

Libyan Instructors' Perceptions of Integrating Canvas LMS in Libyan higher Education Institutions

Ahmed Maher
English Language Department
University of Tripoli
Tripoli, Libya
a.maher@uot.edu.ly

Nadia Nuseir, PhD
English Language Department
University of Tripoli
Tripoli, Libya
n.nsir@uot.edu.ly

Abstract— *Canvas is a software platform that belongs to the Learning Management System (LMS) and used to enable instructors, administrators and students to manage knowledge, share information and collaborate by implementing an appropriate pedagogical approach. Integrating online Learning LMS tools in the Libyan higher education institutions has been one of the concerns in past years, especially during the recent Coronavirus disease 2019 (COVID- 19 pandemic). Some studies were held in Libya recently to investigate the new means and strategies implemented by schools and higher education institutions of online education and e-learning resources. This study utilized qualitative methods to investigate the perceptions of Libyan instructors regarding integrating Canvas LMS in the higher education institutions, based on their own online learning experience from a professional development course on Canvas, to which they are all enrolled. Online questionnaire utilizing Google form Application was conducted with 82 Libyan instructors who responded for the study. The collected data was analyzed and the results of the study showed that ease of use and usefulness contribute to the instructors' intention and attitudes toward the use of Canvas LMS. The findings can be used by educational institutions to understand instructors' perceptions regarding Canvas LMS, and ultimately improve e-learning and instructional practices. The study recommended that the higher education institutions should use Canvas LMS being easy, and useful for both students and teachers.*

Keywords—*Canvas LMS, technology, higher education*

I. INTRODUCTION

In today's digital age, the Internet is readily available everywhere, including universities, libraries, cafés within the university campus, and even students' homes, allowing students to access it anytime, anywhere they wish to. The availability of the Internet, computer and smart devices make integrating the Learning Management System (LMS) an easy task to be achieved. A learning management system (LMS) is defined as a group of programs and tools designed for both teachers and learners to control administration, documentation, tracking, reporting and delivery of educational courses, training programs, or learning and development programs. LMS is also distinguished as an online platform that uses the Internet to support and effectively develop the teaching and learning process. This fact makes LMS a powerful tool that can enhance the way of sharing knowledge shared as it provides both teachers and students with cooperative learning and promotes participation in contrast with the conventional Learning settings, which is being used in Libyan institutions where most lecturers are classroom-centered and the flow of information takes place on-site with a limited assigned role to students only as receivers of information. With LMS, more time for

discussions and interactions between students and lecturers is possible through discussion forums. In a word, LMS bridges the gap between e-learning and the conventional way of learning by providing a set of tools that once used as a supplement material to classroom; it helps to build a good rapport between students and lecturers and to provide them with easily accessible materials, [1]–[4]

II. STATEMENT

During the last decade, LMS has been widely used in many universities around the world to develop and design online courses that aimed at intensifying the educational process on the one hand and motivating the students' learning process on the other hand. However, it has been noticed that LMS has not been popularly used in Libyan high education institutions. According to [5], [6] Libyan higher education institutes still face challenges to utilize LMS in the classroom. They referred to both students' and teachers' awareness and attitudes towards the use of e-learning and referred to the inefficient technological infrastructure, besides the lack of developing curriculum as influential factors that hinder the implementation of e-learning in Libya. These factors have been observed as a severe impact on the users' initial acceptance and attitudes towards integrating technology in high education institutions. Thus, Kenan [6] referred to the need to integrate e-learning into Libyan higher education institutions which can be only achieved by overcoming the implementation barriers through the training courses for both instructors and students to guarantee the successful implementation of any e-learning programme. In the same context, most instructors and learners are eager to use and integrate technology into their classroom due to its efficient and vital role in delivering and processing information; however, it was reported that they suffer from inadequate confidence and knowledge due to the lack of training to apply these educational tools [7].

III. SIGNIFICANCE OF THE STUDY

In terms of importance, Canvas LMS is considered one of the essential modern online platforms for E-learning which is considered as a strategic solution to enhance planning and managing all learning aspects. It plays a significant role in improving the online learning process by creating an interactive and collaborative learning environment [4], [8]. Despite the variety and widespread of LMSs worldwide and their beneficial role, it is still not adopted by the majority of the faculty members in the Libyan institutes. According to [5], [9], it is essential to investigate the LMS users' perception and their experience by examining their actual usage performance to identify their needs and the potential difficulties they might encounter. For this reason, the researchers sought the

opportunity to offer TESOL Foundation program to introduce Canvas LMS to Libyan instructors and demonstrate their acceptance and perception along with their experience in using this system. By doing this, it is expected that the findings would raise the awareness of integrating LMS in addition to exploring the perceived usefulness and ease of use, which are quoted by several studies as an impetus for the implementation of all LMS and as critical factors to consider the professional development needs of users prior to the implementation of educational technology tools, [10]–[15]. Furthermore, the researchers aspire to direct the Libyan Higher Education stakeholders, universities, instructors, and professors to the importance and applicability of using and integrating LMS in the educational system.

