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A Qualitative Research on Competency-Based Learning Management System and Its Effectiveness

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Abstract. This research aimed to reveal the effectiveness of the Akhi Competency-Based Training Project (ACBTP, called AYDEP), a distinctive learning management system based on user views. The research was designed as a case study, one of the qualitative research methods. The study group of the study consisted of the first-year pre-service teachers and instructors in the Classroom Education Department of a state university in the fall semester during the 2018-2019 academic year. A semi-structured interview form was used as a data collection tool. The data were analyzed with the content analysis method. The results showed that, in general, the system was used for course planning, assessment-evaluation and communication purposes. While the system facilitated planning, supported communication and was easily accessible, it had some limitations as well. Providing user support throughout the process in such systems can increase effectiveness.

Keywords: Learning management system, teacher training, competency-based training

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Introduction

Technology, which has become an integral part of our lives, affects education in its entirety (Gloria & Oluwadara, 2016). While technology is becoming increasingly common in the education sector, its use has become a requirement in teacher training as well and has completely transformed the concept of teacher training (Sendag & Gedik, 2015). The increase in the duration of technology use has made technology a motivational tool for students. On the other hand, providing education in line with the interests and expectations of students who have grown up with technology has made it a necessity for teachers to use technology competently. Through technology, teachers can contribute to their professional development and communicate with their colleagues and students (Gloria & Oluwadara, 2016). However, teachers' beliefs regarding technology use, their unwillingness to change, and established classroom practices can prevent technology integration into classrooms (Ertmer, 1999). For this reason, it is important to provide teachers with training on the use of technology, starting with pre-service training. Many countries integrate practices for the effective use of technology in teacher training programs (Kimmons et al., 2015). Having rich experiences in these practices contributes to pre-service teachers' professional development. Technology-intensive applications make important contributions to the techno-pedagogical development of pre-service teachers. In this way, it becomes easier for teachers to follow technological developments and reflect them on their teaching practices.

Elimination of requirements, such as time and space in learning is an important development that emerged with the use of technology in education. The concept of electronic learning (e-learning) is an important addition to the educational literature, thanks to technology. E-learning environments, which are developing more and more with the possibilities offered by technology, offer distance and interactive learning opportunities to users. Also, reasons, such as economic competitiveness, lifelong learning opportunities, social equality and access, better training options, cost-effectiveness and geography are among the reasons for preferring distance learning, open learning and electronic learning environments (Bates, 2005). In addition to these environments, the emergence of learning management systems based on technological infrastructure is another significant development in training. A learning management system is a complex system in which e-learning, computer and internet technologies are used together (Erdogdu & Sahin, 2018). Many instructional processes are carried out more effectively and bring a certain discipline to the teaching process using these systems in educational environments.

Learning management systems are software developed to manage learning activities (Altiparmak et al., 2011). Many operations and procedures used in the traditional learning processes can be implemented faster and more securely through learning management systems. The main functions of learning management systems, which offer a comprehensive and systemic process to educational environments in the recent information age, are recording student learning, course planning, teaching and evaluation in addition to their secondary functions (communication, keeping students'

general data, school staff information and system management) (Reigeluth et al., 2008). Learning management systems are learner-oriented systems, monitoring the learning needs and outputs of the individual over periods of several years (Simonson et al., 2008). These systems also include the management of course content (Ates & Guyer, 2016). The learning management systems allow operations, such as the management of all kinds of information and documents related to courses, keeping records of all types of data related to students, sharing course content, assigning homework and exams, giving feedback on assignments and exams, creating a discussion environment and taking reports (Altiparmak et al., 2011). Carrying out these processes over the system has many advantages for administrators, teachers and students. On the other hand, learning management systems with dynamic structures can be developed according to the needs of specific institutions or individuals and may include different aspects. Systems aiming to achieve learning goals and increase student achievement have the potential to positively affect the quality of the education process as a whole.

Akhi Competency-Based Training Project as a Distinctive Learning Management System

Akhi Competency-Based Training Project (ACBTP, called AYDEP) is a distinctive learning management system that aims to increase the quality of education and adopts a competency-based learning approach. AYDEP, which has developed principles for all stages of the teaching process, has an infrastructure that can be used in all higher education institutions that provide advanced vocational and specialty training and adopt competency-based education. AYDEP was developed by Kırsehir Ahi Evran University, which identified the competency-based training as its strategic goal (2015-2019 Strategic Plan, 2014), and it was first piloted in the Faculty of Education in the 2018-2019 academic year. After two years of pilot implementation, it was decided to use the competency-based training management system in all associate degree programs, undergraduate programs and graduate programs of the university as of the 2020-2021 academic year.

The Project was named after the akhilik, which has its roots in the 13th century, emphasizing vocational education and professional ethics principles. The guild approach, whose framework was shaped by its founder Ahi Evran-ı Veli, mainly focuses on qualified vocational education. The Ahi community, which was initially based on the acquisition of human virtues and the multi-directional development of people, was later organized as a guild that controlled the production and consumption processes and was organized as a semi-independent non-governmental organization (Akbas et al., 2018). The guild, which has adopted the principle of producing quality goods and services, sets a good example from the early periods to today's modern societies' search for consumer-oriented market and quality. Quality is regarded as a lever in today's developmental modern societies' race for superiority. At the same time, the quality that provides a competitive advantage is used as the leading concept in the production of qualified goods and services. However, quality is the result of production and is based on qualified manpower. Therefore, starting the search for quality with the education

sector is an accurate choice. As a matter of fact, training qualified people is only possible with a quality education. Teachers are the main factors affecting quality in the education sector because teachers are one of the basic building blocks of the education system. In other words, teachers are among the most strategic parts of the social systems called schools (Bursalioglu, 1994). The quality of teachers, who have the power to influence the system as a whole, depends on quality training before starting service. Hence, improving teacher training and teacher development processes is an important factor in increasing the effectiveness of the education system (Kose, 2016).

