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A Study of Academic Integrity in Online Distance Education

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ABSTRACT *The global Covid-19 pandemic has accelerated the implementation of distance education and training, resulting in a shift of course activities and processes to an online environment. The introduction of online exams in this new educational landscape has raised concerns among learners regarding academic honesty. This situation has prompted worries about safeguarding the ongoing institutional identity and reputation of academic institutions, thereby raising questions about academic honesty. This study presents a systematic review of the literature on protecting academic honesty in online examinations, focusing on recent publications within the last five years. This period is marked by intensified online exam evaluations and the impact of Covid-19. Based on the literature review, a total of 50 studies were examined by three experts in the field. Descriptive and content analysis techniques were utilized to identify research trends. The findings of these studies indicated that learners tend to accept unethical behavior violations, which are also increasing. In conclusion, it is recommended that future studies consider factors such as a wider range of publication years, employed research methods, increased publication rates, success rates, dataset size, and the utilization of assistive technologies.*

Keywords : Distance Education, Online Cheating Detection, Academic Honesty, Online Academic Honesty

Çevrimiçi Uzaktan Eğitimde Akademik Dürüstlük Üzerine Bir Çalışma

ÖZ *Dünya genelinde Covid-19 salgınının ortaya çıkması uzaktan eğitim ve öğretimin çok acil bir şekilde hayata geçirilmesine ve bunun sonucunda ders etkinlikleri ile süreçleri çevrimiçi bir ortama taşınmasına neden oldu. Bu*

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durum akademik kurumlar nezdinde devam eden kurumsal kimliği ve itibarı korumak olarak endişelere yol açmış ve akademik bütünlük sorgulanmaya başlanmıştır. Bu makale çevrimiçi sınavlarda akademik bütünlüğü korumak adına literatürde yer alan yayınların, yayınlama amacına göre sistematik bir incelemesini ele almaktadır. Çevrimiçi sınav değerlendirmelerinin yoğunlaştığı ve Covid-19'un da etkili olduğu son beş yıldaki yayınlar dikkate alınmıştır. Literatür incelemesi sonucu 50 yayın, yayınlama amacına hizmet etmeleri dikkate alınarak analiz edilmiştir. Yapılan analizlerde yayınların kopya çekme, akademik dürüstlük incelemesi ve akademik dürüstlüğe yönelik tutum ve algıları incelemek amacıyla yayınlandıkları tespit edilmiştir. Amaç doğrultusunda çevrimiçi sınavlarda etik olmayan davranış ihlalleri, kullanılan gözetimli ve gözetimsiz teknolojilerle, sesli yardımcı teknolojilerle, çeşitli sınav senaryolarıyla, kullanılan soru tipleriyle, yapılandırılmış görüşme formları ve anket uygulamalarıyla tespit edilmeye çalışılmıştır. Yapılan çalışmalar etik olmayan davranış ihlallerinin öğrenenler tarafından kabul edildiğini ve sürekli arttığını göstermiştir. Literatürde yayınların kapsadığı yıllar geniş tutularak, kullanılan yöntemler, yayın sayısındaki artış, bunların başarım oranları, veri seti ve kullanılan yardımcı teknolojiler gibi parametreler dikkate alınması geleceğe yönelik yapılacak çalışmalarda akademik bütünlük açısından araştırmacılara fayda sağlayabilir.

Anahtar kelimeler : Uzaktan Eğitim, Akademik Dürüstlük, Çevrimiçi Akademik Dürüstlük

INTRODUCTION

Education is focused on fostering knowledge and promoting behavioral change in learners through interactive engagement between teachers and students utilizing various tools. The idea of distance in education refers to the physical separation between teachers and students. According to Kaya (2023, p. 410) in the realm of distance education, the involvement and whereabouts of instructors and administrators can generally be defined in relation to place and time, whereas students have the flexibility to access educational and training processes remotely from any location at their convenience.

Distance education is a multidisciplinary field that effectively utilizes information technologies to overcome barriers between learning resources, students, and instructors (Atasel, 2023, p. 62). The proliferation of communication and multimedia technologies that can be adapted to the educational context has expanded opportunities for lifelong learning and education, regardless of time and location (Kavrat & Türel 2013, p. 23). According to Amzalag et al. (2021, p. 243), the global outbreak of Covid-19 has further underscored the significance of distance education, prompting educational institutions to shift all their teaching and training processes to online platforms. According to Kuang Chiang et al. (2022, p. 909), today,

the demand for online courses is increasing day by day due to the opportunities offered by Internet technologies. According to Özen & Düzenli (2023, p. 316), with technological advancements in online educational environments, the number of students engaging with these platforms is steadily rising.