IV. THE OBJECTIVE AND RESEARCH QUESTIONS

The potential of this study is to explore the perceptions of the Libyan teachers about the use of Canvas LMS in a professional development course they had taken. It is aimed to investigate their perceived ease of use, perceived usefulness, attitude and intention to the use of Canvas LMS in their teaching. It also aims to provide information and statistics, which might be crucial to integrate Canvas LMS in particular and other LMSs in general into the field of teaching and learning in the high education institutions. Besides, the researchers endeavour to demonstrate the possible barriers and propound some solutions to implement Canvas LMS in high education institutions by reviewing some previous studies findings. The researchers seek to achieve the purpose of the current study through addressing the following question: What are the perceptions and acceptance of integrating LMS in the teaching process by the Libyan teachers?

V. THE THEORETICAL FRAMEWORK OF THE STUDY

According to [4], [8], [16]–[18], Davis's 1989 Technology Acceptance Model, as shown in Fig. 1, is one of the most influential models to test and evaluate technology acceptance among users. This model proposes perceived ease of use and perceived usefulness as two primary factors that have an impact on identifying an individual's attitudes and intention to use new technology. Davis developed this model in 1989 to replace the theory of reasoned action (TRA) that consists of only two technology acceptance measures; 'ease of use' and 'usefulness'. Davis's developed model has five measurement constructs; 'perceived ease of use' (PEOU), 'perceived usefulness' (PU), 'attitude toward using' (ATU), 'behavioural intention to use' (BIU), and 'actual system use' (AU). Consequently, TAM is adopted as a conceptual framework to measure the lecturers' acceptance and perceptions of integrating LMS into higher education institutions' teaching process. Moreover, this model was tested in terms of validity and reliability by the mentioned studies. Fig. 1 below shows the Technology Acceptance Model.

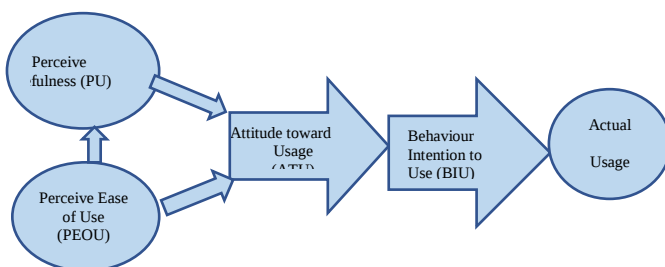


Fig. 1 the Technology Acceptance Model

In terms of measuring the TAM, Davis [12] claims that users would first evaluate how easy or difficult it is to use the LMS, then they look at its usefulness. If they encounter ease and useful usage, they will develop a positive attitude towards it. The positive attitudes would lead to developing a positive behaviour intention to use it. Finally, their positive behaviour intention would influence their actual use of technology.

VI. LITERATURE REVIEW

The modern lifestyles and its dynamic development, especially in technology during the last decades, made most educational organizations think to integrate technology into their systems due to its indispensable role in enhancing the teaching and learning processes. This development of technology resulted in the existence of E-learning. E-learning plays a vital role as a facilitator and appropriate learning style that can help most students arrange their studies and, more importantly, fit their schedule with their pace of life and use their free time [19]. Additionally, it enhances the educational process that achieves its continuing demands and provides more educational opportunities through the available different tools and software that motivate learners to study on their own from any equipped place 365/24/7. As mentioned in [20], employing LMS tools effectively leads to creating a relaxing learning environment for the students, which likely results in increasing their retention and satisfaction of the system. Therefore, it is evident that using LMS helps to make the educational process learners-centred as it provides them with educational opportunities and acquire knowledge and apply it by themselves. On the other hand, instructors can easily use LMS to structure and deliver their materials, monitor and assess their students' participation and performance and more importantly create a more interactive and collaborative learning environment. For this reason, different institutions adopt different LMSs worldwide, such as Blackboard, Canvas, Desire2learn, Sakai and Moodle. However, Canvas LMS was reported as the second most common LMS with nearly in high education institutions. [1], [21], [22].

