Comparing the Amount and Type of Cheating in Online and Face-to-face Exams

Asma Yazdi[1] | **Javad Hatami[2]**

1. *Corresponding Author,* Ph.D. Candidate, Department of Educational Technology, Tarbiat Modares University, Tehran, Iran. E-mail: asma.yazdy.221173@gmail.com
2. Professor, Department of Education, Tarbiat Modares University, Tehran, Iran. E-mail: j.hatami@modares.ac.ir

Article Info	ABSTRACT
	During the Coronavirus pandemic, online classes and exams became popular to protect people's health. Despite the benefits, there were security issues and exam cheating. This research was conducted with the aim of comparing the amount and type of cheating in online and face-to-face exams using a qualitative method. The statistical population was all male and female students of the sixth grade of Pirbakran city in the academic year 2021-2022. In this research, a mixed rural school was selected using available sampling method and a structured face-to-face interview was conducted with all 14 sixth-grade students of the school. The interview questions were written and checked in MAXQDA software version 2020. From the analysis of the interviews, it was concluded that the rate of student cheating in online tests is much higher than that in face-to-face tests. The most common methods of cheating in online tests are the use of textbooks, the help of classmates, and the use of the Internet. Also, the most common method of cheating in face-to-face exams was the help of a classmate, and they considered the objective questions in the exams to be one of the important reasons for the ease of cheating. According to the findings of the research, the exams should be held in person as much as possible. In order to reduce cheating in the design of face-to-face and online tests, it is better to use more conceptual, in-depth and descriptive questions not published on the Internet browser; design different questions for students and explain the importance of studying and the negative points of cheating for students; replace four-choice questions with explanatory questions; increase the distance between the students in the face-to-face exam and control to prevent the presence of embedded fraud; not to answer the questions by the invigilators, and check students' pockets and hands in order to prevent cheating and avoid providing them with multiple draft sheets.

Introduction

Performance in education is primarily evaluated via using grades. Thus, the pressure to do well and worry about failing seem to have a significant impact on students' life (McCabe et al., 2017). The last two decades have seen a rise in interest in finding strategies to identify and stop cheating, fraud, or (test) misbehavior in the classroom. Due to the variety of meanings given in literature, it might be challenging to distinguish between these concepts clearly. All three terms (cheating, fraud, and misconduct) refer to the purposeful attempt to sway (parts of) the exam procedure in order to change the exam's outcome or for one's own benefit (van Ommering et al., 2019). The integrity of the exam is endangered when one question is incorrect, but the instructor's efforts to design a valuable assessment tool are harmed when the integrity of the exam as a whole is incorrect (Lanier, 2007). The prevalence of fraud vary from 50% to 90%, but unfortunately it is a growing problem (McCabe et al., 2017; Oleck, 2008; Witherspoon et al., 2012; Yee et al., 2010).

Academic cheating is modeled by Becker et al. (2006) as a function of three main factors: incentive (motivation to cheat derived from own/internal or external pressures), opportunity (ability to cheat because the environment permits it), and rationalization (ability to consider acts of cheating as not contravening with one's beliefs and ethics). Becker et al. (2006) adopted the fraud triangle framework to diagnose sources of fraudulent behavior in business (Becker et al., 2006). There is evidence that a student's workload and the expectations of their friends and family contribute to academic dishonesty (Jian et al., 2020). According to Pulfrey et al. (2019), encouraging mastery-approach (instead of a performance-approach) and autonomy (instead of control) in the classroom lowers academic dishonesty. The choice to cheat or not is likely to be heavily influenced by accomplishment goals (Anderman & Danner, 2008), as cheating is one approach to ostensibly acquire socially acceptable competence. In actuality, the pursuit of performance objectives has been positively correlated with both acceptance of cheating and actual cheating conduct (van Yperen et al., 2011).

There is an emerging literature on appropriate design for evaluation in e-learning (Harmon & Lambrinos, 2008). Also, there is a lot of literature on the prevalence and causes of cheating on college campuses (Passow et al., 2006) but these researchers looked at the cheating behavior in general and did not examine whether cheating behaviors were different in online education compared to face-to-face teaching (Harmon & Lambrinos, 2008). A study by Nowell and Laufer (1997) used direct evidence of cheating to look at student characteristics as predictors of cheating. In their experiment, quizzes were given to the students, collected, copied, and given back to them for self-grading. Differences between the self-graded score and the score computed from the photocopy were used as direct proof of cheating. According to the authors, the chance of cheating was positively correlated with the student characteristics of poor performance in class and increased hours of employment. In another study, Kerkvliet and Sigmund (1999) assessed the efficacy of anti-cheating methods using data from a random-response survey. The respondent to a random-response survey was asked to anonymous self-report cheating conduct. According to the findings, using tenure-track faculty instead of graduate teaching assistants as proctors (which results in a 32% reduction in the likelihood of cheating) is the most effective deterrent, followed by using an additional test version (which results in a 25% reduction) and straightforward verbal announcements (12 percent reduction)

In past research, results have been different regarding cheating rates in online and face-to-face exams; for example, Kennedy Nowak and Raghuraman (2000) reported that cheating is more likely to occur in the online classroom than in the traditional face-to-face classroom. Charlesworth, Charlesworth and Vlican (2006) have reported that the extent of cheating in online classes is not more than that in the face-to-face classes (Charlesworth et al., 2006). Grijalva et al. (2006), utilizing an anonymous survey of self-reported cheating for students in online courses, reported that the incidence of cheating was similar to what was reported in similar studies on cheating in face-to-face courses (Grijalva et al., 2006).

