



## B1 Level Undergraduate EFL Students' Acceptance of Moodle Technology

### B1 Seviyesinde İngilizceyi Yabancı Dil Olarak Öğrenen Üniversite Öğrencilerinin Moodle Teknolojisini Kabullemeleri

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**ABSTRACT:** There are a number of different alternatives as learning management systems to be used for desired teaching outcomes. Moodle e-learning platform is one of them. The aim of the study was to determine the acceptance degree of B1 level undergraduate students' of Moodle. To achieve this goal, Technology Acceptance Model was used. The data was collected through a 5-point Likert scale self-report questionnaire which aims to question technical support, perceived usefulness, computer self-efficacy, perceived ease of use, attitude and system usage. The participants of the study were 110 university EFL students. The results indicated that the students in B1 level perceived Moodle as an effective learning tool and there was a positive correlation between their acceptance of Moodle and English achievement. These findings are considered helpful to identify the pros and cons of Moodle and may help the teachers how to use Moodle effectively for their English classes.

**Keywords:** Moodle, e-learning, technology, EFL students, Technology Acceptance Model (TAM), Learning Management Systems (LMS).

**ÖZ:** Günümüzde çok sayıda Eğitim Yönetimi Sistemi bulunmaktadır. Bunlardan bir tanesi de Moodle teknolojisidir. Çalışmanın amacı, B1 seviyesinde İngilizceyi yabancı dil olarak öğrenen üniversite öğrencilerinin Moodle'u kabul edilişik düzeyini tespit etmektir. Bu maksatla çalışmada, Teknoloji Kabul Edilişik Modülü kullanılmıştır. Veri, beşli Likert ölçeği kullanılarak toplanmıştır. Bu ölçekle, katılımcılar Moodle teknolojisini; teknik destek, kabul edilen kullanışlılık, bilgisayar becerileri, kullanım kolaylığı, tutum ve sistemi kullanma konularında değerlendirmişlerdir. Çalışma B1 seviyesinde 110 üniversite öğrencisiyle gerçekleştirilmiştir. Araştırmanın sonuçları, katılımcıların Moodle teknolojisini faydalı bir eğitim yönetimi sistemi olduğunu düşündüklerini ortaya çıkarmıştır. Bunun yanında, öğrencilerin Moodle'ı kabul edilişik seviyeleri ile İngilizce başarıları arasında olumlu bir ilişki bulunmuştur. Çalışmanın sonuçları Moodle teknolojisinin, B1 seviyesindeki üniversite öğrencilerine göre olumlu ve olumsuz yanlarını ve öğretmenlerin Moodle teknolojisini nasıl daha etkili kullanmasını açığa çıkarması bakımından önemlidir.

**Anahtar sözcükler:** Moodle, e-öğrenme, teknoloji, İngilizce Öğrencileri, Teknoloji Kabul Edilişik Modülü, Eğitim Yönetimi Sistemleri.

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## Introduction

Developing technology gives the educational policy makers and teachers the chance of using different teaching tools in the classrooms. Among the educators, there is a tendency to integrate the new technologies to teaching environment. Thanks to these innovations, the teachers both have the possibility to differentiate their teaching materials and offer their students the required infrastructure that will make a positive effect to the desired teaching outcomes.

In Turkey, there is always a desire to reach a better language education system at every level of schools. For example, with the new system of 4+4+4 in 2012-2013 school years, English language teaching started in the second grade of primary school. Now there is another attempt for the language education system in secondary schools beginning 2015-2016 school years. The plan is that there will be a language prep year in the fifth grade of the secondary school. At the fifth grade, the students will mainly get English language training and as a result of this, the learners will have the chance of fully learning the target language.

On one hand, the educational authorities try to provide enough teaching time, effective course books and well-trained English teachers to the institutions. On the other hand, new technologies are integrated to the language teaching process. Universities also try their best to support the country's language training needs by involving different e-learning tools to their curriculum.

