



Yıl: 5, Sayı: 18, Aralık 2018, s. 1-12

# INESJOURNAL

ULUSLARARASI EĞİTİM BİLİMLERİ DERGİSİ  
THE JOURNAL OF INTERNATIONAL EDUCATION SCIENCE

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## STUDY INTO THE EFFECTS OF VIRTUAL LEARNING ENVIRONMENT ON PERSONALIZED LEARNING (INSTRUCTORS' VIEWS)<sup>3</sup>

### Abstract

The aim of this study is to determine and evaluate the views of instructors in various departments of Tertiary Education on Virtual Learning and its impact on Personalized Learning in classroom environment. We asked an open ended question to the participant instructors to obtain the data: What are the most important effects of Virtual Learning Environment on Personalized Learning?" We used a qualitative research method to evaluate and compare the views of instructors on the effects of Virtual Learning Environment on Personalized Learning. The research was carried out with the participation of ten instructors working in various departments of the Faculty of Education in Erzincan University. We concluded from the study that sharing the work of creating differentiated lessons, providing basic-skills practices, gathering feedback on learners' understanding, and delivering instruction by means of multiple forms of media applied in Virtual Learning Environment are of great importance to Personalized Learning.

**Keywords:** Virtual Learning, Personalized Learning, Classroom Management, Educational Technology.

## SANAL ÖĞRENME ORTAMININ KİŞİSELLEŞTİRİLMİŞ ÖĞRENME ÜZERİNE ETKİLERİNİN İNCELENMESİ (ÖĞRETİCİ GÖRÜŞLERİ)

### Özet

Bu çalışmanın amacı, Yükseköğretim çeşitli bölümlerindeki öğretim elemanlarının sanal öğrenmenin sınıf ortamında Kişiselleştirilmiş Öğrenim üzerindeki etkileri konusundaki görüşlerini belirlemektir. Verileri elde etmek için katılımcı öğretim elemanlarına açık uçlu bir soru sorulmuştur: Sanal Öğrenme Ortamının Kişiselleştirilmiş Öğrenmeye en önemli etkileri nelerdir? ". Öğretmenlerin Sanal Öğrenme Ortamının Kişiselleştirilmiş Öğrenim üzerindeki etkileri hakkındaki görüşlerini değerlendirmek ve karşılaştırmak için nitel bir araştırma yöntemi kullanıldı. Araştırma, Erzincan Üniversitesi Eğitim Fakültesi'nin çeşitli bölümlerinde görev yapan on öğretim elemanının katılımı ile gerçekleştirilmiştir. Çalışmamızdan farklılaştırılmış dersler oluşturma, temel beceri uygulamalarını sağlama, öğrencilerin anlamalarına dair geribildirimleri toplama ve Sanal Öğrenme Ortamında uygulanan çoklu medya araçları aracılığıyla eğitim verme çalışmalarını paylaşmanın Kişiselleştirilmiş Öğrenme için büyük önem taşıdığı sonucuna varılmıştır.

**Anahtar Kelimeler:** Sanal Öğrenme, Kişiselleştirilmiş Öğrenme, Sınıf Yönetimi, Eğitim Teknolojisi

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<sup>3</sup> This study was presented at the conference IAC 2018 March in Budapest. It has not been published.

## INTRODUCTION

As the technology has dominated all aspects of education, interest in virtual classes all over the world, particularly in populated countries, has increased in full extent. Virtual classes are the environments that allow classroom instruction on an instructor-led online basis. Apart from being a very important component of the distance education system, virtual classrooms are used in many different fields such as distance education, seminar activities, interactive laboratory applications and simulations, presentation of various software, video conferencing and online consultancy.

With the rapid development of technology, computer and internet usage, a necessity for individuals, has gained a new dimension with the expansion of mobile technologies. Learning activities such as training and practice in the field of education can also be carried out of the classroom environment, through the easy accessibility and portability of mobile technologies. Palmtop computers, mobile phones and increasingly popular tablet computers can be used in learning-teaching processes with the support of educational institutions. One of the most important reasons of increasing interest in mobile education and distance education programs through the widespread use of computers and the internet is that the individual is free as time and space. It is a great convenience and freedom for the individual to start the learning process at any time and place and to intervene in the training process at any time.

### Virtual Learning Environments

With the increasing use of computers and mobile devices, the interest in virtual learning has increased all over the world. What makes virtual learning more advantageous than conventional learning is the widespread use of mobile devices in learning and teaching process. Virtual learning environment covers both mobile learning and e-learning together. Mobile learning is a distance learning model where learning is carried out with mobile tools. It is a form of learning that allows access to content without communicating with other learners. M-learning environments have shown that it is possible to carry out education process with mobile devices without a fixed place. M-learning is similar to e-learning in terms of being independent of time and space, providing equal opportunities in education and being student-centred.