Many exams were quickly turned online during the COVID-19 pandemic, while the validity and fairness of unsecured exams were questioned and debated (Humbert et al., 2022). Much as in a traditional classroom, assessment is an essential component of online learning. Evaluation of the learning outcomes during the online assessment is difficult, mostly because of student academic dishonesty that could result in unjustified assessments (Garg & Goel, 2022). Some claim that evaluations used to quantify learning in online courses, such as formative or summative test results, do not accurately reflect learning since they may have been corrupted by exam cheating (Arnold, 2016). There are several justifications given as to why academic dishonesty can be more prevalent in online courses. One is that it can be challenging to verify the identity of the test taker because evaluations frequently take place in unsupervised or without protection circumstances (Kraglund-Gauthier & Young, 2012). Similar to this, those taking exams online may use unapproved

resources (such as cheat sheets, books, or internet materials). Additionally, the online environment might promote collaborative (group) work among students simply by the absence of a strong contact and engagement with an instructor (Hearn Moore et al., 2017; McGee & McGee, 2022; Şendağ et al., 2012).

Given that exam results are important to students, potential employers, graduate admissions departments, and other consumers of information, it is essential to ensure that scores reflect learning (Fask et al., 2014). Also, considering the importance of cheating in conducting face-to-face and virtual exams and the issue that if the student's grades do not correctly represent his academic progress, the teacher will not be properly aware of the student's weaknesses and will not be able to correct them. If a student gets used to cheating in the first years of his education, whether in the face-to-face or online exam, he will use cheating in important exams and other areas of life as an adult. A student who cheats in school exams will cheat in the future in crucial exams such as entrance exams, which will affect the future of other people. Investigating the amount and manner of student cheating in face-to-face and online exams can help the designers and organizers of the exams to work harder to validate the exams and recognize their weaknesses. Thus, this study sought to compare the amount and manner of cheating in face-to-face and online exams to provide suggestions to reduce cheating in exams.

Method

Design

The research approach was qualitative phenomenological type and the descriptive comparative design was adopted.

Participants

As mentioned, the purpose of this research was to investigate the amount and ways of cheating in online and face-to-face exams from the perspective of sixth grade students. The research community consisted of the sixth-grade students of Pirbakran city in the academic year 2022-2023. In this research, a mixed rural school was selected using available sampling method and interviews were conducted with all the fourteen sixth grade students of that school, after interviewing 9 students, information saturation was reached, but the interview continued until all 14 students were interviewed. Table 1 shows the demographic information of the participants.

Table 1.
Demographic Characteristics of the Interviewees

Interviewee code	gender	Age	Nationality	first semester score (online)	second semester score (face-to-face)
Student number 1	boy	12	Iranian	A	A
Student number 2	boy	12	Iranian	B	C
Student number 3	girl	11	Iranian	A	B
Student number4	boy	13	Iranian	B	D
Student number5	girl	13	Afghan	C	D
Student number6	boy	12	Iranian	A	D
Student number7	boy	12	Iranian	C	C
Student number8	boy	11	Iranian	A	A
Student number9	girl	11	Iranian	A	A
Student number10	boy	12	Iranian	B	C
Student number11	boy	12	Iranian	A	A
Student number12	boy	12	Iranian	B	C
Student number13	boy	13	Afghan	C	D
Student number14	girl	13	Afghan	C	D

Instruments

In this study, a structured interview was used to gather data. Also, the respondents completed a consent form where the parents signed and showed their agreement.

Respondents received a pencil, plaque and ice cream as a reward. The research process was conducted in such a way that the interviews were conducted with each student after receiving their report cards. The interviews

were conducted individually in order not to be influenced by the words of others.

The validity and reliability of the research was evaluated by considering the four criteria of believability, transferability, dependence and reliability. To make it believable, measures such as long-term review and interaction with data, continuous observation, reconciliation of homogeneity of findings, analysis of conflicting data, review of interpretation of raw data and discussion with colleagues were carried out (Momenirad, 2013). In order to check the validity of the coding process, the recoding method was used for at least 20% of the interviews. In the process of validating the findings, the researchers tried to conclude whether their understanding of the interview was correct or not by presenting the text of the interviews to the participants. Also, during the process of data analysis, the validity was ensured by using methods of matching homogeneous findings, feedback from the participants and non-participating experts.