A. What is Canvas?

Canvas LMS is a free cloud-based LMS with an unlimited file size that helps students learn efficiently via the available communication, discussion, and assessment tools. It is a well-designed web framework with a friendly interface that makes it a powerful virtual online platform for 21st-century course delivery. According to the official Canvas website (www.instructure.com), it is a combination of vital tools that help both teachers and students to work interactively and collaboratively.

B. Advantages of Canvas LMS

Canvas enables instructors to do various tasks such as content organization and delivery; providing collaborative work, assessing the students' assignments and quizzes; tracking their students' performance and participation; managing and controlling the course information. On the other hand, students can use Canvas to access the course materials and activities; submit the assignments; discuss and work collaboratively with their colleagues; receive constant feedback and automatic graded tests. They can also interact individually or in groups via built-in communication tools such as messaging, audio notes, video, and face-to-face interactions through the video conference tool. In addition to the various built-in tools, Canvas LMS provides the possibility to integrate and embed different trusted open source applications and programmes in the field of education such as Google Classroom, Google Docs, Microsoft Teams, Zoom, and other technology partners that could make the

learning delivery experience via Canvas LMS more dynamic and engaging. Furthermore, Canvas has advanced features that promote teachers in organising and navigating their curriculums through the modules and using the calendar to set up the due dates for the given assignments, including the peer reviews and the quick quizzes offered with the speed grader. It also helps to create digital portfolios for each student that enable instructors to assess and evaluate their participation in the course. Canvas can be used on different devices such as computers, smartphones, and tablets [23], [24]. Fig. 2 below illustrates the various tools of Canvas LMS.

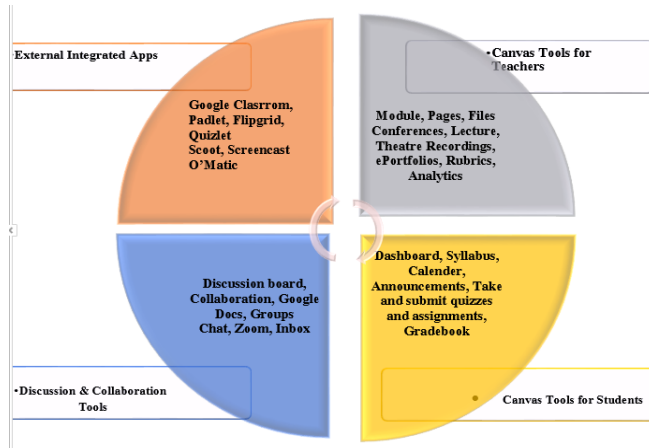


Fig. 2 shows different tools of Canvas

According to LMS data of use analysis in spring 2020 reported by Edutechnica website, which is specialised in LMSs use analysis, Instructure's Canvas LMS continued to widen its lead steadily in US higher education since its first lunch in 2013 comparing with the other top rival LMSs such as Blackboard, Moodle, Sakai and other LMSs that slightly declined. Fig. 3 below illustrates the ascendancy of Canvas the Instructure's Canvas LMS and its steady growth pattern in higher education.

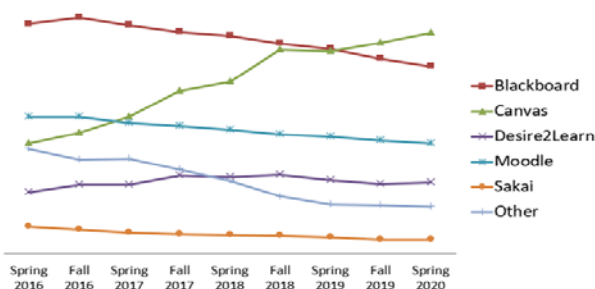


Fig. 3 shows the ascendancy of Canvas

C. Disadvantages of Canvas LMS

The disadvantages of LMS can be classified into two categories: first: personal disadvantages that could include the users' unfamiliarity and lack of motivation and intention to use. Secondly: organisational disadvantage including the lack of infrastructure needed, and the absence of technical support team and trainings that could affect the efficiency of using any LMS [6], [15], [26].