In the definition of Virtual Learning Environment, the concepts such as personalization, portability and learning everywhere at any moment have turned out to be favourable in educational environments (Ensminger et al., 2004; Green et al., 2005; Chou and Liu, 2005; Kayalar and Kayalar, 2018). The advantages of mobile tools used in classroom activities to the learners are portability, accessibility and connectivity. As can be understood from the term, the mobile vehicles are portable, which can give a significant advantage to the students in using the textbook in an integrated manner. In addition, mobile learning materials such as mobile internet connection and access to multimedia resources and display feature of mobile devices have also contributed to the realization of virtual learning within the classroom. In this context, mobile tools used in teaching and learning process are thought to help learners to reach information in the fastest and most effective way.

### Personalized Learning

Each learner has a different background, strengths and weaknesses, sense of responsibility, level of motivation, different studying habits and learning style. The learning style refers to personal learning path. The learning style is as individual as the fingerprint. There

are not even two learners with the same learning style. Everyone's learning is different in type, speed and capacity. Everyone can learn when appropriate learning to his style is provided. If a learner undergoes a speed, rhythm or attention period that is inappropriate to him, learning process occurs at a very low level or never takes place.

Teacher's guidance is very important to reveal a learner's abilities and learning capacity (Güler Arı, 2016). The teacher should organize the training programs and environments by considering the differences among the students. Each teacher has different ways of teaching. Some give importance to principles and concepts, some to applications, while others to memorizing, even to meaning. However, the conformity of the instructor's teaching style with the student's learning style influences learning process. Learner should be at the centre of the education programs. Educational programs can be based on human-based approaches, and personalization of learning can be provided for the learners to develop interest to courses. For this reason, appropriate teaching methods and techniques should be selected for the learners to achieve maximum level of learning. The researchers studying on this issue argue that this is possible with providing personalized learning environments like virtual learning environments (Aşıroğlu, 2016).

The idea of a learning environment where individual differences are taken into consideration plays an important role in the development of personalized learning environments. These individual differences can include many features such as learning styles, learning speed, abilities, expectations, readiness, experiences and motivations. At this point, personalized learning environments provide a more flexible structure, providing learners with an environment of their own speed and learning styles at the time and place they want. Today, while designing personalized learning environments, many new applications such as semantic web and ontology are used. Systems developed using these technologies allow individuals to learn their learning styles according to their speed, knowledge level and experience.

In a traditional learning environment, a learning environment and material are prepared and presented to many students, while in personalized learning environments, each student is provided with one or more learning environments, content and course material, and the student is able to learn individually in the appropriate environment. While there are many restrictions on learning environments and conditions, there are no restrictions such as time and space in personalized environments. While the traditional learning environment is designed according to the average student level, personalized environments can be designed for each student according to their learning speed, style, skills, knowledge, etc. In traditional learning, the curriculum is designed according to the teacher, whereas in personalized learning environment, personalized environments are taken into consideration. Programs are prepared and presented to students based on their readiness, experience, knowledge and expectations (Şahin and Kışla, 2013).

### LITERATURE

Sucu et al (2015) studied Edmodo which is an application for the use of Social Network Sites in education. Edmodo enables the use of the power of social media in the education and training environment. It provides a safe environment for teachers and students in many aspects such as collaboration, feedback, personalized learning and so on, and provides students with

time and space independence, exchange knowledge and ideas, and provides students control through its own features.

According to Garrett and Jackson (2006), Chayko (2008), Ađca and Bađcı (2013), and řahin and Bařak (2017), through mobile accessible systems, students can gain more freedom of work than their needs and preferences. In addition to creating a sense of co-ordination in the environment, mobile devices enable students to move learning environments and communication tools into real-world environments more easily. This flexibility enables the exchange of personal experiences and integration of knowledge into the daily lives of the students, while providing dialogue with the instructor and other students and providing information at the desired time and place. It also allows students to get feedback and evaluate their development.

Ally and Blazquez (2014) argued that the mobile education of the future will narrow the global virtual field and enable students from different parts of the world to produce and disseminate information.

In a study by Botha et al (2009) in which global education was researched using students from different cultures through mobile technology, it has been concluded that the process of production, sharing and collaborative work have improved student relations and developed common understanding, and that the process of knowledge production and sharing with different cultures has improved intercultural dialogue. Further research is needed on how to design and present learning by considering the transformation of education using M-learning, taking into account the cultures and values of students.

