Evaluation of Open Course Materials in Terms of E-learning Management Dimensions: The ACADEMA Case

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***Abstract*—Developments in distance education have led to the creation of Open Course Materials that are free and accessible to all. Massive Open Online Courses (MOOCs) are playing a significant role in the new approach to learning. Nevertheless, ensuring continuity, which is the most frequently mentioned problem in the field of MOOCs, is among the priority issues that need to be emphasized. Research has shown that effective instructional design can positively impact the sustainability of student interest. This study aims to improve the MOOCs in Anadolu University's AKADEMA learning portal by adopting a holistic evaluation approach. The researchers conduct content analysis of 50 courses on the AKADEMA portal using the 'e-learning checklist' developed by Badrul Khan. The evaluation covers dimensions such as (1) organizational, (2) managerial, (3) technological, (4) pedagogical, (5) design, (6) evaluation, and (7) resource support. Each dimension is so comprehensive and important that it can constitute the basis for different research; it is aimed to reveal the whole picture with an evaluation that addresses all dimensions. The research is comprised of four stages. The initial stage is entitled 'organization of data collection tools'. The second stage involved the execution of the 'data collection' process, while the third stage entailed the analysis of the collected data. The quantitative data obtained were analyzed using SPSS, while open-ended questions were analyzed using MaxQDA24. In the fourth stage, priority areas for improvement activities were identified.**

***Keywords*—distance education, distance education management, Massive Open Online Courses (MOOCs), motivation**

I. Introduction

The digital transformation movement has made it necessary to rethink learning and teaching in every subject and has put the need for innovative strategies on the agenda. It is hypothesized that MOOCs will play a pivotal role within the new learning vision. The most frequently cited challenge in the evaluation and development of MOOCs is 'lack of participation', i.e., low course completion rates. In order to address this issue and enhance course completion rates, it is essential to identify the existing situation, set priorities and implement improvement initiatives. In this context, the design and effective management of qualified MOOCs come to the fore. If the necessary care is taken and improvements are made in terms of design and management, MOOCs will be able to reveal their potential to radically change the structure of education systems.

II. Literature Review

A review of the extant literature reveals a high diversity of definitions of MOOCs. Massive Online Open Course materials are typically utilized for courses that are offered online by universities and made accessible to anyone willing to enroll and engage with the content at no cost via the Internet [1]. A widely accepted definition of MOOCs, as adopted in the UNESCO forum is 'educational materials and resources that are made freely and openly available to all who wish to use them, and which can be combined, developed and republished under certain license conditions' [2].

The first study on MOOCS in the world was the Open Course Materials Initiative of the Massachusetts Institute of Technology (MIT). According to data presented on the MIT website, the project initially encompassed 50 courses but has grown to include 2,500 courses. Moreover, the website receives over one million visitors per month, with a cumulative total exceeding five hundred million [3]. This initiative, formally known as the Massachusetts Institute of Technology Open Course Materials Project (MIT-OCW), has the potential to profoundly influence the role and function of universities within society. This project has effectively eliminated a significant barrier to information access for large populations [4]. In the current digital era, access to information and the acquisition of independent learning skills are widely regarded as being among the most significant qualifications. Consequently, the younger generation is actively seeking platforms that will enable them to apply these skills [5]. A significant aspect of the appeal of these platforms for educators is their capacity to address the evolving requirements and demands of the current generation.

The students of today are characterized by their constant 'openness' and 'accessibility' through the medium of digital technologies, which are becoming increasingly pervasive. This increased openness and

Manuscript received May 16, 2025; accepted July 28, 2025; published November 26, 2025.

accessibility is affecting students' expectations of education. This paradigm shift has been noted by several commentators, who have posited that this generation of digital natives, characterized by their digital media usage habits, think and learn in a fundamentally different way [6]. Given the pervasive nature of digital technologies in today's world and their increasing accessibility among young people, there is a need for a re-evaluation and modernization of educational practices that consider the unique ways in which this generation engages with digital technologies. No recent development in education has been as controversial in the New York Times as the emergence of Massive Open Online Courses (MOOCs), which have the potential to reimagine higher education 7].