D. Implementation of Canvas LMS

The shift from the traditional way of teaching, which relies only on classrooms settings, to e-learning and using LMS is a great leap forward towards a better education that requires many demands that must be met. Thus, Pajo and Wallace [25]

stressed that integrating technology in teaching successfully does not only depend on the availability of technology but also on users' competence, which is crucial. For this reason, it is crucial to demonstrate the users' perspectives of Canvas LMS to demonstrate their needs and provide them with the appropriate training courses, resources and support [15]. This would provide in-depth understanding and lead to enhancing the implementation of this system into classroom, which would directly affect the students' proficiency by providing them with an adequate learning opportunity. In the same context, according to [26], it is significant to encourage both faculty members and students to use LMS and increase their familiarity by providing them with the necessary training in different forms such as attending training courses, offering online self-paced courses, and face-to-face workshops. Kenan [6] contacted a study seeking to propound some recommendations for the development of e-learning based on the found barriers to implementing e-learning successfully at the University of Tripoli. She used a SWOT model for a diagnostic purpose to develop the actual use of e-learning. Kenan classified the identified barriers into three main categories, which are technical, cultural and mismanagement. In brief, before implementing any LMS, providing faculty members and students with the proper support and raising their awareness of the vital role of using technology are essential factors that should be considered. More importantly, it is highly recommended to cogitate the previous studies' mentioned barriers to integrate technology in high education institutions successfully.

E. The Acceptance of Educational Technology

The acceptance of technology or any other online tools is based on the beneficial degree the adopted system has on improving its users' performance. According to Biswas's suggestions [8], the 'perceived ease of use' and 'perceived usefulness' of a new system are crucial factors that determine the users' attitudes towards using the system, which, in turn, demonstrate their behavioural intention and ensure the continuity of using the new system. It has been confirmed that the users' perceptions positively influence and reveal the intention to use educational technologies in higher education [11].

Several studies [4], [8], [16]–[18], [27] were conducted to investigate and explore their target participants' perceptions regarding technology acceptance using TAM in different academic settings extensively. They all confirmed that TAM is a valid instrument to measure users' acceptance of using new technology in this concern. Moreover, TAM was commonly applied to examine users' attitudes and behavioural intentions toward accepting technology by collecting participants' opinions and providing information on using Internet-based teaching platforms. It is worth noting that the related studies' findings have proposed different constructs concerning the acceptance of new LMS. For instance, [11] gave the critical role to both PU and PEOU across different stages of their longitudinal study as predictor factors to the acceptance, behaviour intention and continuity of using technology. In contrast, Jaber [28] found out that PEOU has a more substantial influence on predicting the acceptance and continuity of using technology rather than PU. Jaber investigated the acceptance and perceptions of the staff and students along with the influencing factors toward the adoption of E-learning systems in the Jordanian academic institutions. His conceptual framework was based on the TAM model and employed qualitative and quantitative approaches to 218 participants. The obtained results reflected the

significant role of the perceived ease of use and usefulness in increasing the intention to use any E-learning systems in the Jordanian higher education institutions.

VII. METHODOLOGY AND RESEARCH DESIGN

A. Research design

The qualitative approach was the selected design for the current study seeking to answer the aforementioned research question. Qualitative research yields an understanding of a situation that narrates experiences rather than determining cause and effect [29], [30], [31].

B. Participants of the study

The participants of the study were 82 Libyan pre-service and in-service teachers enrolled in an online TESOL Foundation program through Canvas LMS, as an online professional development session for teachers of English in Libya. It is common in qualitative research that the sample is intentionally selected according to the needs of the study to yield the best understanding of it; which is a purposive sampling [30], [34]; nonetheless, convenience sampling was used in this study because the they were convenient in access and proximity as they were known to the researchers being all enrolled in the online program plugged in Canvas LMS. The researchers received 82 responses, 59 females and 23 males. Their ages ranged from 25 to 35 years. All the participants of the study were enrolled in TESOL online course on Canvas.

C. Instrument of Data Collection

To collect data, the researchers designed an online questionnaire that was distributed via social media tools to pre-service and in-service teachers using Google forms. As an online survey platform, Google form helps create survey forms that are easy to build and receive responses and initial analysis of data free of cost and in a timely manner [32], [33]. The questionnaire consisted of demographic information inquiry and included closed-ended questions and open-ended questions to explore the participants' perceptions and acceptance towards the integration of LMS into the teaching process based on the Technology Acceptance Model in accordance with the theoretical framework of the study. Some questions were adapted from prior studies [4], [8], [16]-[18]. The questions in the questionnaire were classified into five categories according to TAM, which are perceived ease of use (PEOU), perceived usefulness (PU), attitude toward using (ATU), behavioural intention to use (BIU), and actual system use (ASU).

