

# HOW DO HIGHER EDUCATION INSTITUTIONS OFFER ONLINE COURSES FOR ON-CAMPUS STUDENTS? PULL AND PUSH FACTORS INFLUENCING THEIR DECISIONS

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## ABSTRACT

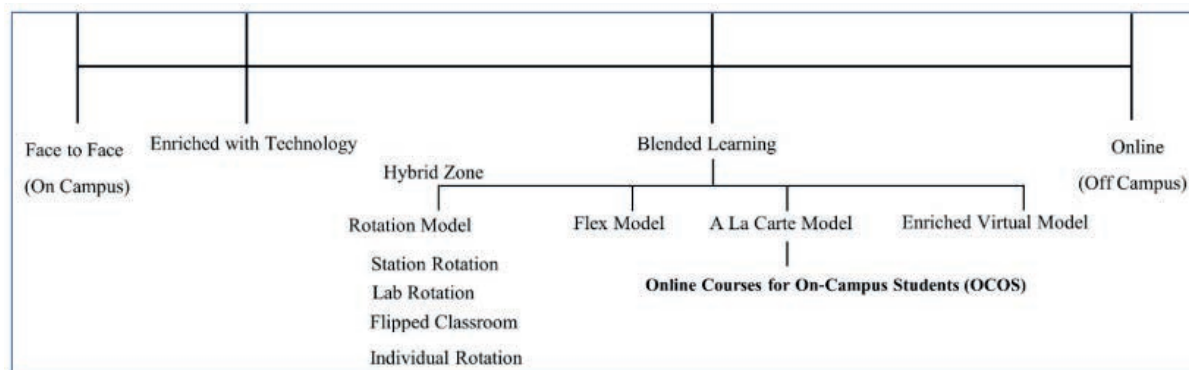
The purpose of this study is to reveal the pull and push factors that influence the decisions of administrators and practitioners about online courses offered to students on campus in terms of teaching-learning, course content procurement, and assessment-evaluation dimensions. The study was carried out using nested multi-case studies as a qualitative research method. The sample of the study consisted of four Distance Education Centers (DEC) with at least five years of experience, selected by the snowball and maximum variation sampling methods. The data were obtained using individual semi-structured interviews, institution documents, and Learning Management Systems (LMS), with 24 people working as administrators, content development specialists, program coordinators, and IT specialists at these institutions. It was found that factors like the interaction between students and teachers, legislation, budget, human resources, and organized structuring helped the DEC's decide which models to use in the teaching-learning, course content procurement, and assessment-evaluation dimensions.

**Keywords:** Blended learning, decision-making factors, online courses for on-campus students, distance education, administrative factors.

## INTRODUCTION

Today, rapid developments in science and technology have affected the field of education and our daily lives, and education and training activities have started to be carried out via online media and in conventional classrooms. In recent years, educational institutions have become interested in incorporating the positive aspects of conventional and online classes into the teaching process. With this interest, Blended Learning (BL) has come to the fore in educational sciences (Rasheed et al., 2020). BL is an adaptive and dynamic system combining technology-mediated learning with face-to-face learning (Wang et al., 2015). There are different models of BL depending on the weight given to face-to-face and online practices in the teaching-

learning process. There are four different models under the BL approach among the face-to-face and online learning approaches: rotation, flex, a la carte, and enriched virtual models (Christensen et al., 2013).



**Figure 1.** Blended Learning Models Spectrum (Adapted from Christensen et al. (2013) & Aydin (2019))

In the à la carte model, students take one or some of the courses online while taking the other courses in the program face-to-face. The legislation published by the Turkish Council of Higher Education (CHE) in 2013 has paved the way for the compulsory courses given under the name “Common Courses” in the curricula of all higher education institutions and delivered face-to-face (Ataturk’s Principles and History of Revolution, Turkish Philology, Foreign Language, and Basic Information Technologies) to be given with BL. These courses, which started to be taught via BL, are referred to as “Online Courses for On-Campus Students (OCOS)” by the researchers in this study. While students come together with instructors and other students taking the course online for OCOSs, they meet face-to-face for other courses. In this context, it is seen that OCOSs are suitable for the à la carte model of BL. To clarify the place of OCOSs in BL models further, the spectrum in Figure 1 was developed using Aydin’s (2019) spectrum on face-to-face and online education practices and the BL spectrum developed by Christensen et al. (2013). In the legislation developed by CHE, the distance education process has been standardized at higher education institutions. With this development, Distance Education Centers (DECs) have started to be established within higher education institutions. The task of these centers is to plan and conduct distance education activities supported by information technologies and focused on online learning. With the introduction of online courses given via BL, the number of higher education institutions with DEC in Türkiye has increased rapidly, rising to 123 in 2019 (Ustun, 2020). During the COVID-19 pandemic, DECs were established at all higher education institutions, and distance education practices became mandatory. After the onset of the pandemic, the importance of BL at higher education institutions was understood. In the legislation published by CHE, it is stated that 40% of the courses in the curricula could be given via BL (CHE, 2020).

This legislation encourages higher education institutions to offer OCOS. However, the lack of clarity in the legislation (Gunduz et al., 2020) has led institutions to implement different models. This study aims to identify the different models that DECs practice when offering OCOS and the factors that influence their decision-making processes. It is thought that these factors will guide DECs that will start offering OCOSs in choosing the most appropriate model and provide ideas to institutions currently implementing OCOSs to improve their processes. This study is especially important in terms of helping with the planning, development, and execution of BL, which is expected to become widespread in higher education institutions after the COVID-19 pandemic.

## LITERATURE REVIEW

With technological advancements and an increase in individual learning orientation, the BL approach, which combines various face-to-face and online education models, has begun to be used extensively at higher education institutions. The characteristics of BL, such as providing flexible and individual learning, increasing motivation, offering various teaching approaches, accessibility of all content (Saltan, 2016), and

time savings (Warren et al., 2021), have made it preferable among students. However, in BL, students may run into problems like not being able to communicate well, not getting answers to their questions right away (Saltan, 2016), feeling alone, and not being able to manage their time (Siraj & Maskari, 2019). Another group affected by the intensive use of BL at higher education institutions has been instructors. Technical and pedagogical support provided to faculty members, adequate technical infrastructure, rewards, and incentives (Bokolo, 2022) facilitate their adaptation. On the other hand, faculty members who experienced a rapid transition from face-to-face education to BL are reluctant to learn new technology, show resistance (Hung & Chou, 2015), and display lack self-confidence (Lightner & Lightner-Laws, 2016). Factors such as the high number of students in classrooms, increasing workload, the inability to receive feedback from students, the inadequacy of support services, and the changing roles of instructors in BL (Gurer et al., 2016) are effective in increasing the resistance of the instructors to BL. Institutions paying attention to these factors while making strategic decisions can eliminate such problems.

It is thought that the prejudices and resistance of students and instructors against BL can be broken through administrative processes that are carried out in a planned manner. Accordingly, one of the greatest responsibilities falls upon the 'administrators of the institution. Therefore, the administrative process should start by raising awareness of the benefits and necessity of BL among students, faculty members, and other stakeholders (Garrison & Vaughan, 2013). The administrative staff, working with reliable experts on BL can effectively raise this awareness. Instructional designers, content development specialists, IT staff, curriculum coordinators, and administrative officers collaborate in many tasks throughout the process, such as designing courses and deciding on how they will be taught, purchasing and using the technologies needed, enrolling the students in the courses, providing support services to the students, and carrying out the assessment and evaluation processes (Williams, 2003). For this reason, the decision-making strategies of administrators and practitioners together in the process of the successful execution of BL may prevent many steps from being skipped.

The capacity of DEC's to have strategic planning at the administrative level might be related to the 'belief of the administrators that BL is beneficial. Administrators with this belief initiate policies that support the growth of the BL approach (Ghazal et al., 2018) by providing access to course content, flexible learning, and cost-effective online learning platforms (Dakduk et al., 2018). Factors such as decision-making strategies, institutional structure, culture, resource support, technology cost, human resources, and ethical considerations are effective in the policy development process (Bokolo et al., 2020; Tamim, 2018). It is thought that if administrators who want to make BL prevalent take these things into account, they can make sure DEC's meet certain quality standards.