On the other hand, MOOCs have positive aspects that contribute to the educational process, as well as shortcomings and aspects that can be improved [8]. An important issue that has been discussed in relation to the use of MOOCs is the low attendance and completion rates. The high enrolment rates associated with MOOCs are deceptive. A comparison of enrolment and participation rates reveals that, while the number of enrolled students remains higher than that of traditional courses, less than half of the students actively participate in the courses, and only a very small number successfully complete the courses [9]. Researchers propose a categorization of MOOCs participants into four distinct groups: enrollers, viewers, explorers, and certificate recipients [10]. The lowest percentage of these categories are those entitled to receive a certificate at the end of the course, with an average rate of 5%. A similar conclusion was reached in a study conducted on courses offered by the University of British Columbia through Coursera [11]. The study indicated that 5–10% of the group who participated in at least one of the course activities successfully completed the course and earned a certificate [11]. Many different individual, social and economic factors may be effective in the low completion rates of MOOCs. From the perspective of educators, the design and quality of the content offered is also considered an effective factor. As in all types of education, how MOOCs are designed is extremely important.

The creation of interactive and high-quality content for open course materials is more critical than the establishment of platforms to provide access to this content. Despite high enrolment rates in programs aligning with expectations, students frequently discontinue their participation in these courses due to unsatisfactory educational content, thereby decreasing course completion rates. Consequently, there is a necessity for further research and development in the area of e-content development. This approach will facilitate the dissemination of information regarding e-content development and the conception of interactive and informative courses.

Furthermore, the fact that MOOCs make the quality course content of some of the best universities in the world available free of charge to anyone with a computer and an internet connection is an incredibly valuable service and has a very important added value in terms of access to education. However, it would be appropriate to prioritize the use of MOOCs not as a completely separate platform from formal education, but in a way that strengthens the existing system, as other open course materials have done in the past.

MOOCs should not be considered as an alternative to formal education, but as a catalyst that will give formal education the momentum it needs [9].

The global outbreak of the COVID-19 virus and the subsequent pandemic have once again brought the functional use of MOOCs to the fore on a worldwide scale. During this period of global pandemic, face-to-face education was suspended and educational and training activities were delivered through distance education. In this context, numerous institutions, especially the world's leading universities, have made their course materials, archives and libraries available. The global spread of the virus has led to an increased interest in Open Course Materials, making open access more popular today.

On April 7, 2020, schools were closed in 188 countries due to the coronavirus outbreak, affecting approximately 92% of the world's student population [2]. During this period, alternative searches were made to prevent interruption of education due to school closures, and a rapid transition was made to emergency distance education applications. During this process, the necessity and importance of distance education has been emphasized more than ever before. Distance education was seen as having great potential to ensure continuity of education when technical infrastructure and hardware problems are solved [12]. The digital technologies used in distance learning applications during the pandemic have gone far beyond being a temporary solution in a crisis [13]. Digital technologies have begun to provide entirely new answers to the questions of what people learn, how they learn, where and when they learn. In this context, the old normal will be gone forever, and students will face more online and blended learning applications when they return to campus [14]. All these views, expressed by different researchers and experts, support the idea that the skills acquired and technologies used during the pandemic will be valid and effective after the pandemic.

The pandemic has caused changes that can be seen as a turning point in the education system. While the closure of schools was initially perceived as a disruption, it has led to a re-examination of the education system [12]. The evaluation of educational needs that have emerged in the new normal process, and the identification of the most required practices and areas in practice, are imperative in terms of accessible and sustainable education practices. In this context, the evaluation of MOOCs is considered a significant step in the refining of future practices.

The significant investment in evaluating MOOC applications in the domain of distance education holds great potential for improving the pedagogical effectiveness of teachers and schools in the future. It has been asserted that MOOCs can be utilized to develop blended learning models that can be implemented in the future and to enable more personalization of education [13]. In light of the global interest in e-learning, the

evaluation of MOOC applications and the exploration of their integration into education systems are considered important in order to take distance learning studies a step further. In this context, the booklet "The New Normalization Process in the Global Pandemic 2020" prepared by the Council of Higher Education [15] emphasized that blended (mixed) learning applications can be included in the new normal process. In-class training activities, such as lecture notes, exercises and resource sharing can be supported by distance education. Furthermore, topics that are unable to be covered in depth due to time limitations can be addressed more comprehensively through distance education applications. Statements in the booklet [15] indicate that up to 40% of courses in face-to-face programs can be delivered via distance education. This decision can be regarded as a significant development, indicating that distance education will continue to be considered a permanent alternative depending on preference. It is submitted that this pandemic crisis has revealed both the potential for innovation in the education system, and once again brought the widespread use of MOOCs to the agenda, thus validating the position that these have a role to play in the transformation of education.