According to Almuhanna (2023, p. 130), with the widespread adoption of distance education, the incorporation of online assessments has become inevitable. There is a growing interest in utilizing online formative assessment activities in both distance education and traditional teaching methods. According to Kuang Chiang et al. (2022, p. 908), in the online learning process, teachers and educational institutions need to be pedagogically supported to evaluate students' academic integrity online. According to Marriott (2009, p. 237), e-assessment presents opportunities to develop innovative assessment practices that engage students and enhance their motivation to learn. Online learning and assessment should be viewed as a comprehensive system for educating students and evaluating their academic achievements. According to Gaytan & McEwen (2007, p. 130), understanding online learning and assessment is crucial in a time where educational institutions face increasing demands for accountability, growth, and excellence.

E-assessment has many advantages: flexibility in conducting exams in terms of location and timing, lower cost than traditional assessment, using multimedia elements, reviewing questions, creating exams from question banks, instant feedback and automatic grading, which also provides significant advantages for instructors (Gaytan & McEwen 2007, p. 130; James, 2016, p. ; Hebebci & Yılmaz, 2022, p. 130).

According to Hebebci & Yılmaz (2022, p. 105) and Aslan (2024, p. 121), although online assessment and evaluation methods offer more alternatives than those used in face-to-face education, providing conveniences and opportunities such as face-to-face multidimensional assessment, time and space independence, they have also brought some negative aspects. These include requirements for hardware, software, and internet infrastructure, laborious question preparation, budget and time demands for managing and operating online systems, difficulties in preventing cheating in online exams, ensuring system security, and addressing instant failures or interruptions during the exam process. These challenges require more preparation compared to face-to-face education.

Efforts to detect unethical behaviors in online distance education exam environments are crucial for protecting the academic honesty of learners and the reputation of relevant institutions. Behaviors such as cheating, plagiarism, dishonesty, lying, and making excuses are contrary to the goals of education and training processes, and pose significant problems for institutions.

The purpose of this article is to systematically review 50 publications in the literature to protect academic integrity in online distance education exams, to examine cheating,

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academic honesty review, and attitudes and perceptions towards academic honesty. In line with the purpose of the study, publications were tried to determine unethical behavior violations in online exams, supervised and unsupervised technologies used, voice assistive technologies, various exam scenarios, question types used, structured interview forms and survey applications

1. ONLINE ACADEMIC HONESTY

In synchronous online learning, students and instructors are typically expected to participate in virtual class meetings in real time. On the other hand, asynchronous online learning does not have scheduled meeting times but does have deadlines for learning assignments. Blended courses, on the other hand, involve learners and instructors interacting in both virtual and physical classroom settings. The use of synchronous and asynchronous communication technology in educational environments has greatly improved accessibility and increased the availability of educational resources Kuang Chiang et al. (2022, p. 908). However, it is important to note that online learning is not without its challenges, particularly in terms of academic dishonesty Holden (2021, p. 1, as cited in Fishman, 2014). Academic dishonesty in online learning is common and a major concern for educational institutions and society as a whole Holden (2021, p. 1). Upholding academic honesty requires a strong commitment to core values such as trust, fairness, respect, responsibility, and courage. By upholding these values, ethical academic behavior is defined by creating a community dedicated to learning and the exchange of knowledge. Students benefit individually from this reputation and the inferences drawn from their academic achievements. According to Holden (2021, p. 2), at a broader level, understanding and adhering to the core values of academic honesty within a community establishes a shared framework for professional work, clearly demonstrating its value in terms of knowledge, skills, and abilities. According to Gehringer & Pedyycord (2013, p. 10), an online exam is a special type of assessment where students are allowed to use the internet. While this may provide an authentic experience, it can also make it challenging to determine whether students have completed the work independently. According to Holden (2021, p. 10), as online distance education continues to expand and universities move towards online education, faculty and administrators face the challenge of developing methods to effectively assess student learning in an online environment while upholding academic honesty. Although many faculty members state that the use of Internet technologies for course purposes will provide more flexibility than traditional course formats, they are also concerned about the emergence of unethical behavior (Grijalva, 2006, p. 14; McGee, 2003, p. 14; Bandyopadhyay and Barnes, 2014, p. 2; Rautela, 2022, p. 111). According to Mantecon et al. (2018, p. 1) the automated assessment of text-based assessment items such as short answers or essays is an important and ongoing research issue.