Considering the literature on OCOS, it is clear that studies on this topic are primarily focused on students (Kirmaci & Acar, 2018; Oztas & Kilinc, 2017) and instructors (Gurer et al., 2016; Kapucu & Adnan, 2018). However, there is not enough focus on studies carried out at the administrative level. It is noteworthy that studies carried out at the administrative level (Bokolo et al., 2020; Tamim, 2018) within the scope of BL, which is a more advanced level of OCOS, have started to gain momentum recently. Quality concerns have arisen as a result of these administrative tasks, and administrators have begun to focus on quality studies.

Along with the increasing demand for accountability and cost-effectiveness in education in general, the quality of curricula and learning outcomes at institutions compared to those of conventional and non-profit organizations has been effective in forming concerns about quality. Hence, each institution has started to carry out quality studies within its body (Uysal & Kuzu, 2011). With the increasing importance of fields such as instructional design, technology, and assessment-evaluation over time, the need for common ideas has increased, and quality studies started to be carried out by accreditation bodies (Tonbuloglu & Aydin, 2015). Accreditation bodies are important stakeholders on the road to quality and provide consulting services for recommending appropriate models and tools for quality assurance depending on the institutional context (Toprak & Sakar, 2021). Many leading accreditation bodies, such as the American Association for Higher Education, the Sloan Consortium (Sloan-C), and the Institute for Higher Education Policy (IHEP), guide institutions in implementing and maintaining quality standards. IHEP (2000) considers the quality approach not in terms of the outcome but in terms of the process or the quality of the services and materials that are provided (Simsek, 2012). Thus, if IHEP provides a process-oriented approach, this can help institutions implementing the BL approach avoid skipping many steps in processes and lowering

quality (Ozdemir, 2002). The teaching-learning, course content procurement, and assessment-evaluation dimensions of IHEP guided the researchers in drawing the framework of this study and not overlooking the dimensions necessary in learning environments.

Answers to the following questions were sought to examine the factors affecting the decision-making process in model choices in line with the experiences of people working as administrators and practitioners in the OCOSs offered at higher education institutions in Türkiye:

1. What are the factors that affect the decisions of DEC's to choose the model they apply in teaching and learning?
2. What are the factors that affect the decisions of DEC's to choose the model they apply in terms of course content procurement?
3. What are the factors that affect the decisions of DEC's to choose the model they apply in terms of assessment-evaluation?

## METHOD

A qualitative research approach was used to answer the “why” and “how” questions regarding the experiences of DEC administrators and practitioners with OCOS. Four DEC's that applied their models in the OCOS delivery process were examined, and three dimensions of IHEP (teaching-learning, course content procurement, assessment-evaluation) were used as the analysis units of the study. For this reason, the study adopted the nested multi-case design, which is a case study design reported by Yin (2003, pp. 39–41).

## Cases and Participants

“Common Courses”, delivered compulsorily at higher education institutions in Türkiye, were examined. These courses, which used to be offered face-to-face, started to be given via BL with the legislation developed by CHE. These courses are referred to as “OCOS” throughout the study. To determine the institutions in the study, information on the methods of OCOS was obtained from the institution websites through a checklist prepared by one of the researchers and an expert. The researcher reached 17 institution administrators by phone with the snowball sampling method. As a result of the phone interviews, preliminary information about the model diversity of the institutions in terms of OCOS and their experiences in this process was gathered. Consequently, four institutions were determined by considering the maximum variation method. Table 1 presents information about the cases.

**Table 1.** Summary of Selected Cases

In-text expression	Total number of students at the university	Year of foundation of DEC's	First year of implementation of OCOS	Average number of students taking OCOS per year
Case-1 (C1)	70,000	2009	2012	33,000
Case-2 (C2)	57,000	2009	2012	20,000
Case-3 (C3)	61,000	2002	2010	16,000
Case-4 (C4)	32,000	2014	2014	14,000

C1 is one of the three universities in Türkiye that hosts more than 400,000 distance learning students. The inclusion of face-to-face implementations, the use of content prepared in an individual learning format for distance learning and BL, and the presence of exam centers were the main reasons for including C1 in the report. In C1 and C3, OCOSs are conducted through the open-source learning management system (LMS) Moodle, and only registered students can access the courses. In C2, OCOSs are published on the institution's website, and anyone can access the courses. The change in the exam model and the purchase of LMS from a private company were influential in the inclusion of C4 in the study. Their efforts to improve the OCOS process and their experiences in this process were significant in including C1, C2, C3, and C4 in the study.

**Table 2.** Roles and Experiences of Participants in the OCOS Process

Interviewee	Role	OCOS Experience
C1-M1	Assistant administrator	3 years
C1-M2	Exam coordinator	2,5 years
C1-M3	Program coordinator	4 years
C1-M4	Information technology specialist	1 year
C1-M5	Assistant exam coordinator	4 years
C1-F6	OCOS coordinator	4 years
C2-M1	Administrator	6 years
C2-M2	Content development, Support service	6 years
C2-M3	Assistant administrator	4 years
C2-F4	Content development, Support service	6 years
C2-M5	Content development	6 years
C2-M6	OCOS coordinator	6 years
C3-F1	Administrator	3,5 years
C3-M2	Instructional designer	5 years
C3-F3	Assistant administrator	5 years
C3-F4	LMS management	4 years
C3-M5	Program coordinator, instructor	5 years
C3-F6	Program coordinator, instructor	4 years
C3-M7	LMS management	5 years
C3-M8	LMS management	5 years
C3-F9	Program coordinator, instructor	5 years
C4-M1	Administrator	3 years
C4-M2	Assistant administrator	3 years
C4-M3	Assistant administrator	3 years

This study included administrators and assistant administrators of institutions, program coordinators, technical personnel (e.g., information technology specialists, content development specialists), and instructors. While the administrators and assistant administrators at the institutions were both administrators and practitioners, the other participants were only practitioners. Table 2 presents the roles and experiences of the participants in the OCOS process.

### Data Collection and Analysis

The data were collected from C1 first, followed by C4, C3, and C2. The researcher interviewed the administrators on the phone before visiting the DEC. The date and time of the interviews were decided. The researcher visited the DEC on the decided date and time. The participants were asked to fill out the “Volunteer Form.” The interviews were recorded with the permission of the participants. The interview took an average of 75 minutes for each participant. Since the interviews took a long time, a maximum of two participants were interviewed per day. For this reason, the researcher stayed for one week at the DEC with large numbers of participants.

The participants shared the documents (e.g., exam documents, orientation presentations) they used within the scope of OCOS with the researcher. In the LMS, the participants created a username and password for the researcher. This way, the researcher was able to investigate the functioning of the OCOS processes of the institutions. The data obtained as a result of this document review process were used to support the views of the participants, which were the primary data source. After the DEC visits, the active data collection process continued with scientific meetings and phone calls with the participants.

In the data analysis procedure, descriptive analyses were used, considering IHEP's (2000) three dimensions (teaching-learning, course content procurement, and assessment-evaluation) while determining the main themes, and content analysis was utilized in the development of sub-themes and codes (Yildirim & Simsek, 2013). The interviews were recorded and transcribed verbatim. The NVivo 10 program was used to analyze the data. Subsequently, data reduction, data display, and conclusion-drawing and verification procedures were followed.

### Data Collection Tools

The interviews were the main source of information for the study. The documents shared by the participants and the LMSs of the institutions were the secondary source of data. A semi-structured interview form was prepared to explore the experiences of the participants in the OCOS process. The researcher developed the interview questions based on the dimensions of IHEP. Three experts reviewed the questions and finalized the forms. The interview questions included the following: personal information, teaching-learning processes, course content procurement, and assessment-evaluation. The term "personal information" refers to information such as name and surname, age, position in the institution, and duration of employment. The basic semi-structured interview questions in the dimensions of teaching and learning, course content procurement, and assessment and evaluation were as follows:

1. What kind of model do you apply to the (teaching-learning, course content procurement, and assessment-evaluation) processes in OCOS?
2. What influenced your decision on this model?

### Validity and Reliability

Different strategies were employed to ensure the validity and reliability of the study. First, triangulation was applied to the participants and data sources to ensure reliability. Participants in different positions, such as administrators, program coordinators, technical personnel, and course development specialists, were considered in participant triangulation. In the triangulation of data sources, semi-structured interviews were used as the primary data source. As the secondary data source, documents shared by the practitioners and the LMSs of the institutions were used.