Educators have pointed out that the problem with distance learning applications is not only the lack of technological equipment and infrastructure, but also the lack of experience and expertise in how to learn, teach and work well, and they have drawn attention to the issues of "new learning and digital transformation". The path to innovative approaches lies in research, wherein distance education applications will be evaluated and novel models will be proposed. In this context, the evaluations to be made in the field of distance education and the models to be developed are also important in terms of being the starting point for future applications.

There are numerous dimensions that can be addressed in the development of MOOCs, which are believed to have an important place within the scope of the new learning vision. However, the most frequently mentioned problem regarding MOOCs – ensuring continuity – is among the priority issues that need to be focused on. In this context, in order to reveal MOOCs potential, before the necessary improvement activities starting point can be accepted as revealing the current situation with all its dimensions.

III. AKADEMA Project

Following the implementation of the 'Openness in Education' policy, Anadolu University initiated the AKADEMA project in 2015, concurrently with the effective use of Massive Online Open Courses around the world. AKADEMA, a social responsibility project of Anadolu University, is a learning portal that aims to facilitate learning about a variety of subjects. AKADEMA courses are offered in two models: self-paced learning and guided learning. In both categories of course, participants are at liberty to access all course content at any time and from any location. Learners enrolled in courses that permit them to commence study at a flexible time and to complete all course activities (e.g., monitoring, quizzes, readings, assignments, and projects) will not be awarded a Certificate of Course Completion. In those courses adopting a guided, supervised learning strategy, learners are expected to observe the predetermined start and finish dates as well as to engage in scheduled communication with the instructor. In the context of guided courses, learners are eligible to receive a Course Completion Certificate upon successful completion of all learning activities within the stipulated timeframe, commencing on the designated date. This certification is awarded following a comprehensive evaluation by the instructor. These documents are distributed electronically to the eligible learners.

An examination of the historical development of the AKADEMA platform reveals that the infrastructure works were completed in 2014, and that the platform commenced operations in 2015 with 2,500 registered students enrolled in seven courses. In the initial year, only 41 students successfully completed their courses. The number of courses increased to 44 in 2016 and 58 in 2017. By the conclusion of 2018, a total of 62,705 participants had been reached, and a total of 1,599 Course Completion Certificates had been issued. In 2019, a new learning management system was implemented, and the number of courses increased to 107. By the end of 2018, a total of 62,705 participants were reached and a total of 1,599 Course Completion Certificates were issued. Statistics concerning course categories, courses offered, total and unique number of users and certificates distributed for the years 2018–2021 are presented in Table I.

TABLE I. Course Categories and Number of Users/Certificates

		Courses		User		Certificates	
Year	**Categories**	**Own-pace**	**Guided Supervision**	**Unique**	**Total**	**Unique**	**Total**
2018	13	10	44	15.018	24.606	514	828
2019	14	14	93	8.491	22.236	904	1.309
2020	11	35	104	51.059	98.062	2.676	4.144
2021	11	37	88		25.868	971	1.362

IV. Materials and Methods

This research, which aims to evaluate the AKADEMA learning portal with a holistic approach from (1) institutional, (2) administrative, (3) technological, (4) pedagogical, (5) design, (6) resource support, (7) evaluation and (8) ethics perspectives to determine the priority areas for improvement and to put forward suggestions, was designed in the general survey model. In survey models, the subject of the research is tried to be defined within its own conditions and as it is. The fundamental objective is to observe the existing state of affairs in an appropriate manner, without any intention to modify or influence it [16]. Within the scope of the

research, qualitative and quantitative data collection techniques were utilized in order to reach the determined objectives. Qualitative research is a research method that focuses more on words and expressions than numbers in data collection and analysis [17]. In other words, qualitative research is research conducted to understand the underlying causes and processes of human and group behaviors [18].

In this context, focus group interviews, one of the most frequently used data collection technique in qualitative researches, were employed. In focus group interviews, participants (usually 4–12 people) with some common characteristics determined by the researcher express their opinions about the problem subject based on their own experiences. In this context, an interview was conducted with academic and administrative staff involved in the management and operation of the AKADEMA portal. The interview was carried out with the participation of 3 academic and 2 administrative members of staff. One of the researchers was the moderator and managed the discussion, while another researcher participated as a rapporteur. For reasons of validity and ethics, the participants were informed about the subject of the research and where it would be published. The participants were also informed that the interview was recorded. The duration of the focus group interview was one and a half hours.