The budget spent on educational technologies is so high that it is essential to get the desired outcomes. Otherwise, the money used for the students' success will be just a waste of budget. For developing countries, like Turkey, the budget, time and man power should hit the target to reach to and compete with the developed countries.

Undergraduate students of this technology are highly interested in the new innovations and internet. So, to use the internet for educational purposes is a huge step for attaining the teaching objectives. If the intend of overlapping the students and new technologies, like Moodle (Modular Object-Oriented Dynamic Learning Environment), on the same floor is carried out, it will be more likely to have well-trained new generations and achieve the long-run teaching goals.

According to CEFR (2001), B1 level students are independent learners of languages, so in this research, B1 level undergraduate students were chosen to determine these independent learners' acceptance of Moodle. A1 and A2 level learners are basic users so they have trouble in reaching appropriate level materials. C1 and C2 level learners are proficient and master users of the language so they can easily have an access to authentic materials. So, the main concern of the study is B1 level. Technology Acceptance Model (TAM) was adapted for this study, since it is an effective evaluation tool for the new methodological and technological innovations of technologies in terms of perceived usefulness and perceived ease of use (Shroff et al. 2011), like Moodle, (Sanchez and Hueros, 2010; Davis, 1989).

In today's information and technology age, it is necessary to integrate innovations to the teaching process. After applying new technologies, it is also a vital phase to determine whether they reach their aims of usage. Moodle e-learning technology tool offers too many teaching materials like a huge database, lessons, assignments, workshops, chats, forums, news, glossary, wikis, exams, quiz, survey, feedback, and many relevant links for the students. With the intent of finding out how effective Moodle e-learning tool is, this study investigate B1 level undergraduate students' acceptance of it. The findings of this study will give the educational authorities the opportunity of seeing the strengths and weaknesses of Moodle, the students' perception of it and how near they are to the teaching goals. Furthermore, the students' acceptance levels of Moodle and their English scores will be compared to find out whether there is a positive correlation between them.

### **Research Questions**

1. How do the B1 level undergraduate students accept Moodle e-learning technology?
2. Is there a correlation between B1 level undergraduate students' acceptance of Moodle e-learning technology and their English scores?

### **Literature Review**

According to Rice (2006), there were three major characteristics of Moodle: the first one was its static features or resources which the users could only read and (re)view but interaction was not possible for these content like reading texts, web pages, related links to files already uploaded in the course or links to content available on other web sites etc. These resources helped the students to find all the related or necessary content for the course on the same platform. Secondly, there were interactive features which allow students to interact with the course teacher, other students and the learning system such as assignments defined by the teacher and completed by students, online journals, interactive lessons, tasks and questions required the teacher's feedback. The third ones were the social features requiring student-to-student interaction and features like chats, blogs, forums, wikis, glossaries, peer-assessment workshops and messaging which require the teacher's supervision (Robescu, 2011).

Paragina et al. (2011) searched the benefits of using Moodle in teacher training in Romania. They found out that Moodle is a good choice in distance learning for teacher training and it provides teleworking chance for the trainers. They also defined their positive and negative conclusions on Moodle technology. To begin with their positive findings, Moodle allowed saving time and money and to be able to study at home or dorms was another advantage of the system. Thanks to more flexible time for studying, it increased learner autonomy, which is one of the important descriptors of CEFR. The tool also provided rapid integration of latest technical concepts and specialization without extra expense or business agreement.

As for Moodle's negative characteristics, according to Paragina et al. (2011), the system needed an appropriate level of computer self-efficacy which could be an obstacle

for some trainers. Without enough experience in telework, the learners may encounter with some difficulties while using the platform at their homes or dorms. Unfortunately, there was low interaction between the students, so the learners' motivation could be very limited as a result of low interaction and lack of real classroom environment. Technical and internet access problems could also be vital threats for an ideal teaching and learning process.

Costa et al. (2012) looked Moodle e-learning platform from 214 undergraduate and 63 master students' perspectives in Portuguese. Their findings revealed that the platform was mainly used as software to store teaching materials, despite of its great potential. However, the students accepted the significance of using Moodle to increase their success of the teaching and learning outcomes.