According to King and Case (2014, p. 20), with online courses offered to provide more flexibility to students, concerns about academic honesty are emerging. Academic dishonesty is always a concern in any educational setting. According to Berkeley City College (2018) academic dishonesty is defined as "any form of cheating that occurs in connection with formal academic exercises." "Cheating is defined as an attempt to give or receive assistance in a formal academic practice (such as an examination) without due approval". The provision of various technological facilities that encourage students' academic dishonesty has been a major problem in online assessment. Findings from studies show that the most common type of cheating activity reported by students is downloading documents from the internet and passing them off as the student's own work. Additionally, students report that they believe other students cheat more on homework problems than on exams, term papers, and internet projects. According to King and Case (2014, p. 20), however, the most troubling finding for educators is that e-cheating appears to be on the rise. During the coronavirus disease-2019 (Covid-19) pandemic, many higher education institutions have adopted online exam proctoring technologies to monitor ever-increasing cheating behavior and control unethical behavior. According to Lee & Fanguy (2022, p. 475); Stoesz & Eaton (2022, p. 36) although it may seem like a natural and effective solution, researchers argue that proctoring technologies arise from problematic assumptions when considering pedagogical approaches to fairly assessing student online learning performance.

2. METHOD

2.1. Research Model

A qualitative research method was employed for this study. Within the purview of the qualitative research approach, publications were scrutinized through document analysis to elucidate trends in online academic honesty.

Collecting data by examining existing records and documents is called documentary scanning. It includes the process of finding and evaluating sources for a specific purpose (Ekinci, 2019, p. 81). Document analysis includes the examination of the full text of, or excerpts from, organizational, clinical, or program records, official publications, or reports (Ekinci, 2019, p. 201). PRISMA guidelines are recommended for the systematization of documentation documents and the presentation of transparent reports (Toker, 2022, p. 321). The PRISMA flow chart explaining the methodology of the study is given in Figure 1.

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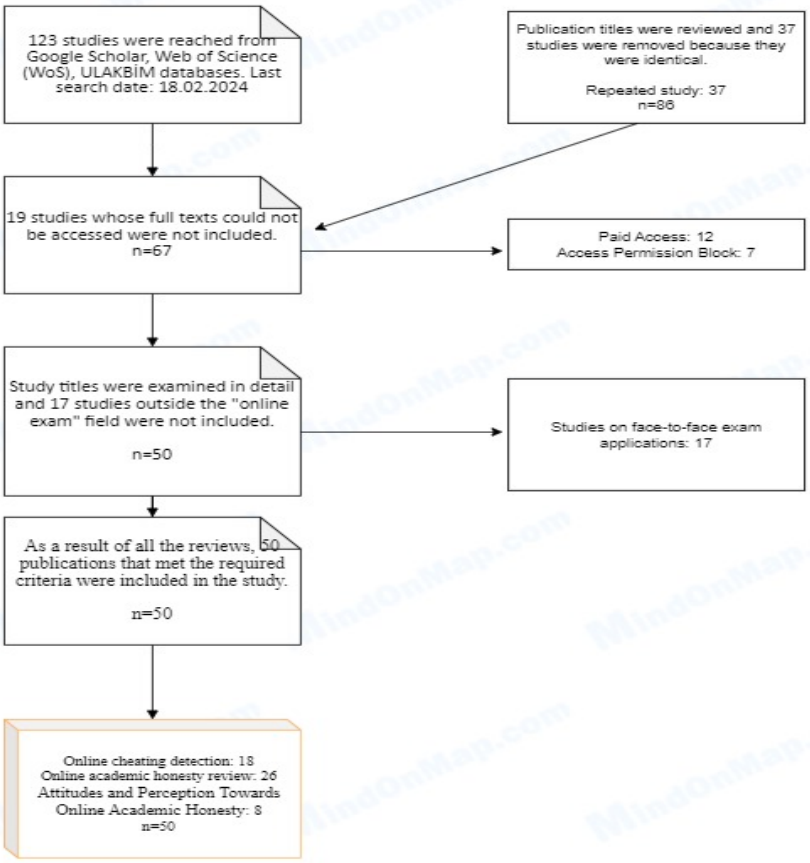

Figure 1: PRISMA flow chart

Table 1: PRISMA Model for systematic literature reviews within the scope of the study.

Study design	The study applies a literature review to progressively report studies in the existing literature in an open, transparent and rigorous manner.
Review protocol	The researchers determined the keywords and research criteria in advance to ensure neutrality.
Eligibility criteria	The studies were classified by the researchers by searching the Web of Science, Google Scholar and ULAKBİM databases.
Publication type included	The Web of Science, Google Scholar and ULAKBİM databases.
Publication time frame	2018-2022
Language	English
Search strategy	The relevant source databases were queried with the strings “online exam” AND “academic honesty” AND “ethical behavior” AND “cheating”. As a result, a large number of publications were reached. A manual review was performed to filter. As a result of the review, 50 publications that had the desired characteristics were finally obtained.

