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# Engaging secondary school students in learning Arabic language through flipped classroom using creative MOOC design

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**Abstract**

For many years, educational researchers have been challenged to prove and justify the effective use of computers in teaching and learning in the classroom. In reviewing the antecedents of computer use in education, many studies have adopted a relatively restricted perspective and confined their research to only technology-based variables, namely students' attitudes towards computers and their experience in using the computer. In contrast, this study includes an investigation of teachers' educational perceptions (constructivist beliefs, traditional beliefs) as an antecedent of computer use, while regulating the influence of technology-related variables (computer experience, general computer attitudes) and demographic variables (gender, age). For identifying the distinction in the determinants of computer use in the classroom, multilevel modelling was used (N = 525). For assess primary school teachers' use of computers in supporting the pedagogical process, an adapted version of the "Class Use of Computers" scale of van Braak et al., (2004) was used. It basically explained the various forms of computer use among primary school teachers, supporting the hypothesis that "teachers' beliefs are significant determinants in explaining why teachers adopt computers in the classroom." Concerning the effect of computer experience, general computer attitudes and gender, the findings indicate a positive impact of constructivist beliefs on the classroom use of computers. The use of computers in the classroom is negatively affected by Traditional views.

*Keywords***:** Learning Arabic Language; Flipped Classroom; MOOC; students; computer

## 1. Introduction

In this era of the Internet of Things (IoT), education has also been reshaped by the new initiatives by companies and organisations that try to redefine how learning should take its shape in making the university of the future relevant in the wake of the University 4.0 revolution.

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The globalisation of education is enabling students to get the education they crave for without moving or studying abroad. Teaching and learning are not limited to one's current university only as they are now able to study courses offered by the best universities all over the world by taking the courses online. Among the popular educational platforms that enable such drive are Apple's iTunes U, Moodle, Google's Open Education, Edx and Massive Open Online Course (MOOC). For this study, the focus would be on MOOC as it is the platform being promoted by the Ministry of Education, Malaysia for the past few years. MOOC offers a web-based online class that is managed by a lecturer or a team of lecturers that developed their flexible online courses like the ones offered offline by the faculty and university. Due to its simplicity and user-friendly features, many institutions of higher learning have developed their MOOC courses and offer them to anyone interested. Some terms and conditions need to be fulfilled for accredited university courses but its availability has presented a new paradigm to the overall value of online learning and future university education. It is becoming a popular self-based learning platform among higher education students, which measures the academic excellence of universities around the world. Millions of students worldwide have enrolled; thousands of courses have been provided; and hundreds of universities have joined the queue to participate (Christensen et al., 2013) using the platform. Some earlier studies have embraced a rather limited view of MOOC as exclusive for higher education students only, and the only one independent variable in their studies. This study centres on MOOC for secondary school and the look at more than one independent variable such as a flipped classroom. To identify differences in determinants of the merge between MOOC as self-based learning and flipped classroom as a cooperative learning approach, an experimental study was used for the analysis of students' attitudes on using MOOC to support the learning of STEM-based Arabic language. This paper also examined how MOOC and flipped classroom affected the learning process of Arabic language at Permata Insan .

This study differs from others in that it investigated the use of a MOOC for teaching secondary school students, and not for higher education. Typically, MOOC is used as self-learning courses. However, in this study, the MOOC course was used for teaching the Arabic language in Permata Insan College through blended learning and flipped classroom, not self-based learning.

## 2. Permata Insan College

Permata Insan is a government secondary school that provides a specially-designed curriculum and learning experience for gifted and talented students in Malaysia. It introduces the school-in-campus concept where students would be able to utilise the facilities and expertise available in the university. There are two basic stages in the programme: the first is pre-college, where students are provided support through e-learning and assistant teachers who tutored them throughout the academic year at a specified centre near their hometown. The Arabic language is taught across the curriculum. PERMATA Insan College which is located in the Islamic Science University of Malaysia is built to help the Muslim gifted and talented students to excel in their own choice of subjects and areas of study (Ibrahim et al., 2017). The second stage is the collegiate phase. they stay in the college and start to study Permata Insan curriculum for gifted and talented students.