Technology acceptance was described as the provable willingness among a defined user group to make use of information technology for the tasks which was precisely designed to support, Dillon & Morris (1998, p.5). As for Technology Acceptance Model (TAM) Davis et al. (1989), used in this study, it enabled the researchers to explain the general acceptance and usage of new information technologies.

TAM focused on perceived usefulness (PU) and perceived ease of use (PEOU), (Sanchez and Hueros, 2010; Davis, 1989). Perceived usefulness can be seen as extrinsic motivational factor for the learner, and is considered as acceptance level of the learner to tend to use the information technology Davis (1989) and Davis et al. (1989). There are a number of studies proved the validity of Technology Acceptance Model like Shroff et al. 2011; Sanchez and Hueros, 2010; Hu et al. 1999; Davis, 1989; Davis et al. 1989.

The learners may not prefer to use a complex learning platform. So, how easy to use a new system is one of the key factors which determine user acceptance of the system and its success. The technology acceptance model confirms that the success of a system can be determined by user acceptance of the system, evaluated by three main factors: perceived usefulness (PU), perceived ease of use (PEOU), and attitudes towards usage (ATU) of the system (Davis, 1989).

Thus, the aim of this research is to look at the relationship between B1 level undergraduate students' acceptance of Moodle technology in terms of the technology acceptance model (TAM). In general, the technology acceptance model has gained empirical support for being persuasive in defining technology implementation in different contexts and with a variety of technologies (Gao, 2005; McKinnon & Igonor, 2008; Park, 2009; Sugar, Crawley & Fine, 2004; Teo, 2009). Therefore, TAM can be considered effective and useful for predicting and explaining user acceptance of information technology (Amin, 2007; Hu et al., 1999). In addition to B1 level undergraduate students' acceptance of Moodle technology, this study also intends to define the correlation between B1 level undergraduate students' acceptance of Moodle technology and their English language achievements.

## Research Methodology

In this study B1 level undergraduate students' acceptance of Moodle technology is examined to define how helpful and functional Moodle is. To meet these objectives in a most appropriate way quantitative method was used. A self-report questionnaire was used to gather data about the participants' perceptions of Moodle technology. Technology acceptance model (TAM) was used to describe the power of Moodle technology.

### Participants

The study was conducted in the second term of 2014-2015 academic years in Turkish Military Academy in Ankara. There were randomly selected 110 undergraduate students from four different departments to be able to collect data from wide-ranging settings representing different programs. However, the participants were chosen only from B1 level students who have laptop and access to internet, so they can easily access Moodle technology and use it to be successful in English language learning. This helped the researcher to collect data from an academically diverse sample of 110 B1 level undergraduate students (mean of their age = 22.4, SD = .721; males = 86; females = 24). Their English learning experience years ranged from 9 to 11 years (mean = 10.37, SD= .647).

The participants were particularly chosen from B1 level students since they are independent learners according to CEFR.

**Table 1.** Number of participants according to their departments.

| Departments             | Frequency | Percentage |
|-------------------------|-----------|------------|
| Computer Engineering    | 29        | 26.4       |
| Electronics Engineering | 26        | 23.6       |
| Business Administration | 30        | 27.3       |
| Sociology               | 25        | 22.7       |
| Total                   | 110       | 100        |

### Data Collection Instrument

The data was collected with the help of a 5-point Likert scale self-report questionnaire which aims to question technical support (TS), perceived usefulness (PU), computer self-efficacy (CSE), perceived ease of use (PEOU), attitude (A) and system usage (SU). The questionnaire used in this research was adopted from Sanchez and Hueros, (2010); Davis, (1989).

There are 28 items in the questionnaire and the rating system for the study is like this; 1 = never true; 2 = rarely true; 3 = sometimes true; 4 = often true; 5 = always true. The Cranbach's alpha for the questionnaire is 0.84 and greater than the 0.7 threshold, above which reliability is accepted satisfactory. 0.84 value of Cronbach's alpha for the

questionnaire shows that the instrument is reliable and internally coherent enough to be used (Sanchez and Hueros, 2010).