Secondly, two experts with doctoral degrees in the Department of Distance Education checked the themes and calculated the reliability score using the inter-rater agreement formula.

$$\text{Reliability} = \frac{\text{Number of agreements}}{\text{Number of agreements} + \text{Number of disagreements}}$$

According to the formula above, the agreement score was found to be 83%, which showed inter-rater reliability (Miles & Huberman, 1994). Thirdly, to ensure prolonged engagement, the researcher visited the institutions and conducted face-to-face interviews with two participants a day to collect in-depth information. Fourthly, the raw data were described in detail and reported with direct quotations to ensure transferability. Finally, although the data were kept for confirmability, experts with PhD degrees in Distance Education reviewed the data to confirm the consistency of the study.

## RESULTS

Within the scope of OCOS, the inductive method was used to determine the factors affecting the decisions of DEC's regarding the models chosen by higher education institutions. This section presents the pull and push factors that influence the decisions of the institutions regarding the models to be used in each dimension.



## Factors Affecting Decisions on Models in the Teaching-Learning Dimension

In the teaching-learning dimension for the DECAs, semi-structured interviews and the LMSs of the institutions were used to determine the models they used in the online teaching process for on-campus students and the pull and push factors that were effective in their selection of these models. In this study, in the teaching-learning dimension, the models with mostly synchronous practices are expressed as “mostly synchronous,” the models with mostly asynchronous practices are expressed as “mostly asynchronous,” and the models that do not include synchronous practices are expressed as “completely asynchronous.” Looking at Figure 2, it is seen that C1 (mostly asynchronous) and C4 (mostly synchronous) preferred the same model each throughout the whole process, while C2 and C3 showed a model change.

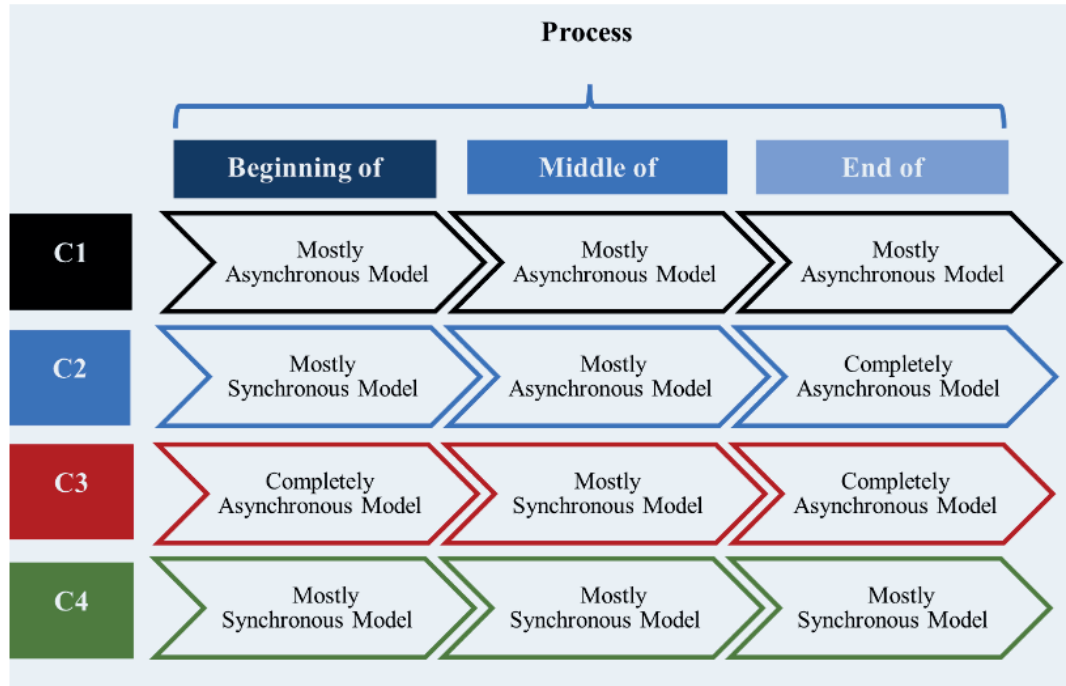


Figure 2. Changes in Teaching-Learning Models

Considering the LMS of C1, which is presented in Figure 3, it can be seen that they presented the courses asynchronously (pre-taken video, pdf), and this model could be used with interactive alternative practices (face-to-face office hours, open classroom, web TV, synchronous virtual classroom).

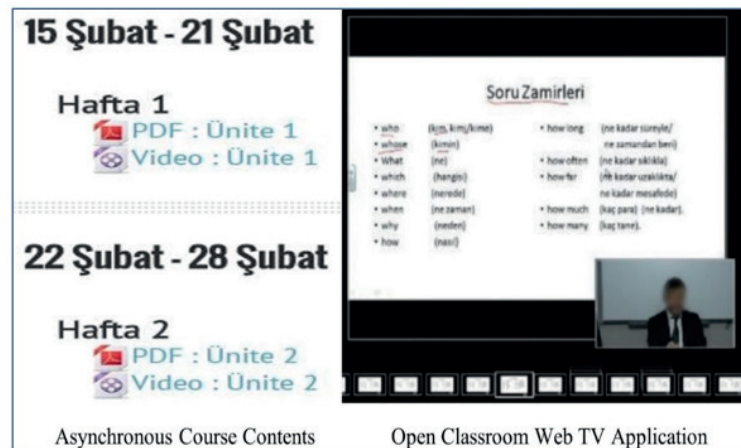
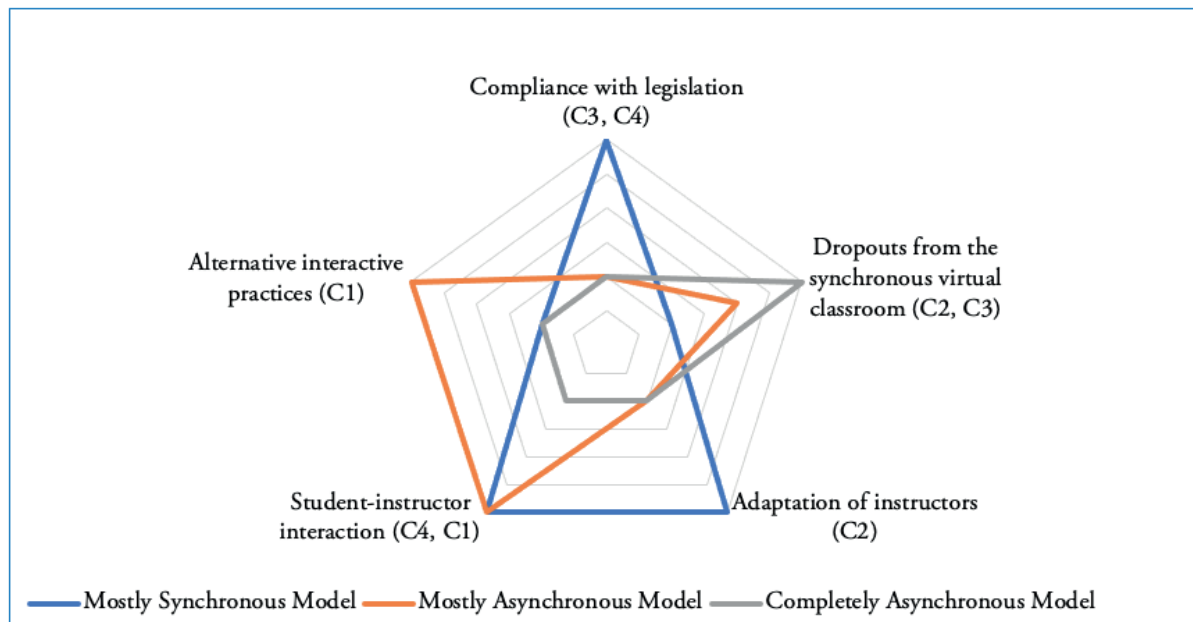


Figure 3. Asynchronous and Synchronous Practices Accessed on the LMS of C1

C4 preferred to provide the courses with a mostly synchronous model throughout the entire process. It was determined that C4 provided OCOS with a synchronous virtual classroom, and the recorded synchronous virtual classroom videos (asynchronous) could be watched again later. On the other hand, C2 and C3 tried various models in the process and finally decided to apply the completely asynchronous model, implemented only with asynchronous course contents (pre-shot video, ppt, pdf).