Table 1 shows the PRISMA model explaining the systematic literature review of the study in detail.

2.2. Sampling

This research examines existing studies on academic honesty in the online examination environment between 2018-2022 for the purposes of the study. To ensure a systematic approach, Google Scholar, Web of Science (WoS), and ULAKBIM databases were utilized for the review process. Relevant resources were searched using the specific keywords and phrases: "online exam," "academic honesty," "ethical behaviors," and "cheating". This search resulted in a significant number of studies, which were then manually reviewed and filtered. Ultimately, 50 studies that met the desired criteria were identified. It is worth noting that the number of studies in this field has shown a periodic increase, particularly following the Covid-19 pandemic. For detailed information about the codes, names, and researchers involved in these studies, please refer to Table 1.

Table 2 presents a comprehensive overview of the relevant studies, their respective authors, and their coding status in relation to the study's objectives. As depicted in Table 2, the majority of the studies (94%) were sourced from foreign literature.

Table 2: Details of the studies.

Study Code	Author(s)	Year
A1	Alvarado et al., 2018	2018
A2	Oravec, 2022	2022
A3	Susnjak, 2022	2022
A4	Ayoub et al., 2021	2021
A5	Zhan et al., 2022	2022
A6	Rautela et al., 2022	2022
A7	Salman et al., 2022	2022
A8	Munteanu, 2021	2021
A9	Gehlot et al., 2022	2022
A10	Jaramillo-Morillo et al., 2022	2022
A11	Abozaid and Atia, 2022	2022
A12	Duzbayeva et al., 2022	2022
A13	Boobalan, 2022	2022
A14	Hamzaoui, 2022	2022
A15	Banson and Hardin, 2022	2022
A16	Lee et al., 2022	2022
A17	Revilla and Libre, 2022	2022
A18	Pleasants and Pleasants, 2021	2021
A19	Ivashkina, 2021	2021
A20	Eramo, 2021	2021
A21	Paredes et al., 2021	2021
A22	Tanis, 2020	2020
A23	Verhoef and Coetser, 2021	2021
A24	Norris, 2019	2019
A25	Lee ve Fanguy, 2022	2022
A26	Golden and Kohlbeck, 2020	2020
A27	MacLeod and Eaton, 2020	2020

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Study Code	Author(s)	Year
A28	Stephens et al., 2021	2021
A29	Burgason, 2019	2019
A30	Dyer et al., 2020	2020
A31	Costley, 2019	2019
A32	Chirikov et al., 2020	2020
A33	Reisenwitz, 2020	2020
A34	Janke et al., 2021	2021
A35	Tweissi et al., 2022	2022
A36	Novick et al., 2022	2022
A37	Hussain et al., 2021	2021
A38	Harton et al., 2019	2019
A39	Bilen ve Matros, 2021	2021
A40	Dendir and Maxwell, 2020	2020
A41	Lucky et al., 2019	2019
A42	Rivera-Mata, 2021	2021
A43	Vazquez et al., 2021	2021
A44	Jaramillo-Morillo et al., 2020	2020
A45	Slimi, 2020	2020
A46	Amzalag et al., 2021	2022
A47	Reedy et al., 2021	2021
A48	Fatima et al., 2020	2020
A49	Çakmak and Baysen, 2022	2022
A50	Acar Güvendir and Özer Özkan, 2021	2021

2.3.Development of the Analysis Form

A five-question form was utilized to analyze the 50 publications included in the study. The researchers collaborated with three experts who are proficient in the field of "Scientific Research Methods" to ensure the suitability of the prepared questions for the overall purpose. The experts confirmed that the questions were indeed appropriate for the intended purpose. The form consisted of the following questions: (1) How are the studies categorized according to publication type? (2) How are the studies distributed across different years? (3) How are studies distributed across different countries? (4) How are the studies categorized according to the purpose of publication? (5) How are the studies distributed according to the type of participants?

2.4. Data Analysis

In the analysis of the obtained data, descriptive analysis from qualitative research techniques was employed to analyze the data analysis techniques, research methods, data collection tools, and publication tags. Content analysis from qualitative research techniques was employed to examine the study topics of the publications. The publications were assessed by three experts in the field. Based on the literature review, the experts unanimously agreed

that there are discernible trends in the categories of "Online Cheating Detection", "Online Academic Honesty Review", and "Attitudes and Perceptions Towards Online Academic Honesty" within publications that encompass exams, assignments, citations, etc. in online environments.