**Table 2.** Cronbach alfa values of the components of the questionnaire.

| Components    | perceived usefulness | perceived ease of use | attitude | system usage | technical support | Mean of Cronbach alfa |
|---------------|----------------------|-----------------------|----------|--------------|-------------------|-----------------------|
| Cronbach alfa | 0.91                 | 0.90                  | 0.86     | 0.83         | 0.70              | 0.84                  |

Cronbach alfa values were adopted from Sanchez and Hueros, (2010).

### Findings and Discussions

In this section, the results of the study are discussed. The results have been presented following the order of the research questions. The data was analyzed with SPSS 23.0 package program.

#### 1. How do the B1 level undergraduate students accept Moodle e-learning technology?

The primary aim of the study was to determine general Moodle technology acceptance degrees of B1 level undergraduate students. In doing so, it would be easy to say whether Moodle platform is a good way of learning English for B1 level EFL students or not. The questionnaire data were analyzed using SPSS and subsequent data analyses were carried out using One-way ANOVA. First of all, technical support, perceived usefulness, computer self-efficacy, perceived ease of use, attitude will be discussed. As seen in table 3, the participants' overall perception of Moodle e-learning tool, regarding the variables above, is pretty high ( $M = 4.002$ ,  $SD = .573$ ).

**Table 3.** B1 level Undergraduate Students' general acceptance of Moodle.

|                                 |                | Technical Support | Perceived Usefulness | Computer Self-efficacy | Perceived Ease of Use | Attitude | System Usage |
|---------------------------------|----------------|-------------------|----------------------|------------------------|-----------------------|----------|--------------|
| Computer Engineering<br>N=29    | Mean           | 4.063             | 4.276                | 3.908                  | 4.241                 | 4.448    | 2.571        |
|                                 | Std. Deviation | .513              | .560                 | .516                   | .499                  | .530     | .715         |
| Electronics Engineering<br>N=26 | Mean           | 3.436             | 3.641                | 3.526                  | 3.894                 | 3.606    | 2.21         |
|                                 | Std. Deviation | .508              | .542                 | .501                   | .515                  | .564     | .676         |
| Business Administration<br>N=30 | Mean           | 3.906             | 4.05                 | 3.822                  | 4.292                 | 4.192    | 2,568        |
|                                 | Std. Deviation | .460              | .534                 | .510                   | .556                  | .538     | .571         |
| Sociology<br>N=25               | Mean           | 3.953             | 4.073                | 3.847                  | 4.320                 | 4.240    | 2.72         |
|                                 | Std. Deviation | .461              | .531                 | .489                   | .537                  | .516     | .501         |
| Total<br>N=110                  | Mean           | 3.847             | 4.018                | 3.780                  | 4.191                 | 4.132    | 2.52         |
|                                 | Std. Deviation | .553              | .592                 | .533                   | .554                  | .624     | .666         |

It will be helpful to discuss the subtitles questioned in the questionnaire one by one. Technical support is the key factor that brings the students to the learning platform eagerly. If the learners are not alone to overcome system problems and get sufficient help, they will willingly use Moodle technology. Table 3 shows that technical support is approved by the B1 level EFL students ( $M = 3.847$ ,  $SD = .553$ ). Computer engineering students showed more agreement than other the students of other programs ( $M = 4.063$ ,  $SD = .513$ ). Surprisingly, electronics engineering students' approval of technical support is lower than their counterparts ( $M = 3.436$ ,  $SD = .508$ ).

Perceived usefulness has a significant influence on the students' attitude towards Moodle. It can be seen in the table that perceived usefulness is very high for the system ( $M = 4.018$ ,  $SD = .592$ ). The ratings are higher for the computer engineering students ( $M = 4.276$ ,  $SD = .560$ ).

