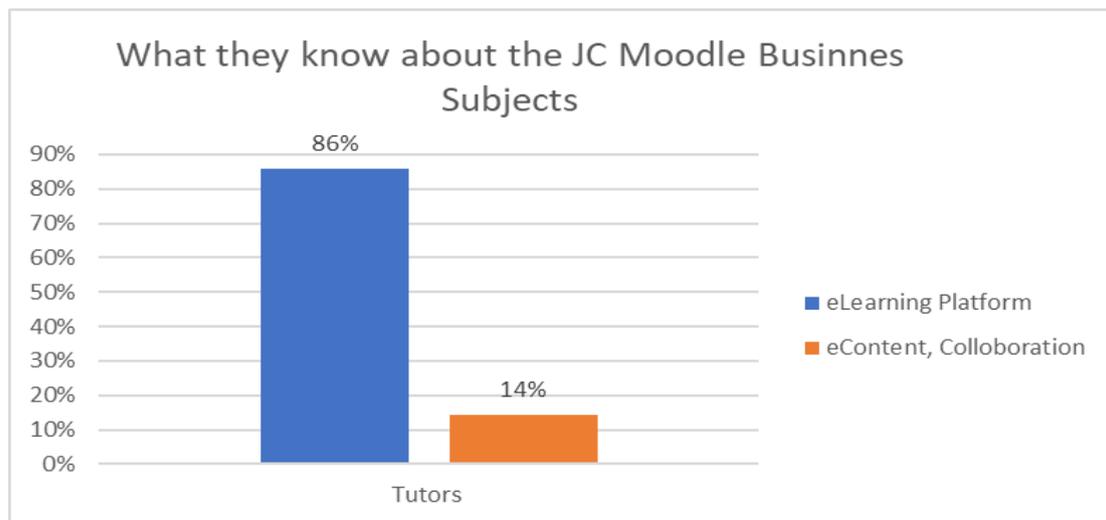
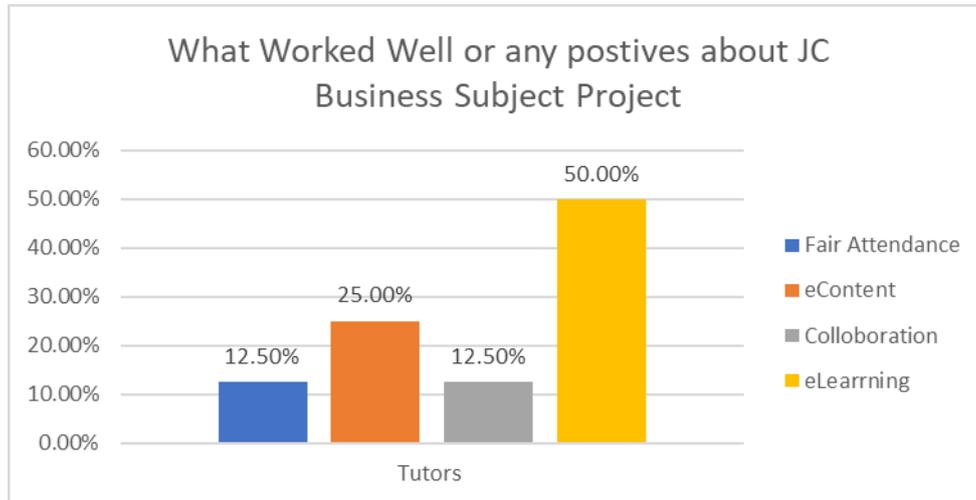


Figure 13. Tutors' Perception on Moodle LMS

About 14% of the tutors understood the JC Moodle Business Subject Project as a **facility** model, which promotes eContent access for the JC students and collaboration of the students and the tutors online. Kang-Tutor informed it allowed “... JC students to access material, interact with other students and tutors...” Francistown-Tutor informed, “... its welcome a development in particular during COVID-19 and it promotes digital learning...” Overall, the perception and knowledge of tutors on JC Moodle Business Subject Project is that, it is an eLearning platform and facilitates eContent access for the business courses taught, collaboration of tutors and students online and offers an alternative teaching approach more so in the COVID-19 era which encourages online interaction and minimum physical contact.