Improving educational processes in higher education and ensuring a certain standard has become one of the most emphasized issues during the 2000s. A reform process was initiated in 1999 to improve European higher education. The ultimate goal of this initiative, called the Bologna Process, is to develop standards in academic matters and to create a harmonious higher education field in Europe. Following the meeting in Prague in 2001, Turkey declared its intention to be a part of the Bologna Process and conducted a series of studies under the Bologna process in subsequent years. In this context, Bologna Coordination Committees were established in all higher education institutions throughout Turkey. As a continuation of the Bologna Process, Turkey became a party to the Leuven Declaration in 2009 and adopted the principle of establishing comparable and competitive structures in higher education systems. Within the scope of the Bologna Process, practices and actions were carried out by the Council of Higher Education to improve the academic and administrative service quality of higher education institutions and to develop a quality assurance system. For this purpose, Regulation for Academic Evaluation and Quality Improvement in Higher Education Institutions was prepared and based on this regulation, Higher Education Academic Evaluation and Quality Improvement Commission (YODEK) was established by the Inter-university Board (YODEK, 2007). Identification of the National Qualifications Framework was another important undertaking initiated within the scope of the Bologna process. In this context, Law No. 6111 issued in 2011 declared that higher education institutions would associate course credits with student workload and establish Turkey Higher Education Qualifications Framework (TYYC) (TYCC Regulation, 2011).

With the establishment of TYYC, the "National Qualifications Framework," which was adopted by the member countries of the Bologna Process, was identified in Turkey as well. National Qualifications determine the criteria of what individuals will know, what skills and competencies they will obtain after graduation. National Qualifications Framework describes the qualifications and their interrelationships in an education system at the national level. With this system, all qualifications and other learning outcomes in higher education can be explained and correlated with each other. In addition, the learning outcomes expected during and after the teaching process of each course / module are identified as an indicator of the degree of acquisition of the determined competencies.

Theoretically, this research focused on competency-based training. Competency-based training, originating from system theory and behavioral approach, emerged from the performance-based teacher training approach of the 1960s developed in response to

the problems regarding the quality of teacher training programs in the USA (Hodge, 2007). In competency-based training, there is goal-based learning and competencies are at the forefront in all stages of curriculum design. Learning objectives are determined according to the competencies and the contents of the relevant disciplines are prepared in accordance with these competencies. In addition, competencies guide the way in ordering the subjects, planning and evaluating instructional activities (Albir, 2007).

AYDEP, based on the competency-based training approach, uses software that can perform all processes in education electronically. AYDEP has a systematic and technological infrastructure that can be used in face-to-face education, distance education or hybrid education models. The system aims to improve training processes and increase the quality of learning outcomes by creating a competency-based training design. Based on the teacher competencies identified by the Ministry of National Education, AYDEP infrastructure enables to plan each course in a manner to serve the teacher competencies and to monitor whether these competencies are acquired. The educational paradigm of our age requires informing the stakeholders about students' learning process, ensuring that progress is continuous and personalized and making good decisions about the next steps in training (Reigeluth et al., 2008). AYDEP, which provides useful solutions for teachers and students at all stages of the learning process and utilizes a competency-based measurement and evaluation approach, is based on the following principles (Kırsehir Ahi Evran University, Faculty of Education AYDEP Implementation Directive, 2018):

- It guarantees the right to learn.
- It focuses on learning and the multidimensional development of students.
- It is based on student-centered training.
- It aims to ensure the acquisition of predetermined qualifications.
- It is based on the harmony between the program competencies and the learning outcomes of the courses.
- It is based on the harmony between the learning outcomes of the courses and teaching practices.
- It is based on providing rich teaching materials and an interactive teaching environment.
- It is based on the use of a measurement and evaluation model targeting the qualifications and learning outcomes of the courses.
- It is based on conducting a joint examination for the same course.
- It is based on evaluation and continuous improvement of the programs.

Purpose of this Research

Countries seeking quality education have focused on establishing and developing learning management systems. Today, different learning management systems are used in education processes. Effective, efficient and satisfactory use of learning management systems is important for efficiency and quality in education (Ates & Guyer, 2016). AYDEP learning management system developed to ensure that teacher training processes are carried out in line with competency-based training approach; learning management system is regarded as an effective practice to train qualified teachers. AYDEP learning management system, the subject of this research, utilizes a competency-based structure; however, there is no information about the effectiveness of AYDEP in training pre-service teachers. Evaluating educational systems or applications from various perspectives by educators and learners is a basic requirement to improve the quality of education. The results obtained through such research will demonstrate and strengthen the negative aspects of these systems or applications.

This research was conducted to determine instructors' and students' views on the use of the AYDEP learning management system, which was developed to increase the quality of education in higher education institutions and establish a quality assurance system in education. Within the scope of this research, instructors' and pre-service teachers' views on the effectiveness of the AYDEP learning management system were examined from various aspects based on the research problem "What are the effects of using a competency-based learning management system in training pre-service teachers?". The results of this study are expected to contribute to the literature regarding the contributions of using competency-based learning management systems in teacher training.

Method

Research Design

This research was designed as a case study, one of the qualitative research methods. Case study is a qualitative approach that allows in-depth examination of one or more situations that exist in a limited context (Creswell, 2007). Researchers focus on the questions of how and why in case studies and a phenomenon or event that the researcher cannot control is examined in-depth (Yildirim & Simsek, 2011). The use of competency-based learning management system in the Classroom Education Department in a Faculty of Education at a university was the case examined in this study. This research method was selected because this study aimed to analyze this circumstance from various aspects and in-depth under its own specific conditions.

Study Group

The study group of this research was composed of pre-service teachers and instructors. The pre-service teachers in the study group consisted of first-year pre-service teachers

studying in the Classroom Education Department, Department of Primary Education of the Faculty of Education of a state university in Central Anatolia in the fall semester during the 2018-2019 academic year and the instructors teaching these pre-service teachers at the same timeframe. This study group was selected the pilot implementation of AYDEP learning management system was done in this group. Purposeful sampling technique was used to select the pre-service teachers in the study group. The criteria and steps for selecting the participants were as follows:

1. *Satisfaction:* All pre-service teachers who utilized the AYDEP system were asked to rate their satisfaction from the AYDEP system: "Please indicate your level of satisfaction with the AYDEP system you have used in your courses?" The rating included the following options: options 1="Not Satisfied At All", 2="Not Satisfied", 3="Partly Satisfied", 4="Satisfied" and 5="Very Satisfied". Based on the feedback, groups were formed according to their level of satisfaction. At this stage, 84 feedback were received and accordingly, 11 pre-service teachers were "not satisfied at all", 15 "not satisfied", 26 "partially satisfied", 22 "satisfied," and 10 "very satisfied."