Computer self-efficacy can be a block between the students and Moodle technology. If a learner sees himself/herself insufficient for the computer or learning system, he/she will keep away from it. Although the values for computer self-efficacy is high enough, it is not as high as other variables like technical support, perceived usefulness, perceived ease of use and attitude ( $M = 3.780$ ,  $SD = .533$ ).

An easy to use tool is more preferable than a difficult one, so perceived ease of use determine the EFL students' attitudes towards the system. The table says that perceived ease of use for Moodle e-learning platform is tenable with the highest score of the instrument ( $M = 4.191$ ,  $SD = .554$ ).

Attitude depicts the students' overall behavioral intention of using the Moodle technology. The table also demonstrates that B1 level undergraduate EFL students' acceptance level of Moodle technology is fairly high to keenly use the system for their English courses ( $M = 4.132$ ,  $SD = .624$ ).

As for the system usage, there were two statements in the instrument. The first one is "I use the Web-based system on a scale of 1- never to 5- a lot." The participants' replies to this item confirm that they 'often' use Moodle system ( $M = 3.110$ ,  $SD = .746$ ). The second item is "Hours I spend on the Web-based system, on a scale of 1-never to 5- a lot of hours". The findings of this statement illustrates that the B1 level students use the system almost two hours a day ( $M = 1.930$ ,  $SD = .586$ ).

In the light of the findings, technical support, perceived usefulness, computer self-efficacy, perceived ease of use and attitude affect B1 level undergraduate students' acceptance of Moodle e-learning technology positively. These factors have encouraging influence on the students' perception of Moodle platform. Therefore, these findings are consistent with some other researches like Mohammadi (2015), Tarhini et al. (2013), Sanchez and Hueros, (2010) and Venkatesh et al. (2003).

**Table 4.** Overall descriptive statistics of the items

| Questionnaire Items   | Mean | Std. Deviation |
|---|------|----------------|
| <b>Technical Support</b>  |      |                |
| The system provides assistance when there is a technical problem.                   | 3.76 | .801           |
| A hotline is available at any time.   | 3.93 | .601           |
| Enquiries by fax can be made when there is a technical problem.                     | 3.25 | .528           |
| E-mail enquiries can be made when there is a technical problem.                     | 4.15 | .432           |
| Web-based enquiries can be made when there is a technical problem.                  | 3.96 | .541           |
| The system offers good technical support.   | 4.03 | .417           |
| <b>Perceived Usefulness</b>   |      |                |
| The Web-based system helps me to learn more efficiently.                            | 3.80 | .571           |
| The Web-based system improves my academic performance.                              | 4.06 | .595           |
| The Web-based system makes my learning more effective.                              | 3.87 | .560           |
| The Web-based system makes it easier to learn at university.                        | 4.04 | .676           |
| The Web-based system gives me more control over my learning.                        | 4.11 | .564           |
| Overall, the Web-based system is advantageous for my learning.                      | 4.23 | .585           |
| <b>Computer Self-efficacy</b>   |      |                |
| I can access the contents of the Web-based system.                                  | 4.15 | .539           |
| I can freely navigate the contents of the Web-based system.                         | 4.15 | .522           |
| I can use the Web-based system without needing to be told how it functions.         | 4.02 | .488           |
| I can solve problems that arise on the Web-based system.                            | 4.05 | .548           |
| I can use the Web-based system if there are user manuals available.                 | 2.25 | .582           |
| Overall, I am able to use the Web-based system.                                     | 4.07 | .520           |
| <b>Perceived Ease of Use</b>  |      |                |
| Learning to use the Web-based system is easy for me.                                | 4.05 | .565           |
| It is easy to get materials from the Web-based system.                              | 4.35 | .517           |
| The process of using the Web-based system is clear and understandable.              | 4.13 | .592           |
| Overall, I believe that the Web-based system is easy to use.                        | 4.24 | .541           |
| <b>Attitude</b>   |      |                |
| Learning on the Web-based system is fun.  | 4.10 | .635           |
| Using the Web-based system is a good idea.  | 4.13 | .622           |
| The Web-based system is an attractive way to learn.                                 | 4.13 | .665           |
| Overall, I like using the Web-based system.   | 4.17 | .572           |
| <b>System Usage</b>   |      |                |
| I use the Web-based system on a scale of 1- never to 5- a lot.                      | 3.11 | .746           |
| Hours I spend on the Web-based system, on a scale of 1-never to 5- a lot of hours). | 1.93 | .586           |