**Figure 4.** Factors Affecting Decisions on the Models in the Teaching-Learning Dimension

Figure 4 shows the pull and push factors that influenced the decision-making processes of the institutions on the teaching-learning model. As seen in Figure 4, when the model approached the factor, it represented the pull factor that influenced decision-making, whereas when it deviated from the factor, it represented the push factor that influenced decision-making. Accordingly, in Figure 4, the factors of compliance with legislation, student-instructor interaction, and adaptation of instructors were the pull factors for institutions to decide in favor of the mostly synchronous model, while the factor of dropouts from the synchronous virtual classroom was the push factor. Interactive alternative practices, student-instructor interaction, and the dropout rate in the synchronous virtual classroom acted as pull factors in deciding in favor of the mostly asynchronous model. The pull factor in choosing the completely asynchronous model was the dropout factor in the context of the synchronous virtual classroom. Factors including student-instructor interaction, interactive alternative practices, instructor adaptation, and compliance with legislation played a push-factor role in deciding on this model.

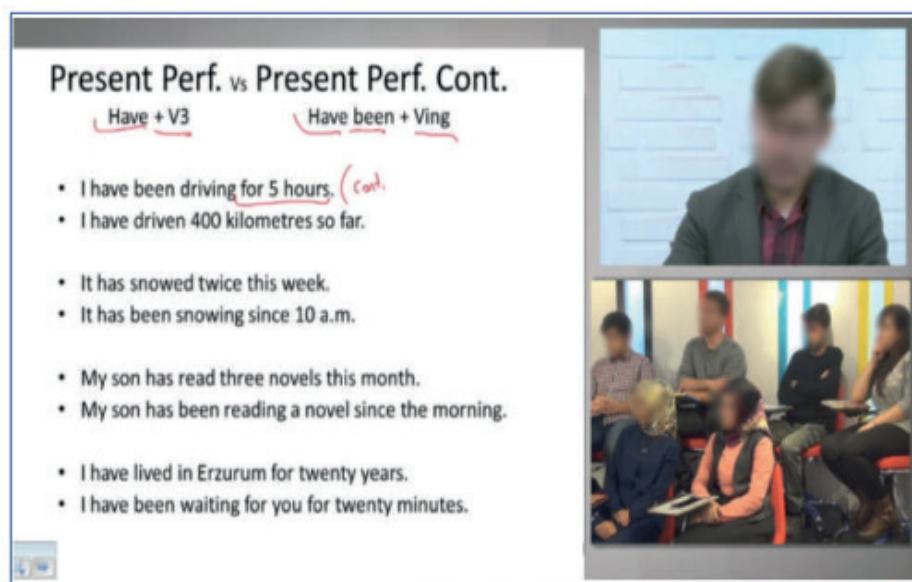
In the decision to implement the mostly synchronous model for C3 and C4, high sensitivity to compliance with legislation came to the fore. “When I came here, the mostly asynchronous model was being applied. Then, we implemented synchronous virtual classrooms for many years in accordance with the procedures and principles of CHE,” said F1, who worked as an administrator at C3, which stated that they decided to switch from a completely asynchronous to a mostly synchronous model due to the legislation issued by CHE. C4 developed their distance education guidelines based on the statement, “higher education institutions can make sub-regulations in line with the Procedures and Principles on Distance Education.” According to the C4 guidelines for distance education, at least 50% of courses should be synchronously offered, and different learning activities can support the other part. “The administration of these courses depends on the decision of the Senate. CHE leaves the decision to universities. We started these courses synchronously with the decision of the Senate, and we then continued asynchronously.” In the interview held with M1 at C2, it was seen that the decision made by the university senate was effective in deciding on the teaching-learning model to be adopted.



Another factor that was influential in deciding on the mostly synchronous model was the need to ensure the adaptation of instructors to distance education. “The instructors thought that distance education could not be as good as face-to-face education. They were worried that they would not be able to see the students and communicate with them through distance education. We preferred to start with a mostly synchronous model because they would adapt more easily, and they could see the students” (C2-M6). M6, who worked as the DEC program coordinator at C2, stated that they decided to start OCOS with this model, thinking that the instructors would adapt more quickly to the equally model. Similar results were also found at C4. “When we announced to our instructors that we decided to switch to these courses, they reacted very strongly. We received reactions saying that our ties with the students would be severed, and we would not be able to communicate. These reactions helped us make the decision to use a mostly synchronous model. We implemented this model to enable the instructor to interact with the students. This is because it is very important that the instructors are ready for the process. The more ready the instructor is, the more they get the student involved.” As to be understood from the statements of M3, who was an assistant administrator at C4, the adaptation of the instructors was effective in deciding on the model.

The rates of student dropout in synchronous virtual classrooms were influential in the decisions of the institutions to transition from the mostly synchronous model to the completely asynchronous model. “When it [the model] was first established, we offered the OCOS completely synchronously. They classes were being recorded, and the students could watch them again. Then, the model was changed because the number of students attending the synchronous virtual classes was not high, out of 14,000 students. As a result, it was decided to use an asynchronous system” (C2-M1). F1, who worked as an administrator at C3, stated that they decided to switch to the completely asynchronous model due to the low participation of students in virtual classes. “As the students were on campus while we were teaching, the participation rate in the synchronous virtual classes was 5%. Since most of the classrooms were empty, the instructors were explaining the courses to a blank screen. This was the main reason why we changed the course model to an asynchronous format.”

C1’s decision to use the mostly asynchronous model was influenced by the inclusion of interactive alternative practices in the model. “We include different face-to-face (office hours, open classroom) and online (online question and answer, web TV) interactive practices in these courses for students” (C1-F6). In Figure 5, there is an image of C1’s interactive web TV application.



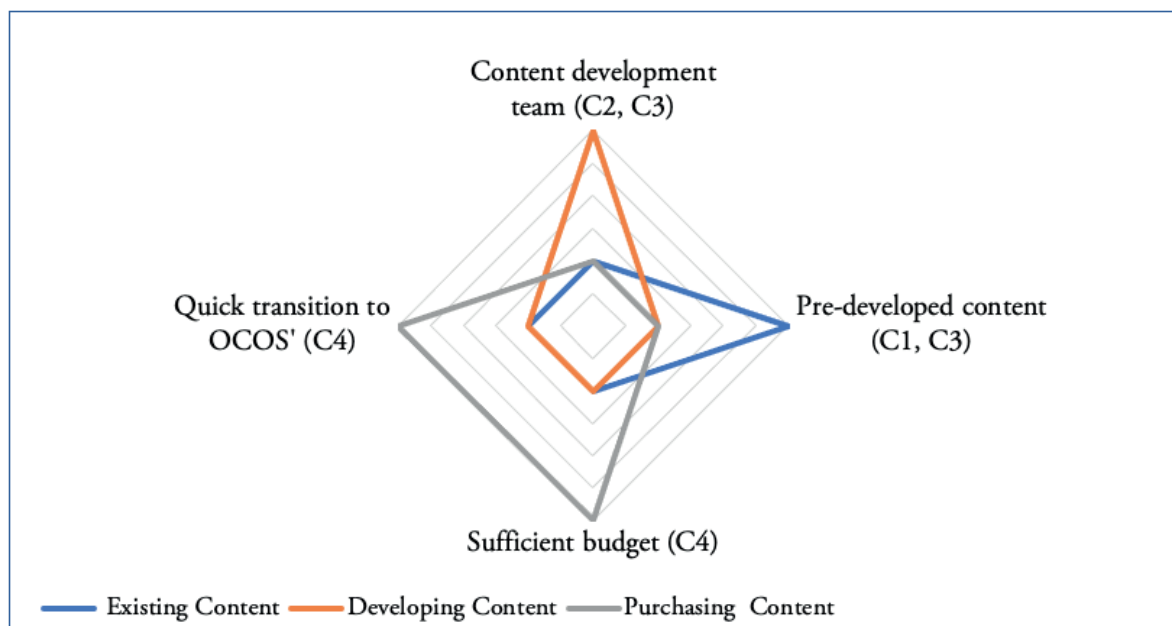
**Figure 5.** C1’s interactive web TV application

C4’s decision to use the mostly synchronous model was influenced by the idea that synchronous virtual classrooms provide effective interaction between students and instructors. “We want to make attendance

compulsory for these courses. Our instructors do not accept solely watching [the classes] from the archive. Therefore, more students attend synchronous virtual classrooms. If the instructor includes interaction in the courses and wants to be in the same settings as the student, the student participates” (C4-M1). E1, who worked at C4, stated that the students participate in the courses if the instructor involves interaction in the mostly synchronous courses.