D. Procedure of Data collection

The first step in the procedure was the selection of study participants who were all enrolled in the online program plugged in Canvas LMS. By enrolling in TESOL Foundation program, the participants had to work on five modules assigned to be done in five weeks. Each module contains topics in the field of teaching English and the applicants had to read, watch videos, answer quizzes and submit assignments. After that, the participants had to submit the final research paper by the end of the fifth week. The experience of taking a virtual course on LMS Canvas entails the participants to read instructions and finish the successive lessons. Participants used the course navigation menu to show different course areas e.g., modules, assignments, quizzes, discussion, and syllabus to access them easily.

A two-week time was given to receive the filled questionnaire from the participants allowing more time for

the participants to join the survey. A five-point Likert Scale was used to collect the data from the participants, ranging from strongly agree to strongly disagree, where 5 is strongly-agree and 1 is strongly disagree. It is worth mentioning that the link to the Google-form questionnaire and an approved consent form were posted on a discussion group on Viber that was used by the participants to collaborate and share ideas while they were working on the Canvas online TESOL Course.

E. Data Analysis

Data analysis is a key component of qualitative research and involves the processing of data in order to answer the research questions [30], [31]. The researchers analyzed the data collected to determine the participants' perceptions on the PEU and PU of using Canvas LMS platform under study and whether they influence the intention and/or the actual use. The data analyzed was later discussed to shed light on the Integration of Canvas LMS in the Libyan higher Education Institutions as perceived by the teachers. The questionnaire responses gathered from Google forms App were in an initially organised tabular form. The researchers conducted extensive open coding of the data collected from the questionnaire questions [30]. Data were organised around each research question, which related to teachers who were taking the Canvas online course and the factors that shaped those experiences. The organized data were then compiled to get a set of codes (coding scheme) [30] around the five factors of the TAM, related to the perception and acceptance of the teachers to the use of Canvas. Later, through further coding of the data, many categories emerged, which in turn were organised and synthesised in accordance with the research question and theoretical framework to draw conclusions. The emerged categories are explained in the discussion section to facilitate understanding of how the data were interpreted in answering the research question.

VIII. RESULTS AND DISCUSSION

The purpose of this study was to examine Libyan teachers' perceptions towards integrating Canvas LMS in Libyan higher Education Institutions based upon their use, attitude and intention. Instructors perceptions toward using Canvas LMS have been examined. the data analyzed were connected to existing Technology Acceptance Model TAM, in order to draw conclusions and rationalize the results that were produced. The findings of this research were grouped in the following five themes:

A. Perceived ease of use (PEOU).

Analysis showed that about 95% of the participants mentioned that Canvas is easy to use and clear enough to understand and work through. The data coded and analysed show that most of the participants thought that the virtual platform is well-organisation and structured in a way that makes it clear to follow. The point of view of one of the respondents was that quizzes style in Canvas are "tricky" and "needs careful thinking". Based on most of the responses, Canvas is clear and easy to understand and use. Fig. 4 below shows participants' perceived ease of use Canvas LMS

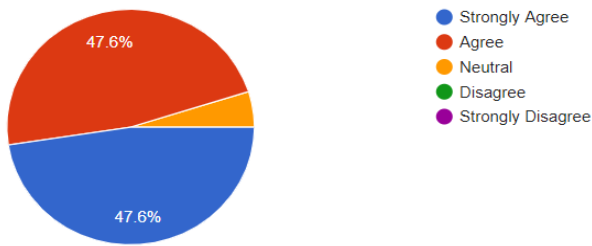


Fig. 4 shows participants' perceived ease of use Canvas LMS

B. Perceived usefulness (PU)

Data related to the perceived uses of Canvas revealed that participants might have two main aims of using Canvas:

- 1) *Teachers' personal aims:* Some of the personal goals that instructors *agreed* on were "to develop their familiarity with online and blended ways of teaching", "change their traditional methods of assessment and testing", "improve their teaching strategies", and Designing their own online syllabus and courses.
- 2) *Teachers' professional aims:* Participants also perceived main teaching aims to apply in their classes. 'some participants thought that "Canvas provides great activities for the students to learn and think deeper'. Other participants declared that "it helps the students communicate with each other and with the teachers efficiently. Other professional uses the participants stated were "facilitating the transmission of information", "motivating and engaging the students', and "aids them enhance their learning skills and autonomy". Fig. 5 below shows participants' perceived usefulness of Canvas LMS