2. *Frequency of Use:* The second stage addressed the criterion of using AYDEP frequently. The pre-service teachers who were grouped based on their satisfaction from the AYDEP system in the first stage were identified based on whether they frequently used the system. Three pre-service teachers who frequently used the system were identified from each satisfaction level. AYDEP system keeps track of the time spent by the users on the system. Hence, three pre-service teachers from each satisfaction level were identified through the system records. In this way, 15 pre-service teachers who frequently used the system with different satisfaction levels were included in the study group. Thus, a working group was formed to represent all positive and negative views among the users of the system. In addition, the inclusion of frequent users in the study group was important to have a better idea about the system.

3. *Using the System:* Using the system in teaching was identified as a criterion to determine the instructors that would be included in the study group. Eight instructors were included in the study group based on this criterion.

Implementation Process

The university has ownership of the working principles and software algorithm of the AYDEP learning management system. Professional support was obtained from a software company in converting the determined algorithm into the software. The researchers who conducted this study had no conflict of interest with the company that developed the AYDEP learning management system software. AYDEP learning management system, the subject of this research, was used to increase the quality of education. The AYDEP system included the definitions of program competencies, course subject lists for 14 weeks and the definitions of learning outcomes and acquisitions. AYDEP facilitated the required procedures in the teaching process, such as communication between students and teaching staff, creating a discussion environment,

sharing materials regarding topics and outcomes, defining and assigning homework. Preparing outcome-oriented questions and evaluating learning outcomes could be cited among the important features of the AYDEP system. Exams could be given electronically or by taking printouts of the questions registered in the system, considering the characteristics of the course and the subject and the preferences of the instructors and pre-service teachers. Remote live lectures were also available in the AYDEP system with the help of an open source video conference system integrated into it. During the pandemic in the spring term of 2019-2020, the user university conducted all its courses live through the AYDEP system, thanks to this feature.

Students and instructors can use the AYDEP system by accessing the computer browser or mobile application with the user name and password provided to them by the university. Supporting learning management systems with mobile applications eliminates dependence on time and space and provides great convenience and freedom in user access to information (Elcicek & Bahceci, 2017). The AYDEP system implemented as a pilot in the Faculty of Education allows the instructors to initially see the accepted program competencies in teacher training and determine the course learning outcomes of their own courses in line with these competencies. In addition, student acquisitions for the identified learning outcomes are defined in the system through concrete behavioral statements for each week with the information packages required for these outcomes and information on how and with which questions these outcomes will be measured provided as well. Its competence/ outcomes-based evaluation system is one of the most distinctive aspects of the AYDEP system. Instructors have a question pool consisting of question(s) to be used in measuring and evaluating the determined competencies/ outcomes before the teaching process begins for each course. Preparing a certain number of questions for each outcome enables instructors and pre-service teachers to focus more on the teaching process and learning. The fact that a certain number of questions are prepared in advance for each outcome allows the instructors to focus on the realization of the outcomes while it prompts the pre-service teachers to make self-evaluations about the extent of their learning. Preparation of exam questions in accordance with the level and characteristic of the outcomes fills the gap between teaching and evaluation. Learning outcomes, acquisitions and questions prepared to measure these outcomes are assessed by field experts and required adjustments are made. After the exams are held in the electronic environment, students can access their exam papers and examine the analysis reports for their exam evaluation. After the exam, the difficulty level and discrimination level of each question is automatically provided by the system and the instructor is given immediate feedback about the nature of the question. In this way, it is possible to remove unsuitable questions from the system or correct them. The system ensures taking course and exam attendance rapidly with the mobile application via the QR code method. The system also enables bilateral and mass communication and interaction between students and instructors, sharing lecture notes, sharing resources, forum activities, sharing announcements, messaging and creating feedback for the course.

There are support offices within AYDEP that require interdisciplinary cooperation. Thus,

the encountered problems in the operation of the system can be solved quickly and professionally. There are four different support offices within the scope of AYDEP: Program Evaluation Support Office, Instructional Technologies Support Office, Measurement and Evaluation Support Office and System Support Office. Instructors can communicate with the chairman and members of support offices through the AYDEP database. This link is used to open a discussion topic, forward a request and communicate.

Data Collection Tool

A semi-structured interview form was used to collect research data. This form was developed by the researchers to investigate pre-service teachers' and instructors' views on the effectiveness of the system. Four instructors working in support offices were consulted to obtain expert opinion while the form was developed. Necessary adjustments were made in line with these expert opinions and later, an instructor who had used the system before and a pre-service teacher who was not included in the study group were interviewed to test the form and determine whether there were any incomprehensible questions. The form was finalized after making the necessary corrections in this regard. The interview form consisted of 10 items about the purpose of using the system, its effect on the course learning outcomes and acquisitions, its effect on the teaching process and implementations, its desirable and undesirable aspects, the problems experienced in the system, and the areas that need to be improved. Two examples for questions included in the form are as follows: "For what purpose did you use the system the most? Please explain." and "What do you think about using the system for exams and assignments?"

Data Collection and Analysis

Research data were obtained from the interviews conducted with the study group. Before the interview, instructions were first read to the instructors and pre-service teachers included in the study group. Later, the interviews were recorded with a voice recorder with their permission. Interviews were conducted individually and face to face. Each interview lasted an average of 20 minutes with the instructors and 10 minutes with the pre-service teachers.

Data were analyzed using the content analysis method. First of all, the participants' recorded views were analyzed and transcribed during this process. Then, the data were coded by two coders and reliability was calculated. High consensus between coders increases the reliability of qualitative research (Creswell, 2013; Fraenkel &Wallen, 2008). The consensus among coders was obtained with the following formula:

[consensus/(consensus + disagreement) x100]

and it was found to be as 85.9% (Miles & Huberman, 1994).

Findings

This section presents the findings obtained from the analysis of the research data.

Table 1.