Prior to the interview, questions were reviewed by an expert panel to evaluate the comprehensibility and answerability, to check whether the interview questions expressed the same meaning for all participants, whether they were found meaningful by everyone, whether they were concise and single-targeted. After the completion of the group interview, the quantitative data were analyzed with MaxQDA24 and then the theme analyses of the answers given to the open-ended questions were carried out. Finally, priority areas for improvement activities were identified and recommendations were put forward.

On the other hand, as the research aims at the evaluation of MOOCs regardless of the field, the active courses to be selected from the AKADEMA portal are evaluated by means of a checklist. The AKADEMA portal contains a total of 126 courses in 11 fields. In order to collect sufficient data on each field and to ensure equality between categories, fields with less than five courses will not be included in the research. Therefore, a total of 50 courses, five courses from each of the 10 fields, will be evaluated using a checklist.

The fundamental dimensions of the 'e-learning checklist' developed by Badrul Khan (2006) will be accepted as the initial point of a comprehensive roadmap for the efficient and effective use of distance learning technologies [19]. In this study, the checklist, which includes statements for the collection of very comprehensive and detailed data, was simplified in a way to be suitable for the evaluation of the MOOCs. The statements were arranged in accordance with the characteristics of the MOOCs. The interview questions were thus finalized as the data collection tool.

In the analysis of the data collected from 'e-learning checklist', the initial step involves the exploration of the responses through the utilization of descriptive statistics. This encompasses the calculation of means, standard deviations, and the frequency of each item. Then the normality distribution was analyzed. Those with a normal distribution were subjected to the t-test and those with a non-normal distribution to the Mann-Whitney U test. The Chi-square test was used in the final analysis. In the last analysis, the chi-square test was performed.

A multidimensional evaluation of the courses, based on expert opinion, as well as in-depth interviews with the staff responsible for the management and organization of the platform, will enable an evaluation from a managerial and institutional perspective.

V. Result and Discussion

The questions aimed at evaluating the AKADEMA platform are classified under 8 dimensions. The data obtained from the course reviews and the opinions expressed in the group interview are presented within the framework of 8 basic dimensions in the e-learning checklist.

A. Institutional Dimension

Quantitative data on institutional evaluation are presented in Table II. In all courses it can be seen that students have access to some of the course content before enrolment. It is considered as important to give students this opportunity so that they can enroll in courses that they think will meet their expectations.

TABLE II. Quantitative Data on Institutional Dimension

Institutional	Yes		No	
	f	%	f	%
Can students access some of the course content before they enroll?	50	100	--	--
Are the names of the tutors published on the course description page?	23	46	27	54
Are the skills and knowledge that students need to have in order to use the AKADEMA platform effectively clearly stated?	25	50	25	50

It is noteworthy that more than half of the courses (54%) do not include the names of the course instructors. However, students' knowledge about the work and expertise of the instructors may have an impact on their belief in the contribution they will receive from the course. On the other hand, it is also important for the student to feel that he/she has an interlocutor on issues related to the content. All these can be considered as factors that can positively affect the student's motivation towards the course. From the instructor's point of view, the sensitivity and quality concern about a material in which his/her name will be included will motivate the instructor to produce better quality content. Therefore, this issue is among the elements that need to be improved and corrected.

B. Management Dimension

Quantitative data on management are presented in Table III. The full agreement on password protection is in

line with the responses on providing access to some of the content prior to registration. These two questions are mutually confirming each other. Full participation in the printing of the course materials is one of the main characteristics of the openness principle, which is a key feature of the course platform. Another noteworthy issue is that although 28% of the courses analyzed were supervised, 98% of the students stated that they were not contacted when they did not fulfill their duties on time. This situation suggests that the necessary attention is not paid to task follow-up, especially in supervised courses. Failure to meet student expectations in the category of supervised courses may also be associated with high drop-out rates. Failure to meet student expectations in the category of supervised courses may also be associated with high drop-out rates. Including these courses in the self-directed category and structuring their operation accordingly may reduce unmet student expectations. Providing a control and monitoring mechanism for counsellor supervision would be another alternative. Table III shows that another area for improvement is the clarity of announcements. 52% of the courses did not have clear enough announcements.