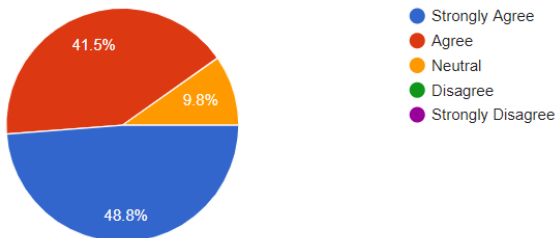


Fig. 5 shows participants' perceived usefulness of Canvas LMS

C. Attitude toward using (ATU)

In discussing the data that relate to instructors' attitude, the information provided insights about a theoretical connection of data analysed. According to Technology Acceptance Model TAM that perceived ease of use and perceived usefulness are important in determining attitude toward use of LMS. Fig. 6 indicates that about 98% of the participants' positive attitude towards the use of Canvas LMS. They clarified that Canvas LMS is worth applying is the Libyan educational system, being easy to use and purposeful. It is worth mentioning that two- thirds of the participants were using Canvas LMS for the first time.

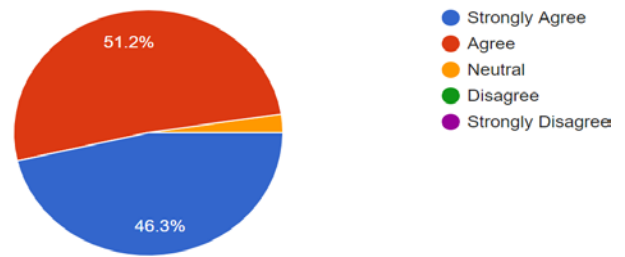


Fig. 6 shows the participants' attitudes toward using Canvas LMS

D. Behavioural intentions to use (BIU)

The Participants mentioned many aspects of Canvas that they may use in their future teaching, such as teaching & learning tools, presentations, Lessons, discussion, assessment, and writing e-mails. Instructors perceived that the Canvas LMS offers strong support on the teaching and learning activities in the online or blended classes, and mentioned their interest and intention to use it and "explore how to use it for lessons plans, and exams". Fig. 7 below reflects the high intention to use Canvas LMS.

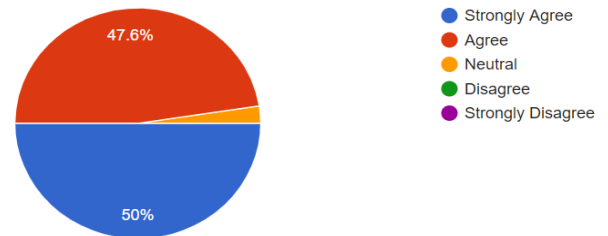


Fig. 7 shows the participants' behaviour intention to use Canvas LMS

E. Actual System Use (AU)

Fig. 8 shows that only 23 participants confirmed the prior and/or current actual use of Canvas in improving the students' learning skills. However, participants, who used Canvas LMS for the first time in the TESOL online course that they were enrolled, expressed their enthusiasm to use Canvas and get orientations and background on using it.

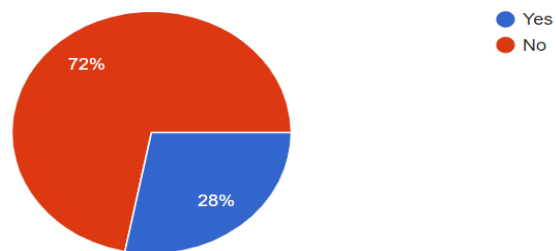


Fig. 8 shows the participants' actual use of Canvas

IX. CONCLUSION

This study investigated Libya instructors' positive attitude and acceptance of Canvas LMS using TAM to reinforce the conceptual framework. Subsequently, TAM can be an effective model to interpret the intention of the teachers to utilize LMS tools, namely Canvas, being the platform under this study. Based on the discussion of the findings, the results revealed that perceived ease of use and perceived usefulness are motivating and needed to enhance the attitude toward use alike leading to prospective opportunities to actual use the Canvas LMS online platforms. The participants' responses also imply that they were satisfied with their experience in using Canvas LMS as a firsthand experience in the online course they were enrolled to. They perceived that Canvas can serve their personal and professional goals

through LMS educational tools. Moreover, Canvas LMS may enhance their intention and subsequently their actual use of this online platform.

The study has contributed to the literature in the area of integrating Canvas LMS tool in Libya. It has also provided valuable information from instructors that can encourage higher educational institutions implementing Canvas and LMS applications in general. This study has also shown that more research needs to be conducted in the area of improving utilizing LMS to enrich the teachers' online teaching.

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