Blom (2000) defined Personalization as the process of changing the functionality, interface, information content or differentiation of a system to increase the suitability of the individual to his/her personality.

Kıřla and řahin (2015) defined Personalized Learning as the adaptation of pedagogy, curriculum and learning environments according to different learning needs and wishes of the learners.

According to Özarıan (2010), when the subject is examined in the context of learning, Personalized Learning is to provide learning experiences based on the interest and learning style of each learner. Personalized learning aims to provide learning experiences that take into account individual differences, avoiding the idea that a single model is suitable for all.

Kayalar (2016) demonstrated the advantages of virtual learning environments and their impact on personalized learning environments and argued that the students feel with the convenience of their homes, free movement and repeating the lessons on their own computers rather than sitting in disturbing desks. According to him, the student can have slow or fast learning skill and different learning style, so the each student's competence for learning is not the same as the other ones'. However, spontaneous acceleration learning for slow learners, reduced stress, and increased satisfaction can be provided by virtual environments. In addition to advantageous of virtual learning environments, this facilitates physical accessibility challenges for students with limited mobility.

## MATERIALS AND METHOD

### Problem Statement and Purpose

The purpose of the research on the Effect of Virtual Learning Environment on Personalized Learning is to determine the views of ten instructors teaching in various departments of the Faculty of Education in Erzincan University, and to appreciate the importance of Virtual learning environments and Personalized Learning Environments for the students who take some courses in virtual environment. We aimed to find out reasonable and satisfying answers to our problem statement. To get necessary data we asked the instructors “What are the most important effects of Virtual Learning Environment on Personalized Learning?”

### Methods and Research Design

In the study, qualitative research method was used to determine and evaluate the views of the instructors about Virtual Learning Environments and its importance on Personalized Learning Environments. The qualitative research method is a type of research in which qualitative methods of data collection such as observation, interview and document analysis are used, perceived, and is a process for realizing events in a natural environment in a realistic and holistic manner. In the study focus group interview was preferred, as this kind of interview is a suitable technique, especially if the perspectives of different groups on a subject, or how people's thoughts and feelings on a particular subject are varied should be researched (Krueger and Casey, 2000). We conducted this research with the views of the instructors teaching the courses such as English Language, Turkish Language and Turkish History of Revolution online at various departments of the Faculty of Education in Erzincan University. For this reason we relied on case study design for the purpose of our enquiry.

### Participants

We included ten volunteer instructors in our study, who work in various departments of the Faculty of Education in Erzincan University, Turkey. As shown in Table 1, the youngest participant is twenty-nine years old, with four years of teaching experience at the department of Turkish Teaching, teaching Turkish Language by online, while the eldest is fifty years old, with twenty-four years of teaching experience at the department of Social Sciences Teaching, teaching Turkish History of Revolution by online. We obtained the data from ten instructors who admitted to be involved in the interview for the research. The participants were asked whether they were contented to answer to the questions, and then we applied the tool. The names of the teachers are coded with letters and numbers.

Table 1: Statistical data as to Gender, Age, Academic Field and Years of Experience

GENDER		AGE		ACADEMIC FIELD		EXPERIENCE	
Male	7	25-30 years	2	English Language	6	1-5 years	1
Female	3	31-35 years	4	Turkish History	2	6-10 years	4
		36-40 years	2	Turkish Language	2	11-15 years	3
		Over 40 years	2			over 16 years	2

### Research Instrument

In the study, we used the tool with semi structured interview form to gather data from instructors teaching at the departments of English Language, Turkish History of revolution and Turkish Language in the Faculty of Education and the College of Foreign Languages. We asked an open ended question to the participants. The question was designed in accordance with the main characteristics of Virtual Learning Environments and Personalized Learning Environments. The question of the interview was formed by the final judgement of three experts in the field.

### Data analysis

The data were obtained through one by one and face to face interview with the participants in their workplaces. The interviews were conducted on a voluntary basis. The participants were chosen among the instructors who teach English Language, Turkish Language and Turkish History of Revolution online. The replies to the interview question were matched, abstracted and made into pure data. The data were then transferred and digitalized into computer in order to form digital data. The final data formed the main findings of the study.

### FINDINGS

In order to get satisfying replies to our question “What are the most important effects of Virtual Learning Environment on Personalized Learning?” the statements of the participant instructors were abstracted and filtered in a way we could keep their deep and main meanings of the statements. The first instructor’s views on virtual learning environments are as follows:

(A. Instructor of English Language with ten years of experience, male at 32 years of age)

“....