TABLE III. QUANTITATIVE DATA ON MANAGEMENT

Management	Yes		No	
	f	%	f	%
Is the date of content updates prominently displayed?	4	8	46	92
Is the content protected by a password so that only registered students can access?	50	100	--	--
Are students allowed to print course content?	50	100	--	--
Are students contacted if assignments are not submitted on time?	1	2	49	98
Can students upload documents?	28	56	22	44
Is it possible to link to websites in discussions/modules?	37	74	13	26
Are announcements clear and informative?	24	48	26	52

C. Design Dimension

Quantitative data on design dimension are presented in Table IV. The use of colors, headings, navigation symbols/ words is consistent; and the use of space/white space is also visible and legible in all courses (%100%). It is seen that the principles to be considered in design are generally considered in most of the lessons. Nevertheless, it is evident that the particular circumstances of students with disabilities require greater consideration. Furthermore, it has been determined that 90% of the courses do not include subtitles for those with hearing disabilities. Furthermore, it has been observed that 90% of the courses lack a search feature, which would undoubtedly be a valuable tool for navigating the website and locating specific content.

TABLE IV. QUANTITATIVE DATA ON DESIGN

Design	Yes		No	
	f	%	f	%
Content is designed to improve readability (short paragraphs, bullet points, images, charts, etc.).	43	86	7	14
Navigation is simple and intuitive.	47	94	3	6
It is possible to easily access the desired content.	45	90	5	10
There is a sitemap to avoid getting lost.	31	62	19	38
The fonts used are legible and consistent.	48	96	2	4
The use of colours and headings is consistent.	50	100	--	--
Navigation symbols/words are consistent.	50	100	--	--
The use of space/white space is designed to be easily visible and legible (approximately 20%).	50	100	--	--
Each screen is designed to fit on one printer page.	38	76	12	24
Subtitles are provided for the hearing impaired.	5	10	45	90
Screens are resizable for visually impaired users.	30	60	20	40
There are no chapters under construction.	28	56	22	44
There are no dead links in the course.	32	64	18	36
There is a search function in the design of the site.	5	10	45	90

The Likert scale data in the design dimension (Table V) show that more than half of the courses have positive features in terms of user friendly interface design (64%) and appropriate content design for e-learning (68%). However, in order to increase the efficiency and also participation rate, it is important to improve the user-friendliness and e-learning appropriate designs.

TABLE V. QUANTITATIVE DATA ON DESIGN II

Design	1		2		3		4		5	
	f	%	f	%	f	%	f	%	f	%
The interface design is user-friendly.	--	--	1	2	16	32	32	64	1	2
The interface design makes easy to focus on learning.	--	--	3	6	18	36	28	56	1	2
Course content is organized and presented appropriately for online learning.	1	2	2	4	11	22	34	68	2	4

D. Pedagogy Dimension

Quantitative data on pedagogy dimension are presented in Table VI. It can be seen that the aims and objectives of the course are clearly explained in all courses (%100). In general, most of the courses have positive characteristics in terms of all the pedagogical features that were examined. However, it is hypothesised that enhancements, particularly with regard to interaction opportunities, will contribute to the platform's appeal and result in increased attendance rates.

TABLE VI. QUANTITATIVE DATA ON PEDAGOGY

Pedagogy	Yes		No	
	f	%	f	%
Are the aims/objectives of the course explained clearly?	50	100	--	--
Are the objectives for each unit, section or module included?	45	90	5	10
Are learning outcomes clearly stated?	48	96	2	4
Does the course require students to participate in scheduled online discussions?	28	56	22	44
Do the topics of discussion match the aims and objectives of the course?	30	60	20	40
Are students and teachers able to interact with each other in the course?	36	72	14	28
Is there any chance for students to interact with each other during the course?	33	66	17	34

E. Technology Dimension

Quantitative data on technology dimension are presented in Table VII. As illustrated in Table VII, it is evident that a significant proportion of courses (86%) do not provide adequate clarity regarding the hardware and software requirements. At first glance, it seems to contradict each other that 86% of the courses lacked

explanations about the requirements, while 68% of the courses had adequate explanations about their use. However, in the majority of the courses, no specific hardware or software was required, and thus no requirements were specified. In such cases, it may be considered necessary to include a brief statement to the effect that special software or hardware is not required. This would serve to provide clarification on the issue at hand.