3. FINDINGS

The 50 publications obtained from the studies conducted in the last five years underwent descriptive and content analysis in order to ascertain research trends.

The findings regarding the classification of studies based on publication type are presented in Table 3.

(1) How are the studies categorized according to publication type

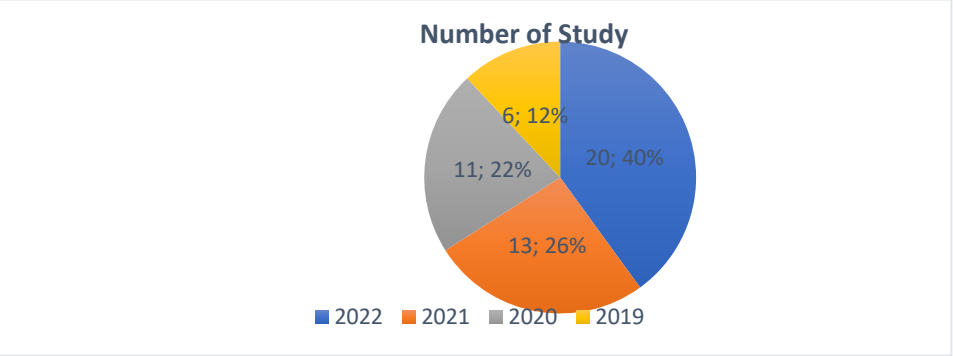
Table 3 illustrates the distribution of the studies based on their publication type. As depicted in the table, 90% of the studies were published as articles, while the remaining 10% were presented in various formats such as conferences, symposiums, projects, theses, and papers.

Table 3: Categorization of studies according to publication type

Publication Type	Study Code	N	%
Article	A2-A3-A4-A5-A6-A7-A8-A10-A12-A14-A16-A17-A18-A19-A21-A22-A23-A24-A25-A26-A27-A28-A29-A30-A31-A32-A33-A34-A35-A36-A37-A38-A39-A40-A41-A42-A43-A44-A45-A46-A47-A48-A49-A50	45	90
Other (paper-project-thesis)	A9-A11-A13-A15-A20	5	10

(2) How are the studies distributed across different years?

The publication dates and rates of studies conducted within the past five years are presented in Graph 1.



Graph 1: Number of studies per year

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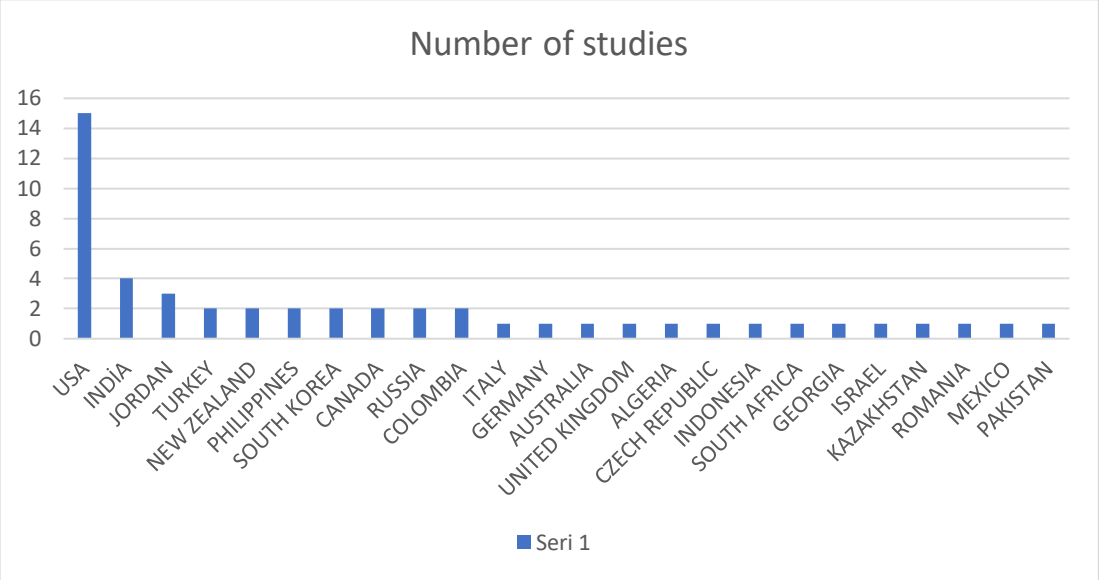
Graph 1 shows the number of publications of studies conducted in the last five years by year. As can be seen from the graph, it is observed that studies on online exams and academic honesty are constantly increasing.