*Virtual learning environments are mediums that allow classroom instruction on an instructor-led online basis. Apart from being a very important component of the distance education system, virtual classrooms are used in many different fields such as distance education, seminars, interactive lab applications, simulations, presentation of various software, video conferencing, and online consultancy. With these types of facilities, it is possible for the instructor and the students to connect each other in different environments at the same time.... In terms of personalized learning, the student gives more attention to the virtual educational system, and can re-follow the contents, thus understanding them better...”*

Today's information is so intense and rapidly changing that the need for personalized knowledge of the business and education world and the environments that allow it to be transmitted has become evident. In recent years, many universities and many major trading companies around the world have been required to provide virtual learning environments to educate their students and their employees (De Bra, 1996; Ebner et al. 1999). The fact that individuals have different personality traits and different learning styles, processes the knowledge in different forms, and prefer to use different sources of information cause different learning needs when they use the same environment.

From the statements of the instructor with whom we interviewed in the study, we can argue that virtual learning environments are needed for learners to understand the contents of the courses better, and if they have not understood the subject, they can watch and listen to the

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course again and again whenever or wherever they want. This possibility creates a big chance for them to be successful in learning process.

The second and third participants' views on virtual learning environment and its effect on personalized learning are as follows:

(B. Instructor of Turkish Language with thirteen years of experience, male at 39 years of age) “...*Learning is more feasible in the virtual learning environments than traditional ones. For example, as a professor, I may not have time to teach in traditional classroom due to the high level of workload, but may allow time to teach in virtual environments, because VEs create a time-independent process. On the other hand, while it is possible to transfer knowledge to distant places all over the world, it is impossible with traditional ones.... In the perspective of personalized learning, it can be said that the student is an active participant in virtual learning process. It directs activities through options. The student who moves in this way is not only physical but also mentally exist in learning environment, thus learning becomes easier.*”

(C. Instructor of English Language with six years of experience, male at 30 years of age) “... *As in its nature, virtual learning environments are suitable for remote and self-learning method. It is not an alternative to face-to-face training, but rather a complementary, supportive, and developing teaching method. When combined with face-to-face teaching methods, it further enhances the effectiveness of learning.... Each individual has a different rate of learning, so teaching should be adapted to the individual speed of learning. Individual characteristics should be considered in evaluating student performance and providing appropriate feedback.*”

Virtual learning allows the student and instructor to decide their time of learning and teaching, thus avoiding daily work-load. He can access to learning wherever internet access is available. The e-learner can learn at his/her own learning speed as he/she wants, reaching the trainings and information repeatedly. Besides, the e-learner can get continuous access to instructors and specialists in environments such as e-mail and forums. Virtual learning environment saves training costs.

From the statements we can argue that virtual learning environments go with constructivist approach, in which the e-learner can develop his/her skills in an interactive way. Through personalized learning, e-learners can reserve certain times of the day for training. They do not condition themselves to sit on the computer for hours, but the planned training sessions will increase success. For example, trainings can be continued every day for 1 hour. The learners in virtual learning environments choose a time when course time is not so busy, less intensive day and less training session. While they are studying, they try to distance themselves from the outside as much as possible such as calling phones and the voices of their friends.

(D. Instructor of Turkish History with seven years of experience, male at 31 years of age) “.... *Virtual learning environments offer many opportunities for teachers and students. VLEs have a lot of means such as pedagogy, methodology, practices, teacher role, interaction, self-learning environment especially on teaching and learning languages. In addition, multi-user channels, learning materials are just one way of communicating between teachers and students. The constructivist approach is combined with virtual learning environments to enable students to develop their skills in an interactive, social and autonomous way.... From the point of*

*personalized learning, the student can see whether he is doing it right or wrong in any stage of the learning process, and can learn to analyse the causes of falsifications and evaluate them....”*

The main aim of the virtual education system is to make the target beneficiaries learn better. In this respect, it is important in the construction of the virtual education system how to integrate the learners and teachers in terms of time and space, how the learners-teachers-contents interact with each other mainly in terms of learning targets, such as the characteristics of the target group, communication facilities, financial issues, company / institution policies. Pedagogy, methodology, educational practices, the roles of the teachers in learning process, interaction with the students and parents, and self-learning environments such as library, studying rooms at dorms or houses are all the means of virtual learning environments.