### Factors Affecting Decisions on Models in the Course Content Procurement Dimension

Semi-structured interviews and institution documents were used to determine the factors affecting the decisions of the institutions regarding course content procurement models. Three models were determined in the dimension of course content procurement. These were using existing content, developing content, and purchasing content from a company.



**Figure 6.** Factors Affecting Decisions on the Models in the Course Content Procurement Dimension

Figure 6 shows the pull and push factors that influenced the decision-making processes of institutions regarding the course content procurement model. As seen in Figure 6, when the model approached the factor, it represented the pull factor affecting decision-making, and when it deviated from the factor, it represented the push factor affecting decision-making. The factor of having pre-developed content acted as a pull factor when the organization decided on the model of using existing content within the scope of OCOS. While the pull factor in deciding on the content development model was the content development team, the push factors were a sufficient budget and a quick transition to OCOS. A sufficient budget and a quick transition to OCOS acted as pull factors in deciding in favor of the content purchasing model. The lack of pre-developed content and a content development team were the push factors for this model.

F3, working at C3, stated that having a content development team at the DEC was influential in their decision to develop content. “We have instructors who are not only instructional designers but also subject-matter experts and developers. We are all trying to get it done together somehow.” According to the statement of F4, who worked in the content development team at C2, it was determined that there should be a content development team within the institution to develop content. “At first, subject area experts, instructional designers, and graphic designers came together. What are the materials that the subject area experts want to use? Here is a video, here is a visual on this topic. We designed this process together.” Similar results were also found in the annual report of C2.

The pre-developed contents of institutions were effective in their decisions to use existing content in OCOS. “In particular, since the open education faculty supports us, they provided the contents because it was copyrighted content.” It was determined that they did not have to develop these pieces of content again because they had pre-developed course content according to M2 working at C1. It was determined that pre-developed content was used at C3 as well. “We had an advantage. First, we had distance education programs. Therefore, we developed this content for distance education programs. We used that content first” (C3-M7).

One of the factors affecting the decision to purchase content from a private company was the sufficiency of the institution’s budget. “The decision was made to quickly transition to OCOS. We had neither the time nor the staff to develop content. This is why we purchased the content. The institution provided a sufficient budget for the content” (C4-M3). According to M3, who worked as an assistant administrator at C4, the budget was provided by the institution for the purchase of the content.

Another factor affecting the decision to purchase content from a private company was the quick transition of the institutions to the OCOS delivery process. M1, who worked as an administrator at C4, stated that they preferred to purchase from a private company because they thought that the content developed in a short time would be of poor quality. “When the center was first established, it was decided to transition to OCOS in a very short time, and it was out of the question to develop content in a short time. The content was contracted and purchased from a private company” (C4-M1).

### **Factors Affecting Decisions on Models in the Assessment-Evaluation Dimension**

Semi-structured interviews and documents from the institutions were used to determine factors affecting the decisions of the institutions regarding the model they used in the assessment and evaluation dimension. The models are first explained in this section to help understand the results better. Then, the factors affecting decision-making in the process of selecting these models are presented.

The four higher education institutions examined within the scope of this study decided to apply central, simultaneous, and independent exam models in the OCOS process. In the central exam model (C1), a single center carries out the preparation of questions, the printing of question papers, sending them to the units, conducting the exam, and evaluating the exam papers. Students in all units take exams face-to-face on the same day and at the same time in the different units specified for them. The central exam implementation process in C1’s orientation report is shown in Figure 7.



**Figure 7.** C1’s Proctored Face-to-Face Central Exam Practice

The feature distinguishing the simultaneous exam model (C2, C3) from the central exam model is that it is carried out by commissions created for each course rather than a single center. Exam questions prepared by

commissions are sent to relevant units, and all students take the proctored face-to-face exam on the same day and time in the units they are registered to. Considering C3's LMS, which used the simultaneous exam model, it was found that its midterm exams were held on an online exam platform that has a non-proctored form, as shown in Figure 8.

Yarıyıl Sonu Sınavı / Temel Bilgi Teknolojileri-I

1 - Aşağıdaki parolalardan hangisi parola güvenliği prensiplerine uygun güçlü parola örneğidir?

a) ☐ 246810  
b) ☐ Parola  
c) ☐ 2020  
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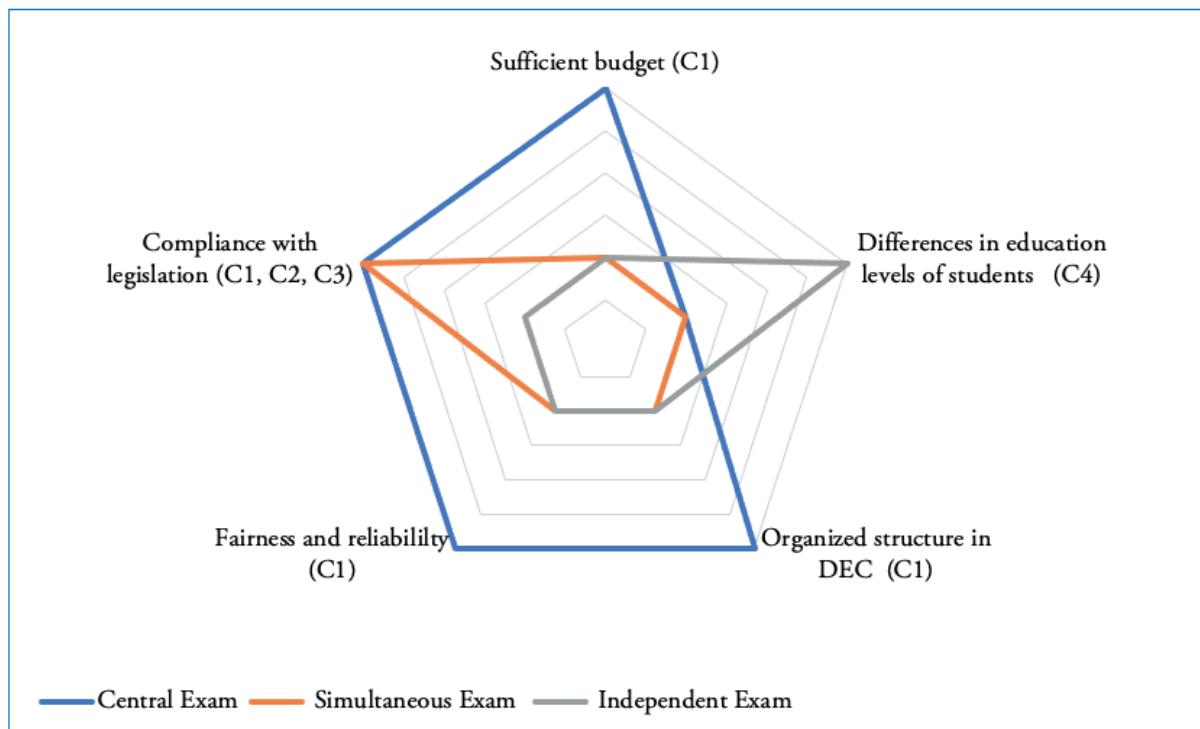
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Cevap Listesi

1	2	3	4	5	6
7	8	9	10	11	12
13	14	15	16	17	18
19	20	21	22	23	24
25	26	27	28	29	30
31	32	33	34	35	36
37	38	39	40		

**Figure 8.** C3's Non-Proctored Online Exam Platform

In the independent exam model (C4), the instructor of the course carries out the entire assessment-evaluation process. In this model, no center or commission is involved in assessment-evaluation. Exams can be held on different days and times, and different questions can be asked to students in each branch.