**Field Research Question 2:** What worked well or any positives about the JC business subject project?

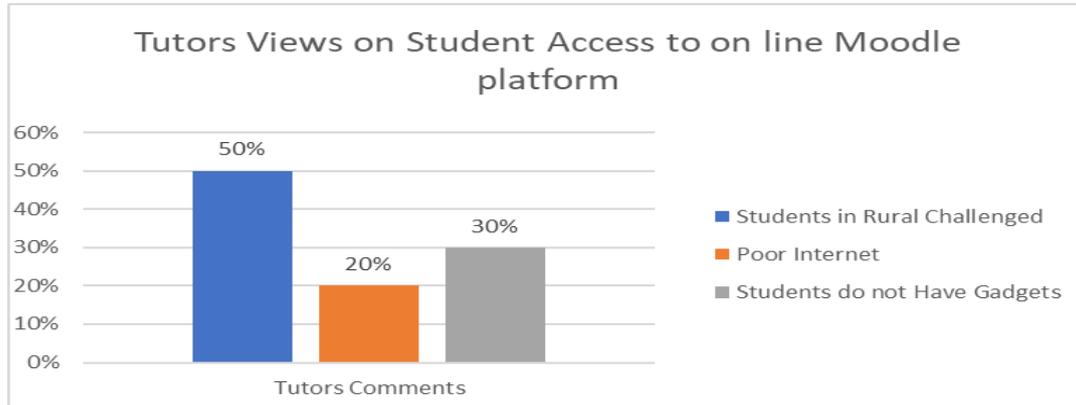


**Figure 14. Tutors' Perception on Positives on Using Moodle LMS**

About 25% of the tutors informed that the eLearning system provided access to electronic learning content for the business subjects taught. Francistown-Tutor informed that "...each student has access to notes, had quizzes assessment and their performance improved, had questions to ask..." About 12.5% of the tutors informed that the platform facilitated online collaboration of students and tutors as commented by Gaborone-Tutor "...easy for tutor to discuss with learner anywhere at any given time..." Another 12.5% of the tutors, informed that the eLearning platform promoted fair attendance of the students since they could attend any time anywhere "...Students attended almost half of them..." meaning the liked the lessons

**Field Research Question 3:** What would you say about the student access to online Moodle platform? Good or bad, and provide reason?

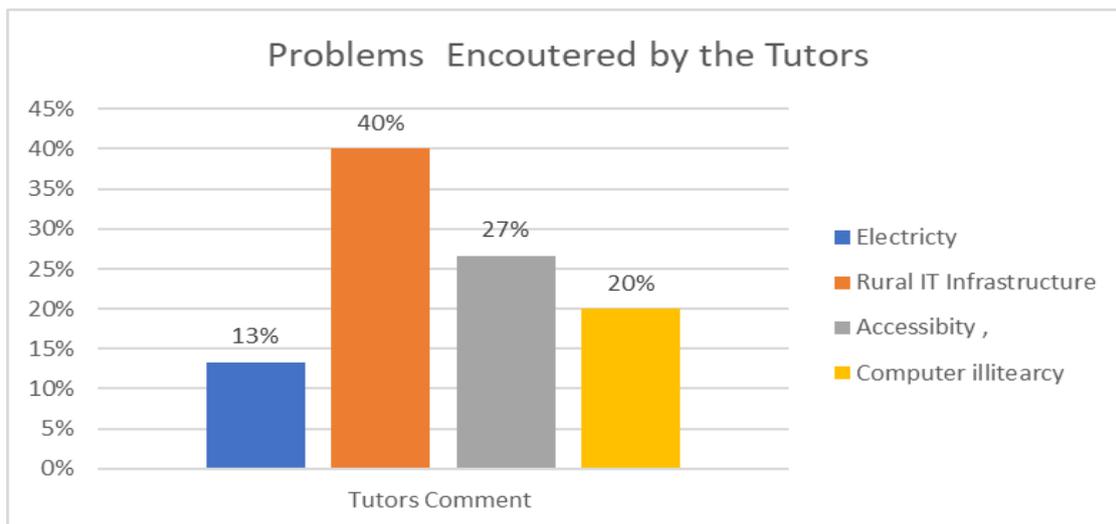
Based on thematic analysis, levels of satisfaction for student access to online Moodle Platform, the following were derived from their comments. Students in rural areas are challenged, there is poor internet connection and lack of internet gadgets for students to access Moodle LMS. ..."



**Figure 15. Tutors Views on Students’ Access to Moodle LMS**

About 50% of the tutors commented that students from the rural areas are challenged with Internet access, lack of gadgets to access Moodle LMS. Kang-Tutor informed that “... students from settlement areas have challenges of access to internet ...” Settlement areas are places confined in rural areas with no or very limited ICT resources. Another Francistown-Tutor commented that “...Moodle LMS not used by students...project was not piloted in settlement areas... and there is no Gmail”

**Field Research Question 4:** What were the problems faced by tutors and recommendation on how to resolve them.



**Figure 17. Problems Faced by Tutors and Recommendations**

40% of the tutors encountered problem of availability of ICT infrastructure in the rural areas including the settlement areas. The Kang-tutor confirms this problem by saying that “primary schools in settlements locations (part of rural areas) should be provided with some facilities for internet access found at BOU centers”.

The least noted problem was electricity, as 13% of the tutors informed that electricity was a problem due to frequent power cuts. Due to this noted problem, Maun-Tutor suggested, “...there is need to install backup generators because electricity is not stable”.

#### 4. Discussion

Looking at the questions surveyed and their appropriateness to address the evaluation questions related to students’ draws the evaluation conclusions. The same approach is also adopted for tutors based on the evaluation questions for the tutors. It’s finally deduced that Moodle is a successful project at Botswana Open Schooling at Botswana Open University.

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**Note(s)**

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