TABLE VII. QUANTITATIVE DATA ON TECHNOLOGY

Technology	Yes		No	
	f	%	f	%
Hardware/software requirements are clearly stated.	7	14	43	86
Instructions and information on software and hardware usage are provided briefly.	31	62	19	38

F. Resource Support Dimension

Quantitative data on resource support dimension are presented in Table VIII. In 56% of the lessons, it is evident that the resources are contemporary and engaging. Whilst the majority opinion is positive, there is always room for improvement with regard to the quality and relevance of the content. Conversely, it was observed that in approximately half of the courses (48%), the necessary support was not provided when students encountered difficulties with assignments/tasks. It is imperative that measures are implemented to enhance this support, as it is fundamental for facilitating learning and maintaining learning motivation.

TABLE VIII. QUANTITATIVE DATA ON RESOURCE SUPPORT

Resourse Support	1		2		3		4		5	
	f	%	f	%	f	%	f	%	f	%
Resources are of good quality, up-to-date and interesting.	2	4	3	6	17	34	23	46	5	10
Adequate help is provided for students who have problems completing assignments.	5	10	19	38	19	38	5	10	2	4

G. Evaluation Dimension

Quantitative data on evaluation dimension are presented in Table IX. It can be seen that in 40% of the courses the assessment process is structured correctly and fairly. On the other hand, in 30% of the courses the quality of the assessment process was not clear and the assessment possibilities were considered partially adequate. A potential area for improvement in relation to the assessment dimension of the courses is the opportunity for students to demonstrate their learning, which is currently available to only 32% of courses.

TABLE IX. QUANTITATIVE DATA ON EVALUATION

Evaluation	1		2		3		4		5	
	f	%	f	%	f	%	f	%	f	%
The assessment process is structured correctly and fairly	4	8	12	24	14	28	15	30	5	10
Assessment criteria are clearly stated.	4	8	13	26	9	18	19	38	5	10
The instructions on how to prepare and submit assignments are easy to understand.	9	18	14	28	4	8	13	26	10	20
Students should have the chance to show what they have learned.	5	10	17	34	12	24	7	14	9	18
There is enough time to complete the coursework.	8	16	14	28	7	14	11	22	10	20
Assessment methods (e.g. quizzes, assignments, projects, discussion forums) are utilised to measure the achievement of learning objectives	6	12	14	28	11	22	11	22	8	16
Students receive useful and constructive feedback.	4	8	14	28	25	50	4	8	3	6

H. Ethics Dimension

Quantitative data on ethics dimension are presented in Table X. ethics-based Characteristics observed in the vast majority of courses are: the courses do not display any characteristics of discrimination (96%); promotes mutual respect, tolerance and trust (98%); does not use icons/symbols/phrases that may disturb participants from different cultures (90%); have transparent privacy and data security policies (82%). On the other hand, when we look at the features that need to be improved in terms of ethics, it is seen that more attention should be paid to students' disabilities, language support and clearer explanations about plagiarism.

TABLE X. QUANTITATIVE DATA ON ETHICS

Ethics	Yes		No	
	f	%	f	%
The jargon, vocabulary and terms in the course content are clearly explained to avoid misunderstandings.	30	60	20	40
The course presentation offers a variety of different language options.	6	12	44	88
The lesson does not use icons/ symbols/ phrases that may disturb participants with different cultural characteristics	45	90	5	10
The course is designed to meet the needs of visually impaired students	3	6	47	94
Multimedia elements (graphics, audio, video, etc.) are supported by texts for hearing impaired participants.	7	14	43	86
Ethical policies regarding the rules to be followed are clearly explained	11	22	39	78
Clear information about plagiarism and its consequences was provided.	8	16	42	84
Information about copyright of course materials is clear and explicit	30	60	20	40
The course does not exhibit any characteristics of gender, ethnic or professional discrimination.	48	96	2	4
The course promotes mutual respect, tolerance and trust.	49	98	1	2
Privacy and data security policies are transparent	41	82	9	18
The rules cover online communication, intellectual property rights and academic integrity.	18	36	32	

I. The Relationship Between Self-Paced/Guided Courses and E-Learning Dimensions

It was tested if the questions in all dimensions showed a significant difference according to whether the course was guided or self-directed. Firstly, the normality distribution was analyzed for the date set. Then, those with a normal distribution were subjected to the t-test and those with a non-normal distribution to the Mann-Whitney U test.

TABLE XI. SELF-PACED AND GUIDED COURSES T-TEST

	t	df	p
Students receive useful and constructive feedback.	−3.595	35.242	< 0.001

As demonstrated in Table XI, it can be hypothesized that a significant difference exists between self-paced and guided lessons. In other words, it can be stated that students receive more constructive feedback within the guided lessons.