Themes and Sub-themes regarding Using the AYDEP System

Purpose of Use	**Instructor**	**Pre-service Teacher**
Planning the course	+	+
Measurement and evaluation	+	+
Communication	+	+
Desirable Aspects	**Instructor**	**Pre-service Teacher**
Time-space independence	+	+
Measurement and evaluation	+	+
Providing information about the objectives	+	+
Supporting the teaching process	+	+
Undesirable Aspects	**Instructor**	**Pre-service Teacher**
Technical problems	+	+
System compatibility problems	+	+
Other limiting problems	+	+
Problems that are Experienced	**Instructor**	**Pre-service Teacher**
Technical issues	+	+
System compatibility issues	+	+
Problems with support offices	--	+
Solving Problems	**Instructor**	**Pre-service Teacher**
Receiving support from the technical personnel	+	+
Individual solutions	+	+
Its Effects on Acquiring the Teaching Objectives of the Course	**Instructor**	**Pre-service Teacher**
Making the course planned	+	+
Providing an interdisciplinary perspective	+	--
Providing time-space independence	--	+
Its Effects on the Teaching Process and Practices	**Instructor**	**Pre-service Teacher**
Ensures planning	+	+
Ensures easy access	+	+
Limiting aspects	+	+
Its Use for Exams and Assignments	**Instructor**	**Pre-service Teacher**
Positive for assignments	+	+
Negative for assignments	+	--
Positive for exams	+	+
Negative for exams	+	+
Using the System in other Lessons	**Instructor**	**Pre-service Teacher**
Willingness to use	+	+
Reluctance to use	+	+
Aspects that Need Improvement	**Instructor**	**Pre-service Teacher**
Flexibility	+	+
Adaptation support	+	+
Technical aspect	+	+

Table 1 presents the themes obtained from the views of instructors and pre-service teachers who evaluated the AYDEP Learning Management System: the purpose of use, desirable aspects, undesirable aspects, the problems that are experienced, solving problems, its effect on acquiring the teaching objectives of the course, its effects on the teaching process and practices, its use for exams and assignments, using the system in other lessons and the aspects that need to be improved. Sub-themes and codes for each theme are explained below.

Purpose of Use

Both instructors and pre-service teachers were found to use the system for planning the course, measurement-evaluation and communication. However, the system was used for the same purposes by instructors and pre-service teachers with different intensity. Within the scope of planning the course, the instructors used AYDEP mostly to *add weekly topics, take attendance, add goals and objectives, ensure that students are prepared for the course, share course content* and *inform students about the objectives*. Within the scope of measurement and evaluation, the participating instructors were found to use the system for *adding questions, making exams* and *giving assignments*. Finally, instructors used the system for communication purposes to *share announcements, read the suggestions,* and *send messages*. An example for instructors' views about why the system was used is provided below:

> After having been assigned to the course at the beginning of the semester, we first assigned our lesson, divided the subjects into weeks, and entered the subjects by determining the goals, sub-goals and outcomes for each subject. At the same time, I added lecture notes to each week's topic for the students to use, and every week I opened them in advance and I believe that the students saw these notes and used them to prepare for classes. However, I don't know how useful they were after all. I guess system administrators probably see it, I mean, they see how often students log in and out of the system. (I4)

Just like instructors, pre-service teachers also used the learning management system more for planning the course. Within the scope of planning the course, pre-service teachers were found to use the system to *access their lecture notes, track absenteeism, examine weekly topics, examine goals and outcomes* and *view the course schedule*. Within the scope of measurement and evaluation, pre-service teachers were found to use the system to *check their grades, upload assignments* and *prepare for exams*. Pre-service teachers used the system for communication purposes *to follow notifications, follow announcements* and *send messages*. An example for pre-service teachers' views about why the system was used is provided below:

> What I love the most is the immediate access to notes, to outcomes. Setting the goals for the exam based on the outcomes, deciding which subject we will study and downloading those notes as PDF is one of my favorite and most used purposes. (P11)

Desirable Aspects of the System

The desirable aspects of the system were collected under four headings. Accordingly, both instructors and pre-service teachers expressed their appreciation for the AYDEP system due to its independence from time and space, its ease of measurement and evaluation, its advantages in informing about the objectives and its support for the teaching process. In terms of time-space independence, the instructors liked the system mostly for *instant communication, the attendance system, remote control* and *allowing students to follow the lesson*. Concerning measurement and evaluation, instructors liked the system for *standardization of lessons and exams, preparation of questions based on outcomes, ensuring the content validity of exams* and *revealing the degree of goal achievement*. The desirable aspects within the scope of providing information about objectives included the ability of the system to allow students *to see the scope of the course and writing the outcomes* and *competencies*. Finally, in terms of supporting the teaching process, instructors stated that *access to the course grades, having support offices* and *contribution to education and training were among the favorable aspects of the system*. An example for instructors' views about the desirable aspects of the system is provided below:

> Actually, if the system is used well, the students can access messages more quickly. Contact with the student is provided from the system, by writing a message; that is nice. Also, if you are giving a test on the system, we can say to the student, that is what you get. They cannot say - you gave me a low grade, you gave me a high grade-. Objectively, everybody knows the right or wrong, the grade they received, and that's why it is nice. (I7)

Regarding its independence from time and space, the pre-service teachers mostly liked the system for *accessing their grades immediately, attendance system, easy access, instant communication* and *uploading the assignment from the system*. Concerning measurement and evaluation, *preparation of questions according to the outcomes* and *transparency of evaluation* were cited by pre-service teachers as favorable aspects. The desirable aspects within the scope of providing information about objectives included the ability to track *the flow of the course* and *ability to become ready for classes*. Finally, in terms of supporting the teaching process, pre-service teachers liked the system for *easy access to the course grades,* and *interaction*. An example of pre-service teachers' views on the favorable aspects of the system is presented below:

> The exams were easy because they were on the internet. The results are explained immediately, we do not have to wait. We can see the subject to be covered every week through the system. The topics covered in the course are added to the system as lecture notes. It makes it easy to follow the course. (P2)

Undesirable Aspects of the System

Both the instructors and pre-service teachers stated technical problems, adaptation problems and other restrictive/limiting problems among the undesirable aspects of the system. Some of the instructors cited *interface problems* and *problems in uploading assignments as technical problems*. Undesirable aspects within the scope of system

adaptation problems were issues, such as *unfamiliarity with the system, lack of support for instructors* and *lack of information about the system*. Limiting or restrictive issues were found to be *inability of the system to support different exam types* and *restricting the teaching staff*. An example from instructors' views about the undesirable aspects of the system is provided below:

> … for example, when I want to repeat the content of the lesson in the table of specifications let's say, for tomorrow, when I want to check it again, I have to always renew the page. I want to see it all in preview mode, or when I want to add something, I always have to go back, it confuses me… (I5)

Like their instructors, the pre-service teachers also pointed to interface problems and problems in uploading assignments as technical problems. Similarly, *unfamiliarity with the new system* emerged in regards problems in adaptation to the system. Finally, *the stress of taking the exam online* and *inability to use the system without the internet* appeared as limiting problems. An example of pre-service teachers' views on the undesirable aspects of the system is given below:

> …those who do not know the system may experience difficulties for example during the exam. What we are talking about now was also mentioned in class today. For example, we have a lot of trouble in the test questions of paragraph topics. We learned to take tests by underlining as we read. There is no tool here to draw with. If there was a drawing box next to it, for example, it would be more active. That would be better in tests because our topics are paragraph topics. (P7)

Problems that are Experienced in the System

Instructors stated the problems encountered in the use of the system as technical problems, problems with system adaptation and problems with support offices. The pre-service teachers reported that they experienced technical problems and system adaptation problems. *Problems with the interface, delivery of announcements,* and *the problems in uploading assignments to the system* were cited by the instructors as the most common technical problem. They pointed to *lack of training* regarding the problems experienced with system adaptation. Finally, within the scope of the problems related to support offices, they cited *the process of approval for the topics and questions*. An example from instructors' views about the problems experienced in the system is given below:

> When I shared an announcement on the mobile application, it was not sent to the students as a notification. I experienced such a problem. Or, as I said, when the students were uploading their assignments, I was not able to see them although they had uploaded their files. That happened because our students were trying to upload their assignments by clicking on the notifications. But the interface that appears when you click on the notifications is a different interface which does not allow uploads. We let the technical staff know about these problems. (I1)

Pre-service teachers also emphasized *the problem of uploading assignments* and *interface problems* as the most encountered technical problems in the system. *Lack of training* and *stress of taking the exam electronic* were expressed as problems experienced within the scope of system adaptation issues. An example of pre-service teachers' views about the problems experienced in the system is given below:

> I've just experienced problems in the exam, technical stuff. We were carrying system stress rather than exam stress. We were afraid of the system. (P5)

Solving the Problems that are Experienced in the System

To solve the problems experienced in the system, instructors and pre-service teachers mentioned two different strategies: receiving support from the technical staff and solving them with individual methods. Instructors pointed to *system administrators, live software support* and *the software company* regarding receiving support from technical staff. Instructors tried to *solve issues with their own efforts* regarding using individual methods to solve the problems experienced in the system. An example from instructors' views about solving the problems experienced in the system is given below:

> We tried to solve these problems by receiving support from the unit established by our university regarding the AYDEP system in order to solve these problems. (I6)

Regarding solving problems with individual methods, the pre-service teachers stated that they preferred *receiving support from the instructor or solving problems with their own efforts*. Within the scope of receiving support from the technical staff, pre-service teachers stated that they received support *from system administrators*. An example of pre-service teachers' views about solving problems experienced in the system is given below:

> I told the instructor who took care of the system. He gave me a new password. He said -Okay, try again now, we renewed the system- that's how we solved it. (P4)

The Effects of the System on Acquiring the Teaching Objectives of the Course

Regarding the effects of the AYDEP system on acquiring the teaching objectives of the course, the instructors' views were center on the sub-themes of making the course planned and organized, providing an interdisciplinary perspective and providing time-space independence, while the sub-themes of making the course planned and organized and providing time-space independence emerged as the common views for pre-service teachers. Under the sub-theme of making the course planned and organized, the instructors pointed to the following: *clarification of goals and outcomes, disciplining, systematization* and *finding questions about each outcome*. Under the sub-theme of providing an interdisciplinary perspective the instructors pointed to *approval of the questions and outcomes*. An example from instructors' views on the effects of the AYDEP system on achieving the goals and objectives of the course is presented below:

> … It has now become a little more concrete. Of course, it is like taking the job a little more seriously while determining the topics of the course while the course is being taught. In other words, it created a perception of feeling like an academic. … This helped, of course. Does this happen in theory or in real life, it is not possible to follow this, of course, a communication between the teacher and the student is not possible to know the subject very much, but of course it is a case with benefits on paper. (I8)

Under the sub-theme of providing time-space independence, pre-service teachers pointed to accessing the topics before classes, easy *access to lecture notes* and *ability to follow the lesson even when they were not physically in class*. Under the sub-theme of making the course planned; pre-service teachers *emphasized learning about the scope of the exam, being aware of the objectives* and *having exam questions about each outcome*. An example of pre-service teachers' views on the effects of the AYDEP system on achieving the goals and objectives of the course is presented below:

> We can see the outcomes of all courses through AYDEP. Instructors tell us to study for the exams according to those outcomes. When we look at those outcomes and study them, indeed we have similar type of questions in the exam. (P14)

The Effects of the System on the Teaching Process and Practices

Regarding the effects of the system on the teaching process and practices, both instructors and pre-service teachers pointed out the ability of the system to ensure planning and to ensure easy access although there were some limiting aspects. Under the sub-theme of ensuring planning, instructors mentioned *student access to the flow of the topics, associating the course competencies with the program competencies and student access to objectives, outcomes and performances*. As the limiting aspects, instructors emphasized *the inflexibility regarding question types* and *internet connection problems*. Regarding ensuring easy access, instructors expressed their views on *accessing grades*. An example from instructors' views on the effects of the system on the teaching process and practices is given below:

> Actually, in a sense, the student is satisfied with this situation too, he/she can see what he will do study week, in this sense, he/she comes to class motivated. Of course, there are positive and negative feedback, it is important. In the simplest sense, the student comes to class next week knowing what we will study. I think this is important and useful. In general, as I said, the course process was more disciplined; let's not say more tolerated, but the process was much more disciplined. Indeed, it is a good way of ethically controlling both the educators and the students. (I5)

Regarding ensuring easy access, pre-service teachers pointed out *accessibility of grades, instant access to grades* and *tracking absenteeism*. Under the sub-theme of ensuring planning, pre-service teachers mentioned *having access to the flow of the subjects* and *speeding up the process*. Finally, pre-service teachers reported the *stress of taking exams electronic* and *inability to use the system without internet* as limiting aspects. An example of pre-service teachers' views on the system's effects on the teaching process and practices is given below:

> The teachers write the subjects beforehand. I can prepare for classes accordingly. It is good that way. I can see the days I was absent. I can see my grades more easily through the system. (P3)

Using the System for Exams and Assignments

Regarding the effects of the system on the evaluation process, the instructors expressed positive and negative views about the examination and homework assignment through the system. The pre-service teachers, on the other hand, expressed only positive views about taking the exams through the system. While the instructors had negative views regarding *problems that may arise due to the infrastructure, the inadequacy of the system for applied courses, the unfamiliarity of the system, and the limitations in writing questions according to outcomes the most; they stated the suitability of the system for multiple-choice exams* as a positive view. Regarding the positive aspects of assigning homework from the system, instructors stated that it was *effective, provided time independence and saved time, it had a feedback feature, it was easy to evaluate* and *contributed to environmental causes by using less paper*. Regarding the negative aspects of assigning homework from the system, they mentioned *the inadequacy of the system for the homework assignments in applied courses, difficulty in evaluation* and *internet access problems*. An example from instructors' views on the use of the system for exams and homework is presented below:

> Homework is very important. It provides the following, but prior practices also provided the same. What is this? online learning: One; You can upload at any time you want. So you don't necessarily have to upload during class time. This makes you freer. When I start collecting homework in class, something I do with the students, for example, in the classroom, you waste time. The students experience problems to be motivated for the class again. However, systems like AYDEP give you and the student a certain amount of time, they upload it to that system without you having to deal with it at all, and when you come to the classroom, you save time; you don't spend time on homework again in the class… (I2)

Regarding the examinations through the system, pre-service teachers expressed positive views*: its complementary nature to the lesson, ability to learn the grades immediately, applicability for multiple-choice exams, suitability for theoretical courses* and *tracking which subjects to study from the system*. Pre-service teachers' negative views about exam practices included the following: *unfamiliarity of the practice* and *insufficiency of the system for applied courses*. Regarding homework practice, pre-service teachers expressed positive views: *effective, technology-based, provides time independence, saves time* and *contributes to using less paper*. An example of pre-service teachers' views on the use of the system for exams and homework is given below:

> There is no waste of paper. There is no problem of not being able to find the teacher about homework either. They can see it through the system. (P1)

Using the System in other Lessons

The sub-themes of willingness and reluctance to use emerged from instructors' and pre-service teachers' views regarding the use of the system for other courses in the future. Regarding willingness, the instructors pointed to system features, such as *writing the outcomes, making the lesson more planned, providing communication, being based on technology, document sharing* and *its assessment-evaluation system*. Regarding

reluctance, they justified their views by stating that *the system was not suitable for different exam types* and *that the exams had to be taken in a computer environment*. An example from instructors' views on the use of the system in other courses in the future is given below:

> Most importantly, something needs to be integrated into the system regarding applied and oral exams. That's the first point. I think there may be some drawbacks regarding security. For example, I think students enter their passwords on the computer while taking the joint exams. So, do students have the opportunity to change their passwords during the exam? ... (I3)

Regarding the willingness to use the system in other courses in the future, pre-service teachers cited the following: *taking the exams in the computer environment, easy access to lecture notes, providing communication, keeping up with technology, accessing their grades instantly* and *seeing the topics*. Regarding reluctance, they stated that they were not *used to the electronic exams* and *the system was not suitable for applied courses*. An example of pre-service teachers' views about the use of the system in other lessons in the future is given below:

> I think the system should be used in the future if the exams will be on paper. We can see the lecture notes in the system, but we can only see the notes that the teacher emphasized more and underlined on the slides. It is good in that respect. However, the system can continue if the exams are not on the screen but on paper, I think it's a good system. (P2)

Aspects that Need Improvement

Instructors and pre-service teachers emphasized the sub-themes, such as flexibility, adaptation support and some technical aspects regarding the aspects of the system that need improvement. Concerning adaptation support, instructors pointed out the issues of *increasing information about the use of the system, providing feedback* and *increasing communication between offices*. In terms of flexibility, they emphasized *the support for different types of exams* and *not limiting the teaching staff*. In terms of technical aspects, they highlighted the following: *student information system synchronization, development of system login security systems* and *development of mobile phone applications*. An example from instructors' views on the aspects of the required system improvements is given below:

> Actually, it can be more efficient as a mobile phone application. As I said, I cannot look at the questions; I cannot add questions, I can only say this. I am satisfied when I use it on the computer, I do not have a problem except for the points I mentioned, but the system can be developed more to use it on a mobile. (I5)

The pre-service teachers emphasized the following regarding the technical aspects of the system: the exam interface and technical problems that might occur during *the exam,* and *the availability of online or video lessons*. Concerning flexibility, they stated that *the feature to see the exam paper* and *the need to have options for different exam types*. In terms of adaptation support, the need for more information was emphasized. An example of pre-service teachers' views about the aspects of the system that needs to be improved is given below:

It would be better if we learned the lesson that day without coming to school if we explained it to our teacher via video, and if we listened comfortably at home. (P1)

Discussion, Conclusion and Recommendations

This study examined instructors' and pre-service teachers' views on the effectiveness of the learning management system AYDEP system. Research findings demonstrate that the AYDEP system was generally used by the instructors and pre-service teachers for the purposes of planning the lesson process, measurement-evaluation and communication. Similar to this result, a study conducted by Yıldız (2015) reported that instructors in three state universities used a learning management system developed for distance education for file sharing, messaging, as a course content module, adding resources and assignment purposes, respectively. In addition, the findings showed that nearly half of the instructors did not use the e-exam and forum modules. Another study conducted by Ates and Guyer (2016) demonstrated that most of the instructors used the learning management system for messaging, sharing announcements, adding resources and creating questions, but they never utilized the discussion groups in the system. However, a study conducted by Yıldız (2020) with university students concluded that students communicated more through social media rather than communicating through the learning management system. One of the main roles of learning management systems in higher education is to provide connections and interactions between students, teachers and content (Holmes & Prieto-Rodriguez, 2018).