Permata Insan College aims to nurture young Muslim scholars who may in the future receive the Nobel Prize for Science through the integration of *naqli* and *aqli* sciences. "Nurturing future Muslim Scholars" is the motto that Permata Insan College aspires to achieve among all the individuals that enter the institution. Every student would be mould into a well-rounded individual who practices the principles of leadership and ethics as prescribed in Al-Quran and Hadith. It is supposed to be a long continuous process as students would develop their talents and knowledge through the Permata Insan

programme that would prepare them to continue their study up to the doctoral programme (Zakaria, 2015).

Students who are interested to join Permata Insan must go through a standard procedure that includes some computerised tests and a centralised personality assessment camp to qualify the entry to the college. One of the earlier steps would be for students to achieve a good score in the standardised intelligent tests known as UKM 1 & 2. Once the online tests are pass, then they would have to sit for religious knowledge test called USIM before they could go for the final student selection camp at the college.

## 3. Massive Online Open Course (MOOC)

Massive open online courses (MOOCs) represent an important new pedagogical approach ideally suited to the network age. However, little is known about how the learning experience afforded by MOOCs is suited to learners with different skills, motivations, and dispositions. (Milligan, C., Littlejohn, A., & Margaryan, A. 2013)

Massive open online course (MOOC), is described as “a free Web-based learning platform and model for delivering learning content online that is designed for participation from around the world, by any individual wishing to enrol for an online course, with no attendance restrictions.” Khalil and Ebner (2016c), Lackner, Ebner and Khalil (2015) explain that “Characteristically, MOOCs have their basis in video lectures, multiple-choice quizzes or peer-review assessments, discussion forums, and documents”. Besudes, Khalil, M, and Ebner, M. (2016) add that “Lessons are delivered weekly, and students commit to attending during the week. Furthermore, students can prepare assignments and then share and discuss their views on forums or social media networks.”

The acronym “MOOC” was created in 2008 by Dave Cormier, of the University of Prince Edward Island for a course made available by the University of Manitoba, named "Connectivism and Connective Knowledge." The participants comprised 25 tuition-paying students from the university and 2,300 “free” students from the public domain who enrolled for the course online. There were RSS feeds for material and participation was supported by a “Moodle” (a learning management system), blog posts, “Second Life” and real-time online meetings.

Many proponents of online education were convinced that these “massive open online courses” were ready to nullify the century-old concept of higher education. Their technological interactivity had the potential to provide top-quality teaching from institutions including Harvard, Stanford, and MIT, not just to a modest few hundred students in a lecture hall in an ivy-league campus, but free through the Internet to thousands or even millions worldwide. Such scalable designs have motivated some authors to doubt their usefulness as an effective environment for online learning (Rhoads, Berdan, & Toven-Lindsey, 2013). Nevertheless, their popularity is obvious. Demographic data available from MOOC providers show that no less than two-thirds of MOOC participants have been highly educated (at least to college level). These individuals appreciate the access to free learning content and are nor concerned about the lack of formal accreditation, in contrast to traditional courses, where standardised learner motivations are mainly successful completion of a course or degree (Kizilcec, Piech & Schneider, 2013).

In this study, researchers were looking at the effectiveness of MOOC and flipped classroom in the teaching of the Arabic language. Yet, this study is different from the others that it was taught to secondary school students, not to those from higher education institutions. This study also differs in that it integrated both the flipped classroom and MOOC in the teaching of Arabic, as a part of the learning process through a blended learning approach and not only self-learning.

## 4. Flipped Classroom

A flipped classroom is an instructional strategy and a type of blended learning, which aims to increase student engagement and learning by having pupils complete readings at home and work on live problem-solving during class time (bergmann j. & sams a., 2012). The approach taken for the flipped classroom learning method is to combine self-learning and blended learning and In this approach before the course the students watch theoretical part of lesson via multiple equipments such as online videos, presentations, learning management systems and take notes, prepare questions about the parts that they do not understand (Bergmann, J., Overmeyer, J., & Wilie, B, 2013). The flipped classroom approach is described as "what is done at school is done at home, homework is done at home and completed in class" (Sams & Bergmann, 2014). This is the most recognized feature of this approach. Bergmann, Overmyer and Wilie (2011) maintain that "The flipped classroom transfers learning responsibility from teacher to the student," while Milman (2012) says that "the essential benefit of the flipped classroom approach is to support team working within a class." Fulton (2012) states that the advantage of the flipped classroom is that "students can access a videos lecture whenever and wherever they want, and it allows them to learn at their speed. Besides, according to Kellinger (2012), "the students that learn through this approach are encouraged to think both in and out of class."