(E. Instructor of English Language with six years of experience, male at 32 years of age) “... *Virtual Learning environments allow more widely use of pedagogical strategies than traditional education and training activities. The modern, social constructivist pedagogy approach provides self-reflection and critical awareness with probing-based discussion groups, blogs, "podcast" publications and wikis. Mobile learning has come into use by providing e-learning content from mobile phones and personal digital assistants..... As regard personalized learning, three-dimensional experiments and exercises arouse curiosity in students. The curiosity increases the learning energy of the student. As a result, permanent learning takes place in this environment”*

As Rovaii (2001) and Thackray et al. (2008) stated in their studies, virtual environments – distant education, online education, social media, e-mail and mobile education facilities enable instructors to provide students with experiences that seem to be difficult, inadequate, or impossible in the physical world. Virtual worlds provided opportunities for students to gain knowledge from various sources, to practice decision-making skills, and to understand their own educational cultures through interaction with people from other cultures. It creates curiosity for learning as the knowledge is under their fingers. From the statements of the instructors, it appears that constructivist pedagogy for self-reflection and personalization in learning is intimately linked with virtual environment.

(F. Instructor of Turkish Language with four years of experience, male at 29 years of age) “ ... *If the school is integrated in computer technology and online education is available, then students can access Virtual Learning Environments at home by connecting over the internet. They can prepare for the next day's lesson. In parallel with the course they can work in the school, they can refer to subject descriptions in e-learning or mobile learning system. With animations and interactive activities, they can learn lessons easier and more permanently. Since the Virtual Educational Systems are parallel to the school, it becomes easier for the parents to follow the course together with the student. Students can easily find and improve the study subjects given in the course book as homework from the Virtual Education Systems. Because it is compatible with the curriculum, it is a useful resource that can be trusted by the parents, which overlaps with the level of the student. The student can work by repeating as much as he wishes at his own learning speed....”*

Individuals carry different personality traits, have different learning styles, prefer to use information in different ways, and use different sources of information, which gives rise to



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different learning needs while using the same environment (Bra, 1996; Ebner et al, 1999; Somyürek, 2009).

Virtual learning environment is an application that enables teachers and learners to do certain important and useful things and interactive practices like sharing files, downloading information, e-mailing, using discussion boards, undertaking tests and surveys, sharing information, organizing time and resources, linking the teaching and learning applications and activities with management information systems. All these activities in virtual education system have different effect on different learners as their learning styles and skills are different and their daily work-loads are not the same. They should do these tasks in any time and place more convenient with their conditions. Therefore, virtual learning environments have significant effects on personalized learning.

### CONCLUSION AND SUGGESTIONS

Virtual learning environment is a necessity that the learners and the instructors are separated each other for some reasons such as physical distance, certain hindrances for face-to-face learning, unavailability of course environments, unequal learning skills of the students and the need for personalized learning environments. Techniques such as audio, video, computer data and publications that take place in traditional education are the intimate link between virtual education and traditional education. These educational programs offer new educational opportunities in addition to the available ones for adults. This system means to increase the knowledge in the workplace and learning environment and to continue their education for those with physical disabilities.

Virtual learning environments such as online training, distant education, mobile learning, e-learning, provide significant convenience for the instructors and the students in the same way. A well-designed virtual environment can help learners achieve a more lasting learning experience by enabling them to easily reach different live resources or non-existent resources, communicate with each other or with the instructor who helps learning. The communication is achieved at every situation, at any time and any place. The number of distance education applications designed according to such learning approaches is increasing rapidly. One of the main reasons for this increase is the success of these approaches. From this point of view, virtual learning environments have profound effect on personalized learning or personalization of learning.

The learner-centered contemporary approaches and more focused learning styles and preferences have to be taken into account in e-learning environments as well as in face-to-face learning environments (Çardak, 2011). It seems unlikely that a single teaching strategy or model would be equally appropriate to all learners with different learning characteristics. For this reason, in e-learning environments, it is necessary to take into account the learning styles of the learners, their learning preferences and to provide the learner with the qualifications to meet the learner's needs. Models developed for adaptive, personalized learning form the basis of future intelligent learning management systems. In this context, it is thought that the study of adaptive, personalized e-learning studies can be used to develop more advanced models and programs.

Along with the developments in e-learning and m-learning technologies, adaptive environments should be designed and developed, taking into account the differences between

users and differentiating according to the personal needs of each user. For all users, environments that offer the same content and navigation structure may be insufficient to meet the needs of different individuals and to meet individuals' changing needs over time. For this reason, it is necessary to prepare content suitable for cognitive styles and to present a content-dependent student with the appropriate content.

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