2. *Is there a positive correlation between B1 level undergraduate students' acceptance of Moodle e-learning technology and their English scores?*

To be able to define the linear relationship between B1 level undergraduate students' acceptance of Moodle e-learning technology and their English scores, Pearson Correlation analysis was conducted. Table 5 demonstrates that there is a substantial correlation magnitude between the two variables. Pearson Correlation degree for the relationship is .810 so it is higher than the threshold of .70 above which the correlation level is sufficient.

This analysis confirms that there is a positive correlation between the EFL learners' perception of Moodle and their English scores. The more the students accept and use Moodle technology, the higher scores they get from English exams.

**Table 5.** Pearson Correlation between students' acceptance of Moodle and their English scores.

|                         |                     | Exam Results out of 100 | Mean of Likert Scales |
|-------------------------|---------------------|-------------------------|-----------------------|
| Exam Results out of 100 | Pearson Correlation | 1                       | .810**                |
|                         | Sig. (2-tailed)     |                         | .000                  |
|                         | N                   | 110                     | 110                   |
| Mean of Likert Scales   | Pearson Correlation | .810**                  | 1                     |
|                         | Sig. (2-tailed)     | .000                    |                       |
|                         | N                   | 110                     | 110                   |

\*\* . Correlation is significant at the 0.01 level (2-tailed).

Table 6 explains the descriptive statistics of EFL students' acceptance of Moodle and their English scores. Mean of the exam results of B1 level undergraduate = 77.70 and SD=8.013. To focus on the replies of the students to the questionnaire, the mean=3.864 and SD=.366.

**Table 6.** Descriptive Statistics of EFL students' acceptance of Moodle and their English scores.

|                         | Mean  | Std. Deviation | N   |
|-------------------------|-------|----------------|-----|
| Exam Results out of 100 | 77.70 | 8.013          | 110 |
| Mean of Likert          | 3.864 | .366           | 110 |

### Conclusion

This study examined B1 level undergraduate EFL students' acceptance of Moodle e-learning technology. The study was carried out with quantitative research design. The EFL students' opinions and perceptions were gathered with the help of a self-report questionnaire. Descriptive statistics were employed to analyze the data gathered from the questionnaire.

In this study, Technology Acceptance Model (TAM) was used. TAM theory recommends that there is a significant positive relationship between perceived ease of use and perceived usefulness which is consistent with the findings of the study (Davis, 1989).

The results showed that B1 level undergraduate EFL students perceive Moodle as an effective and sufficient learning tool and there is a positive correlation between B1 level undergraduate students' acceptance of Moodle e-learning technology and their English scores. The results of this study are considered to be helpful to identify the weak points and strong points of Moodle for B1 level Turkish learners of English and may help the teachers how to use Moodle effectively for their English classes.

To sum up, integrating a new technology is not enough to make difference. The learners' acceptance level of the new learning platform is the key factor that determines its success. Moodle is one of these new information and communication technologies integrated into foreign language education process. Moodle system has become an important alternative for providing students additional support and language materials.

### **Limitations and Further Research**

There are some limitations of this study that need to be considered. Firstly, a self-report questionnaire was conducted for the study. So the students' own beliefs and values may have an important impact on their acceptance of Moodle. In this study, there were 110 B1 level undergraduate EFL students from the same university in Ankara. A similar study can be conducted with larger participants, settings and levels from A1 to C2.

For future research, besides technology acceptance model (TAM), IS success model (DeLone, W. H., & McLean, E. R., 2003) or other similar models can be also used to determine overall achievement of Moodle.

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