## 5. Aims of the Study

This study aims to investigate the effects of massive online open course MOOC and flipped classroom, on teaching the Arabic language for STEM to gifted and talented students in Permata Insan college, since it was the first study about MOOC and flipped classroom for the secondary school in Malaysia, the special in this study it was mixed between self-based learning and Cooperative learning, this study tried to answer the tow flowing research questions:

a. What are the MOOC advantages for students and teachers?

b. What are the effects of the combination of MOOC-plus-flipped classroom on students' achievement in Arabic language subject?

The study data were collected through experimental study and open-ended questions interview session with students and it was later analysed and explained in the later section in this paper.

## 6. Methodology

In this study, three interactive learning methods have been dealt with to provide an effective possible level of learning opportunities for gifted and talented students. An established curriculum was planned and developed that combined open learning with flipped classroom and blended learning, taking advantage of the students' skills and ability to use tablets. The most important reasons that led to this study was to allow students to experience the typical learning process in universities through MOOC and self-learning, and the second reason was to afford time for the lecturers to carry out other duties such as research and academic supervision, Figure 1 illustrates the structure of the implemented curriculum.

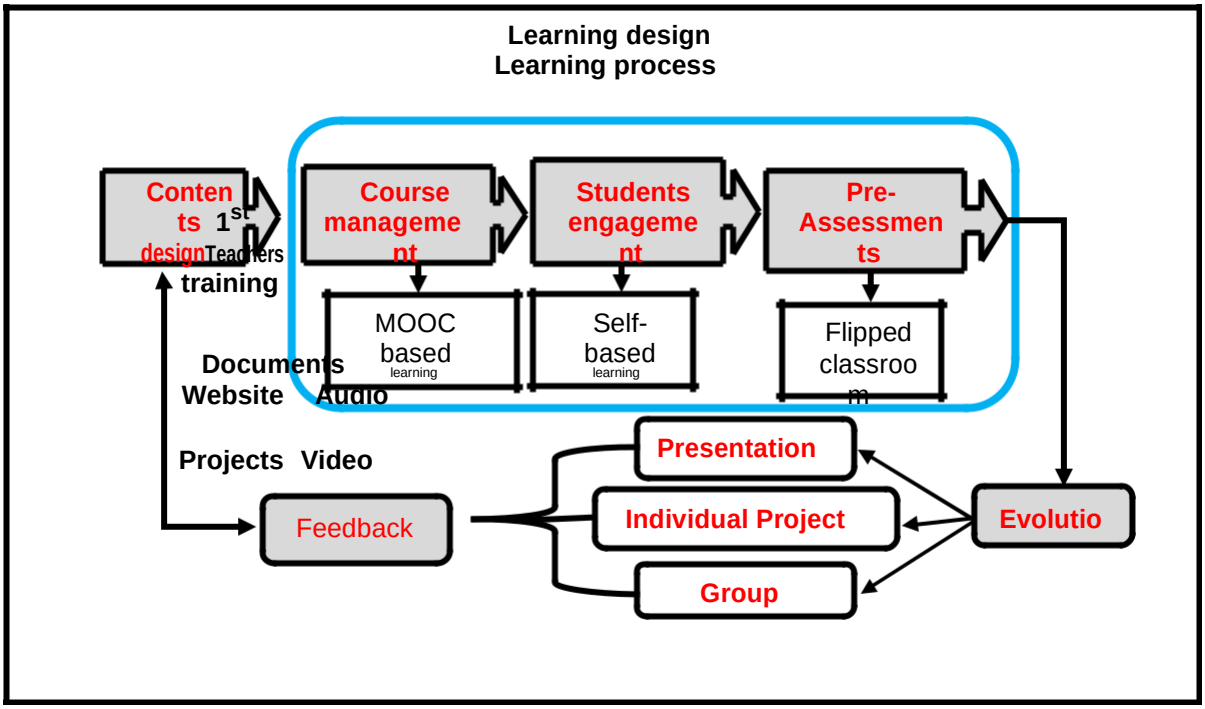



**Figure 1.** Structure of the implemented curriculum

In this approach, there was an integration of the three elements in MOOC based learning, which was the main source of learning content for students prepared by the teacher for students to study by themselves.