Another result obtained in this research showed that the AYDEP system was appreciated by instructors and pre-service teachers for providing independence from time and space, its ease of measurement and evaluation, its ability to informing students about the objectives and its support for the teaching process. A study conducted by Erdogdu and Sahin (2018) found that the learning management system used by pre-service teachers provided effective use of time. Holmes and Prieto-Rodriguez's (2018) study reported stated that staff and students enjoyed the ease of access to course materials at any time thanks to their learning management systems, and this situation provided flexibility for individuals. The availability of mobile applications of learning management systems and the ability to use them over the internet provide significant advantages for learning to take place regardless of space and time.

This research also noted some findings regarding the undesirable aspects of the AYDEP system. According to these findings, users pointed to some technical problems, system compatibility problems and some other limiting problems. The technical problems experienced by users were problems related to the interface problems and problems in uploading assignments. In their research, Erdogdu and Sahin (2018) reported that users experienced some technical problems with internet or with devices, such as telephones while using learning management systems. However, it was also stated that such problems could be solved easily and would not disrupt the learning process to a great extent.

Participants' views in this research demonstrated that they applied two different strategies in solving problems. The first strategy included receiving support from technical staff while the second strategy consisted of using their methods to solve problems. A study conducted by Koc and Turan (2014) reported that The Mobile Information System of Sakarya University did not display average grades and that the course materials could not be downloaded was regarded as a technical deficiency. Ates and Guyer's study (2016) mentioned that faculty members had to deal with excessive processing steps (interface problems) and experienced some technical problems while performing a function in the learning management system they used. The research results of Emiroglu (2009) are similar to the results of this research, reporting some problems experienced by instructors regarding uploading assignments and the structure of the site, as well as some issues regarding the system loading speed, Turkish language support, content filtering and labeling issues, and the badge system. A continuous and smooth operation of learning management systems is critical for users to adopt the system (Elcicek &Bahceci, 2017). Thus, identifying the problems encountered in the use of learning management systems and ensuring that they are effectively solved will positively affect the sound management of the education process.

It was concluded that making the course planned and organized, providing an interdisciplinary perspective and providing time-space independence were the most effective features of the system, which positively contributed to the achievement of the goals and outcomes of courses. Liu and Hwang (2010) stated in their research that ubiquitous learning is provided thanks to the use of mobile devices and the internet in e-learning systems. The study conducted by Erdogdu and Sahin (2018) with pre-service teachers emphasized that the learning management system provided convenience concerning usability and instant access to information and thus supported learning everywhere.

Another important result of this study indicated that the AYDEP system was welcomed regarding provision of planning, supporting communication and ensuring easy access, but it also had some restrictive aspects. A previous study conducted by Olpak and Ozcakir (2018) on the AYDEP system determined that pre-service teachers had a positive view of the system due to the convenience it provided and enrichment of the learning environment. The study conducted by Elmas (2013) on the Sakarya University Online Academic System, a kind of learning management system, reported that such systems strengthened the management of universities and increased their performances.

This research reported views on the positive and negative effects of AYDEP learning management system on the evaluation process. While efficiency and saving time regarding assignments were regarded as positive aspects, the findings showed that the system may be insufficient to assign homework applied lessons. In addition, while emphasizing the suitability of the system for multiple-choice exams, it was stated that it might be insufficient for the exams required for applied courses. User opinions regarding the widespread use of the system were generally positive. In particular, reasons, such as planning the lesson, writing the outcomes, and easy access to the lecture notes, were stated as positive reasons for the system to become more common. However, it was also

reported that the system was unsuitable for different exam types and created anxiety on those who were unfamiliar with electronic exams. The study conducted by Yenipazar and Turan (2017) on the Information System of Sakarya University determined that students and staff had positive thoughts about the system. Erdogdu and Sahin (2018) reported that a similar learning management system was found to be useful by pre-service teachers. The study conducted by Olpak and Ozcakir (2018) stated that the pre-service teachers' level of satisfaction with the AYDEP system was above average and they found the system usable.

Research findings revealed that the system has features that can be improved. Accordingly, the AYDEP system needs improvement regarding flexibility, adaptation support and technical aspects. In the context of technical improvement needs of the system, the development of the security system in logging to the system was reported as a deficiency. Similarly, the study conducted by Bozkurt and Ucar (2018) reported that the percentage of undecided individuals was high regarding the feelings of trust for identity verification methods in the electronic systems for learning purposes. In addition, the participants stated that information-based authentication and biometric methods were more reliable. The research of Bozkurt and Ucar (2018) addressed mostly related to the exams taken by the students located in different places. During the period when this research was conducted, electronic exams were held in classroom environments in the AYDEP system in the presence of supervisors. For this reason, login security was provided with simpler methods. Ates and Guyer (2016) mentioned instructors' need to use their personal preferences in learning management systems. Yıldız (2020) concluded that lack of information provided to individuals who would use such systems reduced their motivation and desire to join the system. Ozonur et al. (2019) stated that providing more documents was among the aspects that needed to be developed for learning management systems.

It is believed that the results of this study will beneficial in the teacher training process for the users and practitioners of the learning management system. The most important feature that distinguishes AYDEP learning management system from the others is its focus on competency-based training. It is thought that the quality of teacher training will increase thanks to competency-based learning and outcomes-based assessment. Infrastructure problems should be solved, consultancy support should be provided and users should be trained on the system in order for users to achieve better efficiency and effectiveness.

This research was conducted in the Department of Classroom Education, Faculty of Education, affiliated with a state university. Similar studies can be conducted in different departments or even in different faculties. In addition, this research is limited to the views of instructors and pre-service teachers. Taking administrators' views will enable us to look at the effects of the system on education from different angles. Qualitative method was used in this study. Different studies can be conducted using quantitative or mixed methods, and also empirical studies can investigate the effects of learning management systems on educational outcomes.

References

2015-2019 Stratejik Plan. (2014). *Ahi Evran Universitesi, 2015-2019 Stratejik Plan*. Retrieved from http://sgdb.ahievran.edu.tr/dosyalar/stratejik_plan_070115/ on 27.05.2019

Akbas, H. E., Bozkurt, S., & Yazıcı, K. (2018). Comparision with the management thought and The Guild Organization Structure at The Ottoman Government. *Accounting and Financial History Research Journal, Special Issue,* 165-202.

Albir, A. H. (2007). Competence-based curriculum design for training translators. *The Interpreter and Translator Trainer, 1*(2), 163-195. https://doi.org/10.1080/1750399X.2007.10798757

Altiparmak, M., Kurt, İ. D., & Kapıdere, M. (201). E-Learning and open source code management systems in education. *XIII. Akademik Bilisim Conference*, 319-327.