Upon analysis of the data presented in Table XII, the mean rank of 32.714 was assigned to the 'guided courses' category, while the mean rank of 22.694 was assigned to the 'self-paced courses' category. This result indicates a statistically significant difference between the two categories. This means that the quality of the guided courses is significantly higher than the quality of the self-paced courses.

TABLE XII. SELF-PACED AND GUIDED COURSES MANN-WHITNEY U TEST

	Group	N	Mean	SD	SE	Coefficient of variation	Mean Rank	Sum Rank
Assessment methods are utilized to measure the achievement of learning objectives*	Self-paced	36	2.778	1.290	0.215	0.464	22.694	817.000
	Guided	14	3.643	1.082	0.289	0.297	32.714	458.000

* $p = 0.026$, U: 151.

J. Suggestions for Improvement

The analysis of the qualitative data collected during the group interview on the improvement suggestions was conducted utilizing the MaxQDA24 software. Priority areas for improvement were identified and recommendations were put forward.

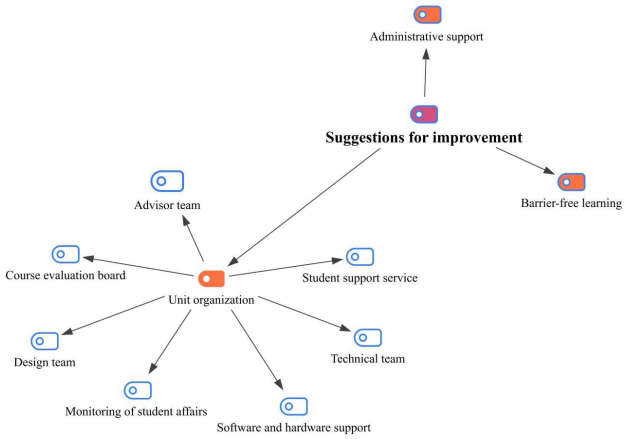


Fig. 1. Suggestions for improvement.

As seen in Fig. 1, the findings were grouped into three categories: (1) unit organization, (2) administrative support, and barrier-free learning. The most emphasized issue was the necessity for a functional structure in order to ensure that the platform delivers the envisaged benefits and provides quality services. The critical points that should be included in this structuring process are outlined below: (1) advisor team, (2) course evaluation team, (3) design team, (4) monitoring of student affairs, (5) Software and hardware support, (6) technical team and (7) student support service.

Conversely, a word cloud (Fig. 2) was constructed to represent the most frequently used words during the interview. An analysis of the most prominent words in the word cloud reveals that the most emphasized topics are platform problems, the structure of the platform, suggestions regarding the platform and course content.

The most emphasized problems in the interview are given in Fig. 3. It is noteworthy that the most emphasized problem is the decrease in technical support. It is seen that the problems experienced with the consultant team and the problems experienced in the functioning of the system due to the decrease in management support are frequently mentioned.



Fig. 2. Most frequently used words.



Fig. 3. Most emphasized problems.

VI. CONCLUSION

In conclusion, the evaluation of AKADEMA provides valuable insights into the current state of MOOC delivery at Anadolu University. While the platform performs well in terms of openness, navigation, and clarity of learning objectives, several critical areas require immediate attention to enhance effectiveness and sustainability. These include increasing administrative follow-up in supervised courses, improving accessibility and inclusivity in design, enhancing student-instructor interaction, and strengthening assessment and feedback mechanisms.

The significant differences between guided and self-paced courses in terms of learning quality support the recommendation to further develop structured learning models. As distance education continues to evolve post-pandemic, platforms like AKADEMA must prioritize

pedagogical effectiveness, learner support, and inclusivity to ensure they meet the diverse needs of a global student body.

Future research should focus on longitudinal studies tracking student outcomes and retention, the implementation of AI-driven feedback systems, and models that blend formal and informal learning. These initiatives can contribute to building MOOCs that are not only open and scalable but also pedagogically robust and socially equitable.

CONFLICT OF INTEREST

The author declares no conflict of interest.

FUNDING

This study is part of a larger project titled "Evaluation of Open Course Materials in Terms of E-learning Management Dimensions: AKADEMA Example". This project was funded by Anadolu University and received financial support from the Anadolu University Scientific Research Projects Commission.

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