Self-based learning was one part of the practical aspects of the curriculum, the students were studying what the teacher had prepared for them and then they presented what they learn in the next step which was the flipped classroom as pre-assessment.

The flipped classroom was the stage of the final evaluation. The students would make their presentations in the class summarising what they had learned in self-study and then the final stage was the final evaluation through the individual and the group projects.

The data were then collected through a questionnaire prepared by the researchers and they were later classified into three sections:

- The first part examined the reasons for which students used tablets in their learning process.
- The second part examined whether the MOOC course was suitable for them at the secondary school level.
- The third part discussed the contribution of MOOC in learning Arabic for talented students.

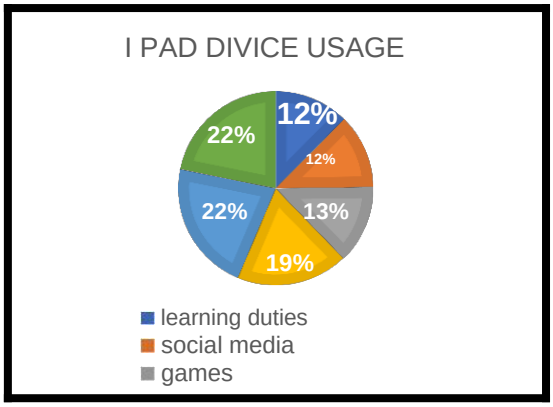
## 7. Data Analysis

The study involved 47 students (30 male and 17 female) and all of them studied the Arabic language through the prepared MOOC. Each student had an iPad and a laptop. Internet service was also available at the college and it helped them to access the contents of the school course and at home when they spend their weekend back in their hometowns. Students enjoyed using the Arabic MOOC course because it was a new experience for them. The data and responses from the questionnaire were keyed into the database to be analysed with NVivo software.

## 8. Results

In this study, the researchers tried to explore students' use of tablets and their percentage of use for educational purposes. Figure 2 shows that individual learning activities and Social media are the lowest proportion at 12%, but the highest percentage of usage is Internet search and homework. The rate recorded for homework is 22%, while the search for information was in the middle stage. The search for information reached 19%, and spending time on games reached 13%.

Figure 2 shows the number of hours of use of the MOOC by the respondents. The figure shows that 22% of respondents use less than 2 hours per week on the course, while 33% spend 4 hours on it in a week. The most frequently used respondents are 8% as they use it for more than five hours per week.



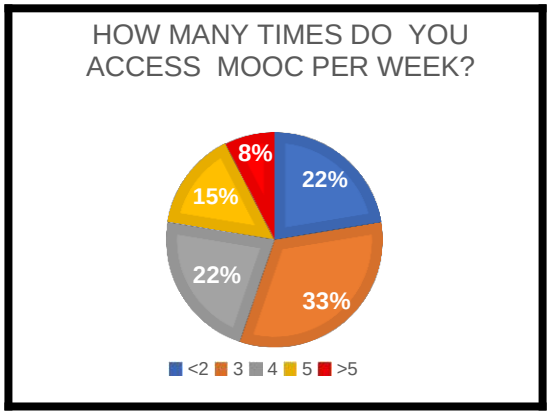
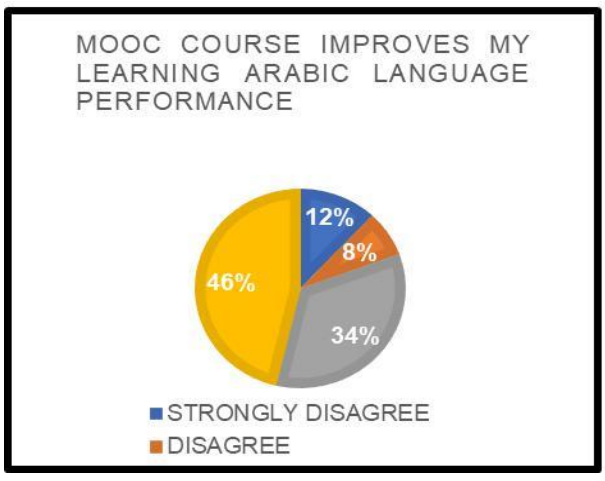