**Figure 9.** Factors Affecting Decisions on the Models in the Assessment-Evaluation Dimension



Figure 9 shows the pull and push factors affecting the decision-making processes of the institutions regarding the assessment-evaluation models. As seen in Figure 9, when the model approached the factor, it represented the pull factor affecting decision-making, and when it deviated from the factor, it represented the push factor affecting decision-making. A sufficient budget, an organized structure in DEC, fairness and reliability, and compliance with legislation all acted as pull factors in choosing the central exam model. Compliance with legislation was a pull factor that made it more likely to use the simultaneous exam model. Factors including the lack of an organized structure in DEC and an insufficient budget were found to be push factors for deciding in favor of the simultaneous model. On the other hand, differences in the education levels of students acted as a pull factor for the institutions to decide in favor of the independent exam model. The push factors influencing the decision to use the independent exam model were an insufficient budget and a disorganized structure in DEC.

According to the examination of the website of C1, C1 had a sufficient budget for preparing, printing, and evaluating the documents used in the exams in the central exam model. “We outsource only the printing of the exam booklets because it requires a large workload. Since we have paid programs, we can cover this cost” (C1-M2). M2, who worked as the exam coordinator at C1, stated that the institution had a sufficient budget due to its paid programs. Figure 9 shows images from the exam unit that C1 used for printing and sorting the exam documents.



**Figure 10.** C1’s Exam Organization Unit

Having an organized structure within the DEC was effective in deciding in favor of the central exam model. The exam unit in C1 had an exam coordinator, an assistant, and IT personnel responsible for developing and using the necessary software. “We develop software with our team, according to our own needs” (C1-M4). M4, who worked as IT staff at C1, stated that they developed the software necessary to prepare exam documents. “I send the exam documents to my colleague in charge of the printing unit. He prints them directly in the printing unit in the center with a semi-professional machine.” (C1-M5). M5, who also worked as IT staff at C1, stated that the printing of the prepared exam documents was carried out in the printing unit at the institution.

Compliance with legislation was effective in the decision of C1 in favor of the central exam model and the decisions of C2 and C3 in favor of the simultaneous exam model. In the legislation published by CHE (2014), it is seen that “midterm exams shall be held in a non-proctored manner via electronic media if desired so, and final exams and make-up exams must be held face-to-face or electronically in a proctored manner.” The emphasis on the supervised face-to-face exam practice in the legislation was influential in the decision of C1 in favor of the central exam model. The legislation states that all exams, especially the final exams, should be proctored. “Here, the legislation offers a face-to-face or online option. For this reason, we preferred to do it face-to-face, as it was within our means. We hold both midterms and finals in a centralized, face-to-face, and proctored manner” (C1-M3). “The legislation says you can hold midterms in a non-proctored manner, but you must hold final exams in a proctored manner. Therefore, we held the midterms in a non-proctored and online form. It saved paper, and the assessment-evaluation process was completed quickly. However, the finals had to be proctored. We are not equipped to proctor online exams. For this reason, we decided that all

students should take the exam in a face-to-face, proctored manner at the same time” (C3-M8). The decision of C3 in favor of the simultaneous model was because the clause about supervised exams was included in the legislation.

The factor of fairness and reliability was influential in the decision of C1 in favor of the central exam model. “It is very appreciated to have a fair system in terms of assessment and evaluation. We are holding central exams here. It is a very serious responsibility; it is very tiring, and it takes a lot of effort. In my opinion, the assessment-evaluation system should be very robust for students to continue attending OCOSs. We are under such a responsibility just to have a quality system and make the system work. Otherwise, we can just say that you are qualified to teach” (C1-M1). M1, who worked as an administrator at C1, stated that students would pay more importance to these courses if central exams were conducted reliably. “We have our exam team. We are strong in that sense. However, a large organization is required for the preparation of central exams. We start preparations 2-3 weeks in advance. It takes a lot of time. Additionally, printing exam documents is costly. But we prefer face-to-face central exams to carry out assessments and evaluations in a fair and reliable way” (C1-M5). M5, who served as an assistant exam coordinator at C1, similarly stated that central exams bring a lot of workload to the institution and are costly, but institutions prefer them because they are reliable.

The fact based on the reports of the participants that C4 did not have the organized structure necessary for preparing the exam documents and ensuring the reliable administration of exams influenced their decision to transition from the central exam model to the independent exam model. The difference in the education levels of students was also found effective in abandoning the central exam model. M2, who worked as an assistant administrator at C4, stated that the difference in the education levels of students in the OCOSs taken by all students at the associate and undergraduate levels was reflected negatively on the exam results. “The success level of a student in the vocational school and a student in engineering is not the same. There were serious success cases on the one hand and serious failures on the other. In a classroom with 40 students in the vocational school, 3-4 students passed in the final” (C4- M2). “About 4000 students failed and will retake the exam, which is more than half. We were worried that this situation would be perceived as the institution’s failure. This is why we decided to change the model.” M1, who worked as an administrator at C4, stated that they decided to change the central exam model to the independent exam model, considering that the difference in the education levels of students could have been perceived as the institution’s failure. “When we ask questions based on the level of the students in the faculties, the students in the vocational schools experience great difficulties. When we ask questions according to the level of the vocational school students, they seem simple to faculty students. This is the most difficult part of the central exam system. ... because there are significant differences in student achievement levels” (C1- M3). It was determined that the differences in the education levels of students in C1, where the central exam model was applied, were very high, but this factor was not effective in making a decision on model selection.

## DISCUSSION AND RECOMMENDATIONS

In the teaching-learning dimension of our study, there were mostly synchronous, mostly asynchronous, and completely asynchronous models. Factors such as student-instructor interaction, compliance with legislation, adaptation of instructors, interactive alternative practices, and dropout rates in synchronous virtual classrooms were effective in influencing the decisions of the institutions regarding these models. One of the factors affecting the preference for the mostly synchronous model was the idea that the instructors will adapt easily due to the similarity of OCOS to face-to-face classroom environments. In terms of being simultaneous and instructor-centered, synchronous virtual classrooms are similar to face-to-face classroom environments (Ozmen & Ediz, 2002). However, this model may be ineffective in relieving the concerns of the instructors (Kayaduman & Demirel, 2019). Instructors who teach for the first time in synchronous virtual classrooms may have negative attitudes toward change and experience insufficient technological and pedagogical content knowledge (Turnbull et al., 2022). To overcome these obstacles, the necessity of the provision of pedagogical, technical, and social support by the institutional administration comes to the fore.



It was determined that the institutions that considered the positive effects of interaction on learning in OCOS preferred a synchronous or mostly asynchronous model. Studies have shown that in the mostly synchronous approach, the constant interaction of students with their peers and instructors increases their motivation and provides a more social aspect to the learning experience (Hrastinski, 2008). The same is true for the mostly asynchronous model supported by interactive alternative practices such as open classrooms, office hours, and open classroom web TV applications. However, the results of our study showed that students did not sufficiently participate in these practices. This situation caused the institutions to turn to a completely asynchronous model with no student-instructor interaction. In this model where there is no interaction, a moderate level of learning takes place, and the model is ineffective for in-depth learning (Ibicioglu & Antalyali, 2005). Heilporn et al. (2021) included practices similar to the interactive practices in our study, and student participation was high. It is thought that the reasons for differences in the results of the two studies in which the same model was applied may be the interactions of instructors with students (Yazgan, 2022) and the characteristics of the courses, such as being a common course, a credit course, or requiring compulsory attendance (Karapinar et al., 2018). As a result, it was determined that the characteristics of instructors and students are effective in deciding on the models to be applied in the teaching-learning aspect of institutions.

The decision to adapt a simultaneously weighted model was influenced by the fact that this model was in compliance with the legislation. However, the fact that the articles related to OCOS in the legislation were not clear enough caused the administrators to make choices in line with the means of the institutions. The clarity of the articles in the legislation is very important in guiding institutions in the process of developing and disseminating BL practices, providing a framework for the operation of courses, and the emergence of innovative applications (Gunduz et al., 2020; Gonzalez & Roig, 2018). In the presence of strict restrictions in the legislation, administrators have difficulties making decisions and take less risk (Gunduz et al., 2020). Zhang et al. (2012) stated that these limitations might hinder the implementation of different teaching and learning models. Therefore, including explanatory clauses while developing legislation and providing flexibility for applying different models will facilitate easier decision-making among administrators.