Ates, V., & Guyer, T. (2016). Evaluation of a learning management system by faculty members: Example of Gazi University. *Journal of Information Technologies, 9*(1), 1-12. https://doi.org/10.17671/btd.01463

Bates, A. W. (T). (2005). *Technology, e-learning and distance education.* Routledge.

Bozkurt, A., & Ucar, H. (2018). E-Learning and e-exams: examination of learners' perspectives concerning the authentication methods in online assessment processes. *Mersin University Journal of the Faculty of Education, 14*(2), 745-755. https://doi.org/10.17860/mersinefd.357339

Bursalioglu, Z. (1994). *Okul yonetiminde yeni yapı ve davranıs.* Pegem Publishing.

Creswell, J. W. (2007). *Qualitative inquiry & Research desing: Choosing among five approaches.* SAGE.

Elcicek, M., & Bahceci, F. (2017). The investigation of the effects of mobile learning management system on academic success and attitudes of learners. *Kastamonu Education Journal*, *25*(5), 1695-1714.

Elmas, M. (2013). Sakarya University Online Academic Systems. *The Online Journal of Science and Technology, 3*(2), 145-171.

Emiroglu, B. G. (2019). Investigating faculty members' perceived usability of Edmodo learning management system. *Adiyaman University Journal of Educational Sciences, 9*(1), 158-175. https://doi.org/10.17984/adyuebd.533131

Erdogdu, F., & Sahin, S. (2018). Student opinions regarding usability of the ubiquitous learning system. *Karaelmas Journal of Educational Sciences, 6*(1), 15-24.

Ertmer, P. A. (1999). Addressing first-and second-order barriers to change: Strategies for technology integration. *Educational Technology Research and Development, 47*(4), 47–61.

Fraenkel, J. R., & Wallen, N. E. (2008). *How to design and evaluate research in education*. McGraw-Hill.

Gloria, A. ve Oluwadara, A. (2016). Influence of mobile learning training on pre-service Social studies teachers' technology and mobile phone self-efficacies. *Journal of Education and Practice, 7*(2), 74-79.

Hodge, S. (2007). The Origins of Competency-Based Training. *Australian Journal of Adult Learning*, *47*(2), 179-209.

Holmes, K. A. ve Prieto-Rodriguez, E. (2018). Student and staff perceptions of a learning management system for blended learning in teacher education. *Australian Journal of Teacher Education, 43*(3), 21-34. http://dx.doi.org/10.14221/ajte.2018v43n3.2

Kimmons, R., Miller, B. G., Amador, J., Desjardins, C. D. ve Hall, C. (2015). Technology integration coursework and finding meaning in pre-service teachers' reflective practice. *Educational Technology Research and Development, 63*(6), 809-829.

Koc. T., & Turan, A. H. (2014). Mobile SABIS acceptance and use: An ampirical assessment at Sakarya University. *The Journal of Knowledge Economy & Knowledge Management, 9*(2), 163-175.

Kose, A. (2016). Assessment of the candidate teachers training process according to the opinions of school administrators. *Bolu Abant İzzet Baysal University Journal of Faculty of Education, 16*(3), 924-944.

Liu, G. Z., & Hwang, G. J. (2010). A key step to understanding paradigm shifts in e-learning: towards context-aware ubiquiotus learning. *British Journal of Educational Technology, 41*(2), E1-E9. https://doi.org/10.1111/j.1467-8535.2009.00976.x

Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis: An expanded sourcebook*. Sage.

Olpak, Y. Z., & Ozcakır, B. (2018). Ahi yeterlige dayalı egitim projesi: Pilot uygulamaya iliskin ogrenci gorusleri. *6th International Instructional Technologies and Teacher Education Symposium*, Turkey.

Ozonur, M., Kamıslı, H., Yelken, T. Y., & Tokmak, H. S. (2019). Investigation of distance education students' opinions about the Enocta learning management system. *Mehmet Akif Ersoy University Journal of Education Faculty, 50*, 283-302. https://doi.org/10.21764/maeuefd.407470

Reigeluth, C. M., Watson, W. R., Watson, S. S. L., Dutta, P., Chen, Z., & Powell, N. D. (2008). Roles for technology in the information-age paradigm of education: Learning management systems. *Educational Technology, 48*(6), 32-39.

Sendag, S., & Gedik, N. (2015). Teacher training problems of Turkey on the threshold of higher education transformation and a support model. *Educational Technology Theory and Practice, 5*(1), 70-91. https://doi.org/10.17943/etku.35232

Simonson, M., Smaldino, S., Albright, M., & Zvacek, S. M. (2008). *Teaching and learning at a distance: Foundations of distance education*. Information Age Publications.

TYCC [Turkiye Yuksekogretim Yeterlilikler Cercevesi] Yonetmeligi. (2011). *Turkiye yuksekogretim yeterlilikler cercevesi yonetmeligi*. Retrieved from http://tyyc.yok.gov.tr/dosyalar/21122011-TYYC%20Yonetmeligi-Taslak.doc on 04.07.2019.

Yenipazar, E., & Turan, A. H. (2017). End user information technology satisfaction at Sakarya University SABIS assesment. *Suleyman Demirel University The Journal of Faculty of Economics and Administrative Sciences, 22*(2), 241-252.

Yildirim, A., & Simsek, A. (2011). *Sosyal bilimlerde nitel arastırma yontemleri*. Seckin Publishing.

Yıldız, E. (2020). Investigation of factors affecting the sense of community of distance education learners in online learning environments. *Journal of Qualitative Research in Education, 8*(1), 180-205. https://doi.org/10.14689/issn.2148-2624.1.8c.1s.9m

Yıldız, M. (2015). *The relationships among distance education instructors' knowledge, belief and practices towards distance education*. Master Thesis. Hacettepe University, Department of Computer and Instructional Technology Education, Ankara.

YODEK [Yuksekogretim Akademik Degerlendirme ve Kalite Gelistirme Komisyonu]. (2007). Retrieved from *Yuksekogretim kurumlarında akademik degerlendirme ve kalite gelistirme rehberi*. http://www.yodek.org.tr/yodek/files/7aa12f8d2582deb44d4249c7aa4a2020.pdf on 04.07.2019.

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