**Figure 2.** Use of the MOOC by the respondents

**Figure 3.** Effectiveness of MOOC

Figure 3 and 4 show the effectiveness of MOOC based learning. Figure 3 shows the respondents' opinions on MOOC's assistance in improving the Arabic language among gifted students. 49% strongly agree that MOOC course enhances the Arabic language among gifted students, while 8% among respondents strongly disagree that the MOOC course improves it. For pleasure and enjoyment in studying MOOC based learning, Figure 4 shows that 52% of the respondents agree that MOOC based learning is fun and 40% strongly agree with this idea, while none of the students strongly agree that MOOC based learning is fun. A semi-consensus of respondents that MOOC based learning is fun.



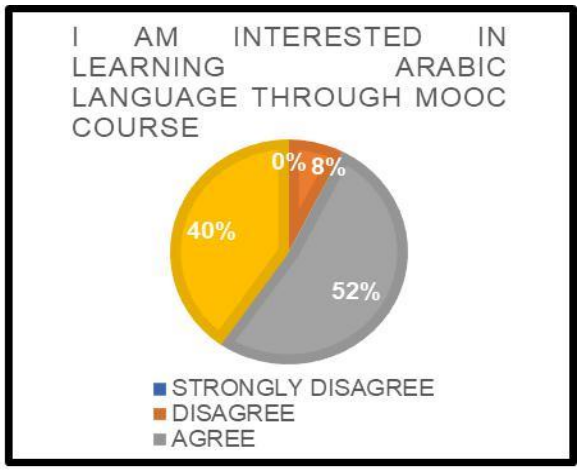




**Figure 4.** Effectiveness of MOOC based learning

**Figure 5.** MOOC for secondary school students

Figure 5, 40% of respondents strongly agree that MOOC is suitable for learning for secondary school students and 32% of respondents agree with this, while 8% do not agree with the MOOC suitability to teach secondary school students, In Figure 6, 51% of respondents strongly agree that MOOC helps students learn Arabic language and 32% agree that MOOC helps to learn the Arabic language while only 6% strongly disagree that MOOC helps in that.

**Figure no. 6**

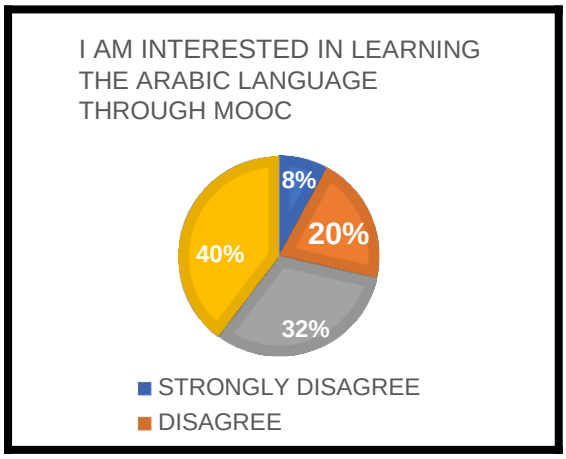
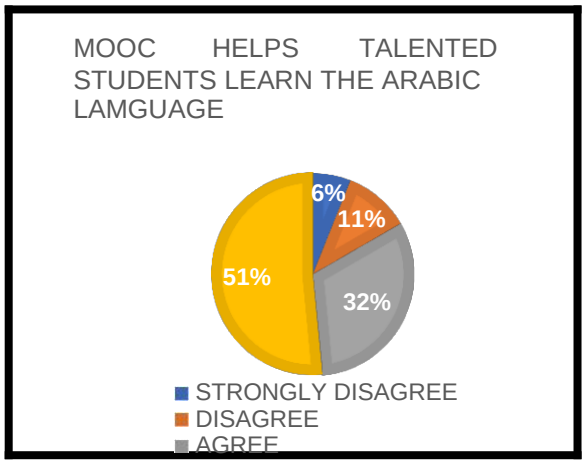



**Figure no. 7**




On the learning environment at College Permata Insan and its support for MOOC based learning, Figure 7 shows that 49% of respondents strongly agree that the learning environment at College Permata is supported MOOC based learning, 30% agree, while only 8% strongly disagree that The learning environment support MOOC based learning