(3) How are the studies distributed across different countries?

The distribution of studies by country is presented in Graph 2.

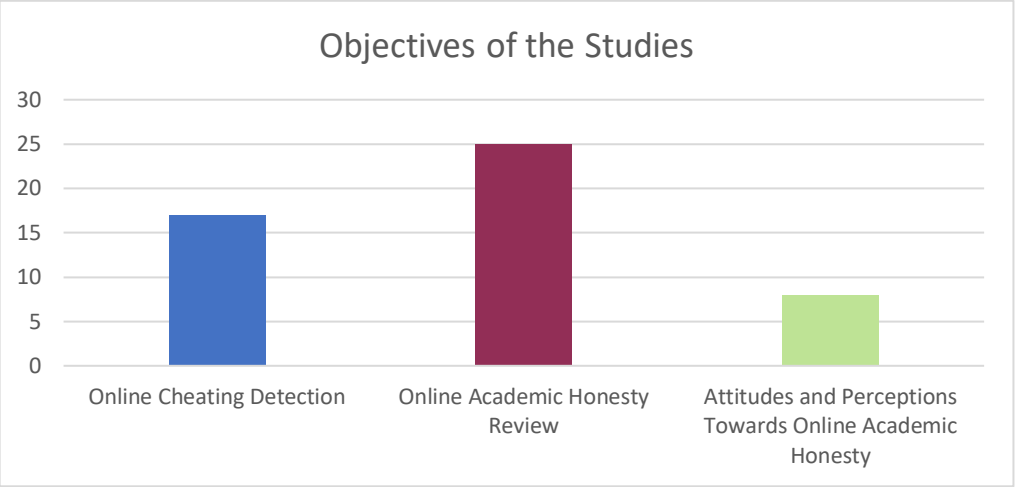


Graph 2: Number of Studies by Country

As seen in Graph 2, while the USA has the most studies with 15, India has 4, and other countries have two or one study each, indicating significant differences in research outputs.

(4) How are the studies categorized according to the purpose of publication?

Graph 3 presents the objectives of the studies.

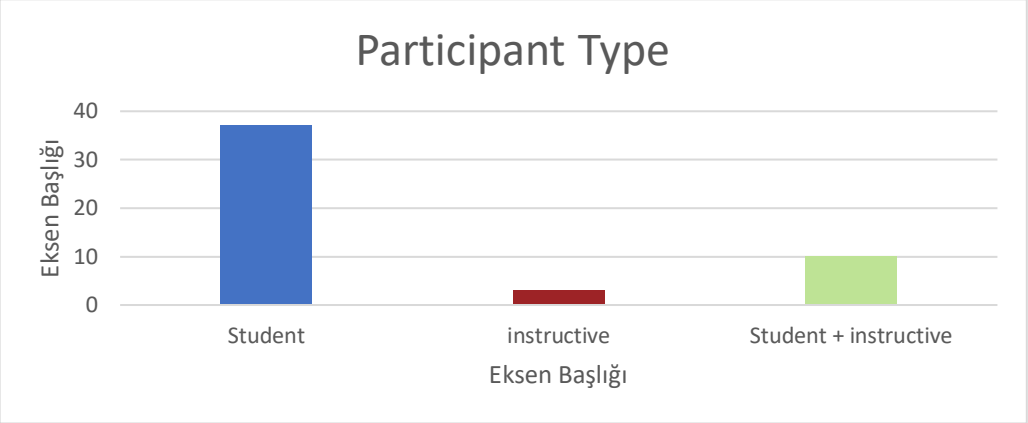


Graph 3: Objectives of Publication of Studies

Graph 3 depicts the findings of research studies on online academic honesty. Specifically, it reveals that there have been 25 studies conducted on this topic, while 17 studies have investigated online cheating. Additionally, 8 studies have focused on attitudes and perceptions related to online academic honesty.

(5) How are the studies distributed according to the type of participants?

Graph 4 presents the findings pertaining to the number of studies based on the type of participants included in the study sample.



Graph 4: Number of Studies Categorized by Participant Type

In Graph 4, it is observed that 37 studies exclusively focus on the student sample, 2 studies concentrate on the instructive sample, and 10 studies incorporate both instructor and student data. The 50 studies were analyzed based on their publication objectives and categorized into three themes: Online Cheating Detection, Online Academic Honesty Review, and Attitudes and Perceptions Towards Online Academic Honesty. The themes and corresponding publication codes, aligned with the objectives of the studies, are outlined in Table 3.