In the course content procurement aspect of the institutions examined in this study, there were models of using existing content, developing course content, and purchasing content from a private company. Factors such as having pre-developed content, having a content development team, making a quick transition to OCOS, and having a sufficient budget were effective in deciding on these models. Institutions that do not have pre-developed content but have content development teams prefer to develop their own course content. However, Mete and Demir (2021) revealed that the problems experienced by people in a content development team at the point of interaction affect the quality of course content negatively. In our study, it was determined that institutions that do not have a content development team and make a quick transition to OCOS have to purchase their course content. Although institutions prefer cost-effective content purchasing processes (Arac & Akcadag, 2022), they should not lose sight of the quality of course content at this point. Gurer et al. (2016) determined that contents purchased from a private company contained insufficient, incomplete, and even inaccurate information. Consequently, it was seen that institutions that ran OCOS had difficulties procuring course content, including human resources, time, and budget problems, so they preferred the model closest to them. However, quality course content can be developed by establishing commissions of experts in open and distance learning. Reusing, retaining, revising, remixing, and redistributing these already developed pieces of content as Open Educational Resources (OER) may effectively save institutions human resources, time, effort, and budget.

In the assessment-evaluation dimension of our study, central, simultaneous, and independent exam models were identified. Factors such as having a fair and reliable system, having a sufficient budget, having a well-organized DEC structure, complying with legislation, and having students at different educational levels were effective in assisting institutions in making decisions based on these models. The fact that OCOSs are non-credited in most institutions causes them to be neglected by students (Karapinar et al., 2018). Institutions that want students to care about these courses have preferred the central exam model, which is more reliable than other exams. Similarly, the high reliability of face-to-face central exams at Athabasca University has

been a reason for preference in credit courses (Wang, 2011). If courses are credited, and reliable face-to-face central exams are administered, this will attract the interest of students in OCOS. Giving OCOS the same number of credits at all higher education institutions will also contribute to this.

Another factor that affects the preference for the central exam model by institutions is the sufficiency of their budget. Institutions that can cover costs such as the costs of printing exam materials and payments for transportation operations in central exams (Kayabas, 2020) prefer proctored face-to-face central exams because these exams are more reliable. While Balta (2014) argued that face-to-face central exams are cumbersome and laborious, Kayabas (2020) stated that institutions prefer the proctored online exam model to reduce the high cost of these exams. At institutions where the number of students is high, and there are not enough computer laboratories, the non-proctored online exam model can be preferred instead of the proctored online exam model. However, in such a model, situations such as someone else taking the exam instead of the student, getting help from others, or using digital media (Bozkurt & Ucar, 2018) reduce the reliability of exams.

The institution must have an organized structure in the DEC for the central exam model to be carried out systematically. According to Dundar et al. (2017), academic, technical, and administrative personnel are in communication and cooperation while carrying out exam services, and therefore, they can make examination arrangements more effectively and efficiently. DEC's that do not have an organized structure prefer simultaneous exams or independent exam models. The idea that the difference between the exam success scores of undergraduate and associate degree students could be perceived as the institution's failure was effective in making the institutions that were examined in this study prefer the independent exam model.

## CONCLUSION

In line with the results obtained in this study, Figure 11 presents the pull and push factors that were thought to help institutions decide on the most appropriate models for their capabilities in the process of offering OCOSs. The factors influencing the decision-making process under each dimension are explained below.

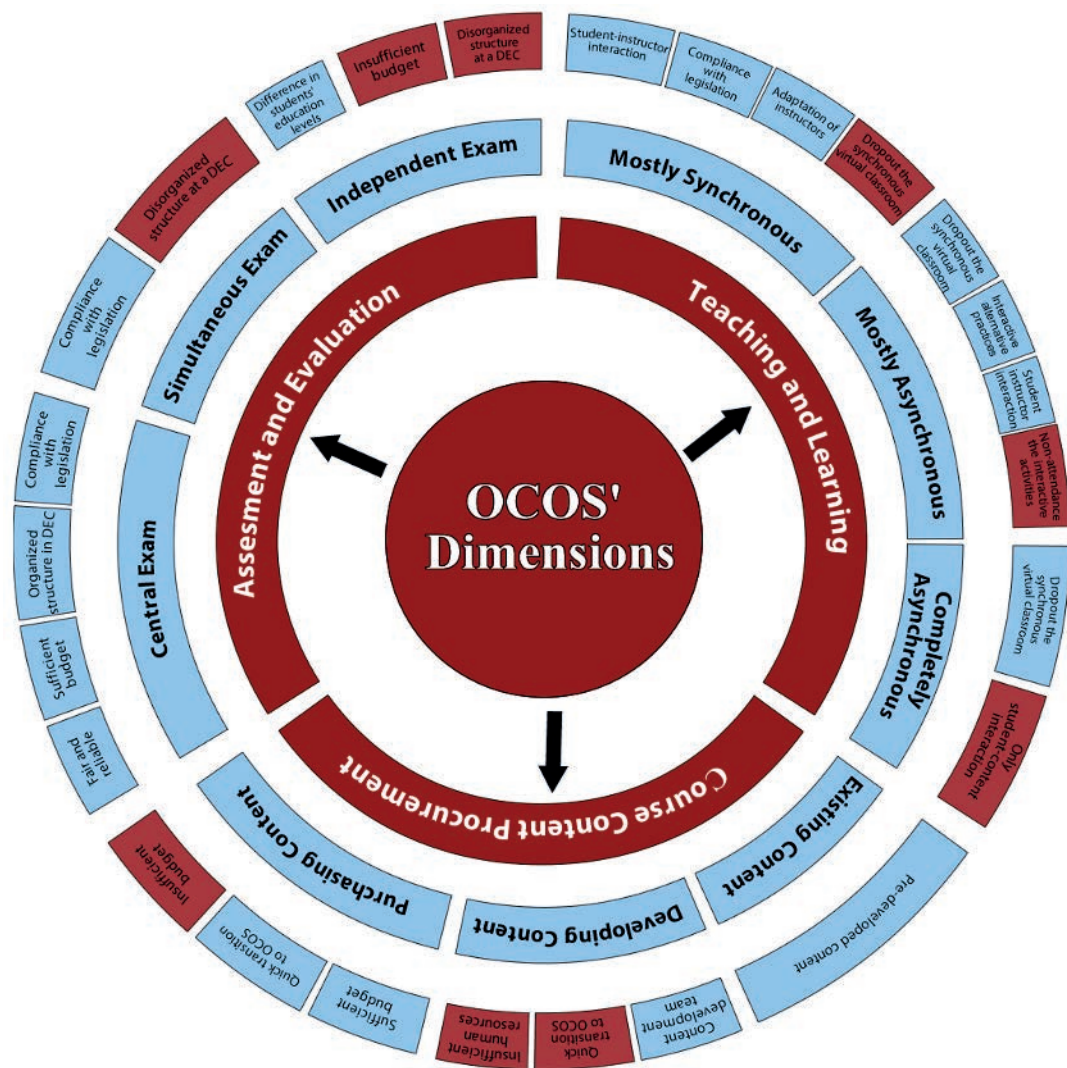
### Teaching-Learning Dimension

Institutions need to decide on what types of teaching-learning processes they will conduct before they start offering OCOSs. Accordingly, they can use three different models: mostly synchronous, mostly asynchronous, and completely asynchronous models. The factors that institutions should consider when deciding on these models are described below.

#### Mostly Synchronous Model

The first pull factor that influenced the decisions of the institutions to implement this model was that it allows the students to have high levels of interaction with the instructor. In this model, the students and the instructor of the course meet in real-time video chats in synchronous virtual classrooms at the times and days set by the course schedule.