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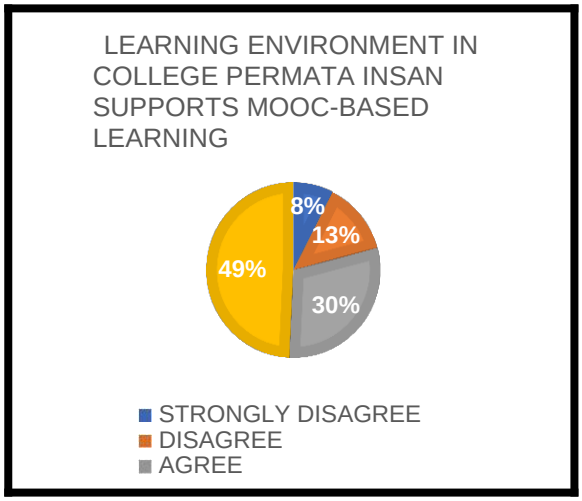
**Figure 8**




## 9. Discussion

This study investigated the student's acceptance level and attitudes toward the teaching and learning of the Arabic language in secondary school through MOOC-based learning.

Secondary school students generally accepted this learning approach at Permata Insan College. The students had shown positive attitude learning Arabic through MOOC based course. The majority of students in this experiment believed that this experience was useful and enjoyable.

However, few students were somewhat sceptical towards the effectiveness of MOOC-based learning in learning the Arabic language due to personal and individual reasons. Generally, the Arabic

MOOC course developed proven to be useful for the majority of the gifted secondary students in Permata Insan college. In short, a similar approach could be taken in developing more courses that would cover other subjects and topics being offered in the college. Most of them were opened towards the idea as they admitted of enjoying the learning experience offered through the Arabic language MOOC course.

This study also reveals that tablet devices are not used mainly for learning only, as they also use it for social media, capturing photographs and engaging in games. Even though the sample size is not huge enough for the study's findings to be generalised to all high schools in the country and the possibility that such findings may lack reliability, this study offers researchers basic preliminary data on which to build more discriminating future research on MOOC-based learning for secondary school students.

From the study, it can also be revealed that the integration between MOOC based learning, self-based learning and flipped classroom are excellent approaches to engage students and promote interaction among them in a high-quality learning environment and process.

## 10. Conclusion

The effort to enhance the teaching and learning Arabic has always been discussed by many scholars since the language is always associated with traditional approaches by the Arabic language teachers. This is quite normal among the traditional-minded Arabic teachers who believe in 'tried-and-trusted' teaching method of many of the Islamic teaching institutions. In Malaysia, Arabic language is closely related to the teaching of the Quran and hadiths and most of the teachers are generally known as '*Ustaz'* and '*Ustazah'* (teachers) who were educated and trained using the traditional teaching and learning methods which were generally suited the Islamic institutions in the Middle East that uphold the traditional philosophy of learning Arabic through the teaching of the Quran and Sunnah. Most of the Islamic Scholars in the established Middle East universities such as in Egypt, Jordan and Saudi Arabia are traditional teachers who do not implement the elements of technology in their teaching approach.

The younger generation of Arabic teachers are more willing to apply and implement the available form of technologies in their Arabic classroom. Thus, the young teachers and educators are introducing the new learning platform such as the massive open online course to give a new perspective to the teaching and learning of Arabic language to the young learners. While MOOC is popularly implemented for university courses, the introduction of such course to the secondary level students is quite a refreshing approach and considered advanced for the teaching and learning of Arabic language. Such a new teaching and learning concept gives Arabic a new dimension in its ability to engage the students with activities which are more interactive and in varieties. Students get the chance to explore the activities on their own and unlike the traditional approach that focuses on printed text and exercises, this different element is more interesting for them to deal with. Such ubiquitous learning platform will enhance the Arabic language learning experience for the more willing generation of young generations. With the availability of variety of devices such as tablets and modern laptops, learning and discovering Arabic language module online is the way forward for the teachers and students of the Arabic language. This study has proven that the implementation of MOOC would be able to enhance the teaching and learning of Arabic for now and the future. With more experience on such platform, language educators would be able to make Arabic language learning more meaningful and effective for their students.

## 11. Acknowledgement

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