Based on the analysis, as indicated in Table 4, it was determined that the research objectives primarily focused on cheating detection to uphold academic honesty in online settings, uncovering instances of plagiarism, detecting unethical behavior among students, promoting academic honesty, and examining attitudes and perceptions towards academic honesty. Specifically, there were 17 studies on Online Cheating Detection, 25 studies on online academic honesty, and 8 studies on attitudes and perceptions towards online academic honesty. The findings derived from these studies, organized according to their respective themes, are outlined below.

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Table 4: Analysis of the Studies Based on the Publication Objective

Themes	Study Code	N	%
Online Cheating Detection	A1, A2, A3, A8, A9, A11, A18, A19, A33, A34, A35, A39, A40, A41, A42, A43	17	34
Online Academic Honesty Review	A4, A6, A7, A10, A12, A13, A14, A15, A17, A20, A21, A22, A23, A24, A25, A26, A27, A29, A32, A36, A37, A45, A48, A49, A50	25	50
Attitudes and Perceptions Towards Online Academic Honesty	A5, A16, A28, A30, A31, A38, A46, A47	8	16

Preserving the essence of the statements in the studies, select excerpts related to each theme are presented.

A study on Online Cheat Detection has been explained as follows:

Developed using the Viva Platform, the webcam and microphone application is utilized for the detection and monitoring of suspected students. The system is comprised of various components, including a secure environment, an advanced authentication system to verify the intended candidate, a comprehensive monitoring system to observe the candidate during evaluation, and a response verification system. During the examination, students have the ability to make different movements, such as facial and eye movements, which can be directly observed via the camera. These movements provide valuable information about the student's actions through the facial landmark pattern. A correlation has been identified between students turning away from the camera and engaging in cheating behavior during the Viva session (Gehlot & Joshi, 2021, p. 1).

In the study conducted by Bilen and Matros (2021, p. 203) on Online Copy Detection, it is explained as follows:

"In a conducted study to investigate cheating behavior in online exams, data from short-answer student exams and time per question measurements were collected, with the webcam serving as a supplementary technology. The findings from the study enabled the detection of copy instances" .

In the study conducted by Pleasants and Pleasants (2021, p. 268) on Online Copy Detection, it is explained as follows:

"Another study examined exam data from unproctored exams in an introductory biology course delivered online. A feature of the distance education learning management system utilized is its ability to detect behaviors such as learners navigating away from the exam

page and accessing other materials on the computer. When exploring the relationship between cheating behavior and exam performance, it was discovered that 70% of students engaged in cheating, with many repeating this behavior throughout the exam. Moreover, appeals to learners' honesty or requesting them to pledge their integrity were found to be ineffective in preventing cheating. However, when learners were informed about the presence of technology capable of detecting cheating in the exam environment, as well as the associated penalties, it was observed that cheating behavior decreased to 15% of learners. Nevertheless, no evidence indicates that changes in cheating behavior correspond to changes in exam performance".

In the study conducted by Rautela et al. (2022, p. 111) on On Online Academic Honesty Review, it is explained as follows:

"This study aims to identify the factors contributing to unethical practices in online evaluations. It proposes a four-level model that focuses on the lack of training for both faculty and students, personal ethics and evaluation, technological barriers, interpersonal barriers, and time management design as the underlying causes of unethical behavior in online assessments. The interconnections between these factors are further elucidated through fuzzy MICMAC analysis".

In the study conducted by Verhoef and Coetser (2021, p. 1) on On Online Academic Honesty Review, it is explained as follows:

"Another study explores the phenomenon of academic honesty among university students during online assessment from the perspective of South African students. Audio data obtained from a university's institutional forum was analyzed using a phenomenological approach. The analysis results indicate that while some students engaged in dishonest behavior during the pandemic period due to related issues (such as lack of monitoring), there are other factors such as feeling overwhelmed and stressed, inadequate time management, and struggles with technology that contribute to students' dishonesty".

In the study conducted by Stephens et al. (2021, p. 1) on Attitudes and Perceptions Towards Online Academic Honesty, it is explained as follows:

"A survey was used in a research project aimed at expanding the existing body of knowledge on the effects of online academic integrity training on the perceptions of academic dishonesty held by college students, and its impact on the participants. Prior research has shown the effectiveness of such training in enhancing knowledge and deterring cheating, but contrary to expectations, the results of this study indicated a diminished understanding of academic integrity as a result of the provided training".