The other pull factor was that this model is included in the relevant legislation. The legislation emphasizes the inclusion of synchronous virtual classroom practices in OCOS. It is also stated in the legislation that institutions can make their own Senate decisions. This allows institutions to implement different models. Ensuring the adaptation of instructors was one of the pull factors in selecting the mostly synchronous model at the institutions whose members were included in this study. If the instructors have concerns that distance education cannot replace face-to-face education, the institution can use this model to ensure easy instructor adaptation to the process because the synchronous virtual classroom practices in this model are similar to the face-to-face classroom environment, and they provide instant communication. However, institutions should take into account a push factor such as students not participating in synchronous virtual classes at all or stopping participating in synchronous virtual classrooms in the mostly synchronous model. Therefore, it is very important for institutions to implement this model after making the necessary arrangements and taking the necessary precautions.



**Figure 11.** Factors Influencing Model Decision-Making in Online Courses for On-Campus Students

### Mostly Asynchronous Model

One of the significant results of this study was that a factor that was a push factor for one model could be a pull factor for another model. For example, an institution may choose a mostly synchronous model without accounting for the fact that students may not participate in synchronous virtual classrooms. If students drop out of the synchronous virtual classrooms, the institution may decide to transition to a mostly asynchronous or a completely asynchronous model. In such a case, the factor of dropout in synchronous virtual classrooms, which was a push factor for the mostly synchronous model, became a pull factor for the mostly asynchronous model. The interaction between the student and the instructor was another pull factor in choosing the mostly asynchronous model. In the mostly asynchronous model, interactive alternative practices could take place mostly synchronously (online counseling hours, web TV) and occasionally face-to-face (open class, office hours). The non-attendance of students in these activities was a push factor for the institutions regarding the mostly asynchronous model. Therefore, it is very important for institutions to design such activities in a way that will increase the motivation of students, attract their attention, and ensure their attendance.

### Completely Asynchronous Model

As in the mostly asynchronous model, dropping out of synchronous virtual classrooms was a pull factor for the completely asynchronous model. In the completely asynchronous model, the possibility of students not interacting with the instructors at all and only interacting with the course content was a push factor for the institutions.

## **Course Content Procurement Dimension**

Institutions need to decide on how to procure course content before they start offering OCOSs. The results of this study showed that institutions can decide whether to use existing content, develop content, or purchase content. Institutions are expected to decide on these models within their own capabilities, taking certain factors into account.

### **Existing Content**

The usage of previously developed content by institutions hosting OCOS for these courses may act as a pull factor for them to use this content. If institutions have distance education programs that had been conducted before the OCOSs, they can use the content that applies to the same curriculum as the OCOSs. In this study, there were no push factors related to the use of existing content.

### **Developing Content**

Having a team of graphic designers, instructional designers, and content development specialists within the institution plays a role as a pull factor in deciding to develop content within the institution. Subject matter experts should also be included in this team while developing the content. After determining the scope of the course content, subject area experts should share the written and visual elements they want to include in the course material with instructional designers and graphic designers and make the final decision together. One of the push factors that may affect institutions in the process of implementing this model is that they must have a fast transition to OCOSs and might not have enough time. If institutions do not have enough time to develop content, they may need to implement alternative models until they develop their own course content. This is because it is very important that the content development process be completed before the course execution process begins. Another push factor is the insufficient number and quality of team members. If there are not enough human resources of sufficient quality and quantity, the content development process may be interrupted, for example, when there is a case of team turnover. For this reason, organizations should make sure that they have sufficient human resources when establishing a content development team.

### **Purchasing Content**

One of the pull factors that influences the decisions of institutions to purchase content from private companies within the scope of OCOSs is a quick transition to the OCOS delivery process. Institutions whose course content development teams do not have enough time to develop content and do not have pre-developed content may prefer the content purchasing model. In this model, content is provided by companies in the form of a SCORM package. If there is a request for updates from the instructors teaching the course, these requests can be evaluated by the institution, and the companies can be asked to make the necessary updates. Of course, it is very important that the institution should have a sufficient budget to purchase the content. Otherwise, an insufficient budget is a pushing factor in the decision-making process regarding this model.

## **Assessment-Evaluation Dimension**

Institutions need to decide what kind of model they will apply in the assessment-evaluation process before they start offering OCOSs. The results of this study showed that such institutions could decide among centralized, simultaneous, and independent exam models in the assessment-evaluation dimension, as shown in Figure 10. The pull and push factors affecting the 'decisions of institutions on these models are explained below.

### **Central Exam**

In the central exam model, questions are prepared in cooperation with the DEC assessment-evaluation team and subject area experts. Documents such as question booklets, optical forms, exam guidelines, and student



entrance certificates are printed by the DEC. All students take the exam on the same day and at the same time at the exam locations listed on their exam entry documents. The instructors assigned by the DEC for proctoring deliver the exam documents to the building examiner at the end of the exam. Exam documents from all units are collected at the DEC. Exam results are evaluated on optical readers at the DEC, and these results are sent to the instructor of the course. Instructors announce exam grades on the LMS.

One of the pull factors for institutions to decide to implement this model is the perception that it is fair and reliable. When all students are examined at the same time, and the exams are evaluated by the DEC, these exams are considered fair and reliable. Another pull factor that is effective in the decision to conduct centralized exams is the sufficiency of the institution's budget. If the institution does not have the budget to purchase the necessary equipment to print the exam documents or to purchase printing services, it will not be possible to hold centralized exams. Therefore, while a sufficient budget is a pull factor in the central exam implementation process, an insufficient budget is a push factor. The existence of an organized structure within the institution that carries out examination procedures is also a pull factor in the implementation of the central examination model. Many processes, from the preparation of exam questions to the evaluation of exams, are carried out by the team within the organization. Therefore, it is highly necessary to have an organizational structure that can carry out all these processes within the unit. Another pull factor that influences institutions in the decision-making process regarding this model is the inclusion of this model in the legislation. In particular, the fact that there is an article on holding the final exams at the same time, in a proctored and face-to-face manner, is effective in the decision of an institution to use this model.

### **Simultaneous Exam**

The simultaneous exam model is similar to the central exam model. However, it has certain differences. In this exam model, exam questions are prepared by commissions consisting of instructors of the courses, and the exam documents are printed by the instructors. The exam is held by the units (faculties and vocational schools) on the same day and at the same time in the exam halls located in the units of the students. Each unit assigns the instructors who will proctor the exam. The exams are evaluated, and their grades entered into the system by the instructors in the commission. In this model, the DEC is not involved at any stage of the assessment and evaluation process. As with the central exam model, the fact that this model is included in the legislation makes it a pull factor for institutions to decide to implement the simultaneous exam model. This is because both models meet the requirements in the legislation that the final exams be held simultaneously, both in a proctored and face-to-face manner. A disorganized structure at a DEC is a pulling factor in deciding in favor of the simultaneous exam model. If institutions do not have sufficient personnel to create an organizational structure for exams, they can decide to use the simultaneous exam model.

### **Independent Exam**

In the independent exam model, the entire assessment and evaluation process is carried out by the instructor of the course. In this model, no center or commission is involved in the assessment and evaluation process. Exams can be held on different days and at different times, with different questions prepared for each class. Insufficient budgets and a disorganized structure within the institution make organizing exams difficult, which is one of the motivating factors for institutions to implement independent exams. The pull factor in this model is the difference in the educational levels of students. In the central and simultaneous exam models, the students are asked the same questions. While these questions are difficult for vocational school students, they are easy for undergraduate faculty students. Institutions may therefore decide to implement an independent exam model. However, asking different questions reduces the likelihood of this model being fair and reliable. Therefore, the factor of being fair and reliable, which is a pull factor in the central exam model, becomes a push factor in this model.

## **LIMITATIONS AND FUTURE RESEARCH**

In this study, DEC's with different experiences were selected using the snowball and maximum variation sampling methods for participant inclusion. The results on the collected data are limited to interviews and

examinations carried out at four DECs. Since this is a qualitative study and requires a lot of time to collect, analyze, and report data, the obtained data are limited to the 2016–2019 period. In future research, the effects of different approaches on student motivation, such as OCOS with or without course credit, in a paid or unpaid form, requiring or not requiring compulsory attendance, can be examined. This study involved the examination of three dimensions of IHEP, and future studies may explore the dimensions of the student, instructor, and institutional support. Therefore, researchers can contribute to the field of distance education with more comprehensive studies that examine the dimensions of IHEP in depth. Finally, the DEC team provided the sample of this study. Hence, future research may involve senior university administration, instructors, and students.

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