In the study conducted by Costley (2018, p. 205) on Attitudes and Perceptions Towards Online Academic Honesty, it is explained as follows:

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"Academic dishonesty can reduce the quality of the learning experience for students, and reduce the validity and trust in online class's assessment. For this reason, understanding how student perceive their cheating behavior is useful for researchers. This paper looks at the interview responses of a group of students taking cyber university classes to gain insight into their perceptions and motivations for cheating. The responses were varied, but showed the ad-hoc nature of the behavior and that students felt that academic dishonesty was a natural aspect of their learning experience".

In the study conducted by Amzalag et al. (2021, p. 243) on Attitudes and Perceptions Towards Online Academic Honesty, it is explained as follows:

"This study aimed to investigate unethical behavior among students in online exam environments, as well as the underlying reasons and perceptions of academic dishonesty. A survey was conducted with both instructors and students to collect data. The findings revealed a tendency among young learners to engage in cheating. Moreover, a mutual lack of trust between learners and instructors emerged as a concerning factor".

4. DISCUSSION

The articles analyzed in this study were classified based on the study's purpose, which predominantly focused on cheating behavior, academic honesty, and attitudes and perceptions towards academic honesty. Although the objectives were similar, the findings and suggested solutions varied.

According to Gehlot and Joshi (2022, p. 2), regarding cheating detection, some studies have found that using a webcam can act as a deterrent to cheating incidents. However, according to Bozkurt and Uçar (2018, p. 753), other studies have indicated that webcams do not have an impact on cheating behavior, and that the use of assistive technologies can infringe upon privacy. Additionally, concerns about identity verification during online exams have been raised. Furthermore, biometric identification devices may not yield reliable results if they are expensive, require frequent calibration, demand continuous technical support, or fail to provide sufficient data input for pattern identification techniques. According to Güvendir and Özkan (2021, p. 23), another study in the literature revealed that prospective teachers find online exams more beneficial than in-class exams due to the flexibility of time and location, but it also highlighted that online exams are highly susceptible to cheating. According to Mantecon et al. (2018, p. 10); Oravec (2022, p. 6); Abozaid & Atia (2022, p. 1), the methods employed in studies on cheating behavior vary, with some using artificial intelligence methods through open-ended quizzes and proctored technologies, while others utilize multimodal regression, logistic regression, or statistical methods.

According to Chirikov (2020, p. 2466), studies on academic honesty tend to utilize surveys as qualitative and quantitative data collection tools. The primary aim of these studies is to bring about a change in learners' behavior by involving institutions that adopt academic honesty policies, and the training provided within the scope of these policies. It has been found that students who face severe penalties from their instructors due to unethical behavior during the educational process, students who receive academic honesty training, or students who commit to specific procedures display more honest behavior in the face of academic dishonesty. However, according to Özmen and Yurttaş (2020, p. 21), it is worth noting that these studies are conducted at different times, places, and educational institutions, which may result in unexpected behaviors among individuals due to factors such as parental pressure, academic success, homework, and peer relations.

Studies on academic honesty commonly employ artificial intelligence, statistical, and descriptive analyses. When examining perceptions and attitudes towards academic honesty, these studies typically assess satisfaction, academic honesty, attitudes, and perceptions. Statistical methods are commonly employed, and significant differences are observed when evaluating these factors in terms of demographic information, technologies used, and supervised or unsupervised online environments.

RESULTS

This study examines 50 publications published between 2018 and 2022 that explore the evaluation of online exams and unethical behavior within online applications. This topic is becoming increasingly important, especially given the rise of online applications during the Covid-19 period. In this changing landscape, learners and teachers interact in different locations and time periods, resulting in new learning experiences. The focus of this study is on the use of e-assessment systems to measure learners' behaviors in the online environment, based on various theories and approaches.

The study adopts a multidisciplinary approach, combining engineering techniques such as deep learning and fuzzy logic with statistical and descriptive methods from the social science and education fields. Through the analysis of data from online exam applications and surveys, distinct behaviors related to cheating detection, academic honesty, and learners' attitudes and perceptions are revealed. These findings can be valuable in informing policies related to academic honesty in educational institutions.

Within the scope of this study, various online exam scenarios were created using both supervised and unsupervised online exam environments. These scenarios involved generating a question pool that matched the number of students and ensured that questions were not sourced from the internet. Additionally, the scenarios covered different types of questions. These findings can provide guidance for instructors in future online exam applications.

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In future studies, it would be beneficial for researchers to consider the relevant literature, the methods used, the dataset, the assistive technologies employed, the increase in the number of publications, their performance rates, and the years covered by the publications. Taking these factors into account will contribute to a comprehensive understanding of academic honesty.

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