Procedure

In order to obtain more coherent information, a structured interview was conducted. Each student was asked 6 questions designed according to the purpose and questions of the research. the questions were about the extent of their cheating in face-to-face and virtual exams, the ways of cheating in their face-to-face and virtual exams, and their suggestion to take the necessary measures to reduce cheating in face-to-face and virtual exams. These six questions were chosen by the researchers in consultation with two teachers and an expert in the field of education. Interviews were conducted in person. Before the interview, the interviewees were assured that this information is collected for the purpose of conducting research, and in the research, the names of individuals would not be mentioned, and their identities will remain anonymous. After completing the interviews, the text of the interviews was written in the MAXQDA version 2020 software. In the second step, the data was examined line by line and then the extracted meanings were coded. In

the next step, the classification of the codes began and repeatedly rereading the codes, the calculated concepts were placed in thematic categories and clusters and then in some cases, a sample of the quotes related to each category of the interviewees was stated.

Results

The rate of student cheating in face-to-face and online exams in terms of percentage according to the interviewees' statements is presented in Table 2.

Table 2.
The Amount of Cheating on the Test in Terms of Percentage

Interviewee code	Online exam	face-to-face exam
Student number 1	20	5
Student number 2	40	10
Student number 3	60	15
Student number4	90	20
Student number5	40	5
Student number6	90	0
Student number7	40	0
Student number8	10	0
Student number9	50	10
Student number10	60	10
Student number11	20	0
Student number12	40	0
Student number13	30	10
Student number14	10	5

According to Table 2, all the students cheated in the virtual exams, 100% of the people, but in the face-to-face exam, the number of students who cheated in the exam has decreased and this amount has decreased to 64.2%, also the cheating rate of all the student has also decreased significantly, for example, student number 6 answered the virtual exam with 90% cheating, but completed the face-to-face exam without cheating.

Figure 1.
The Amount of Cheating in the Test in Terms of Percentage
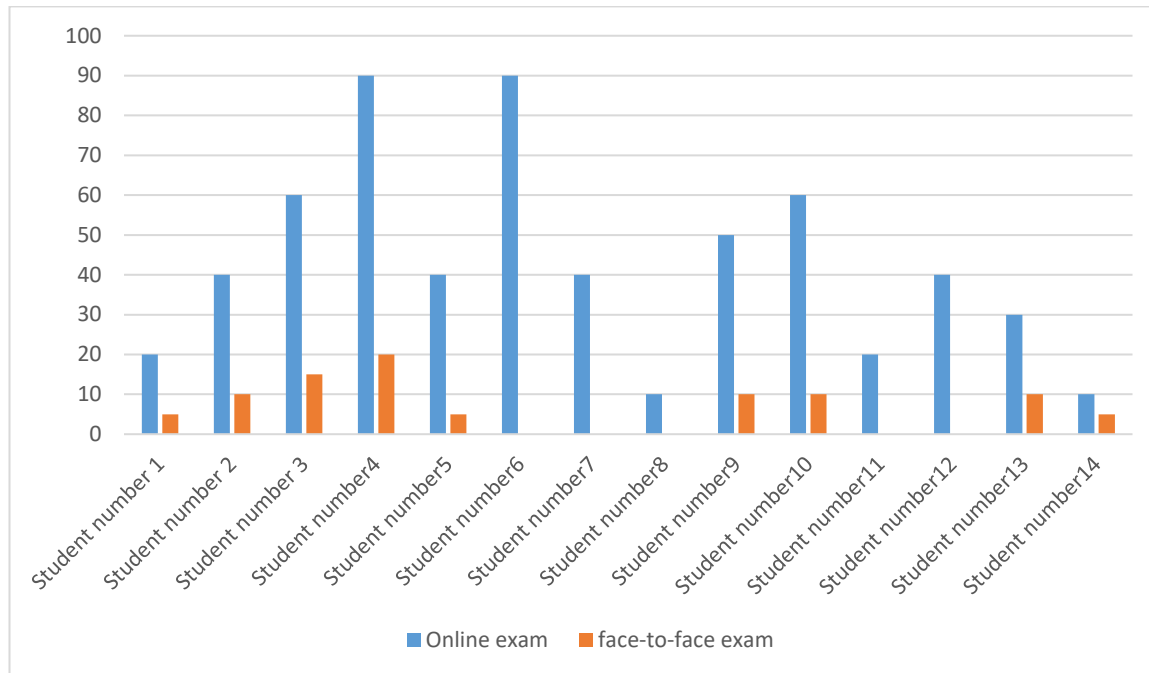
The interviewees were asked questions about the types of cheating, they used in the online exam and it is given in Table 3- along with the frequency from the most to the least repeated.

Table 3.
Types of Cheating in the Online Exam

Type	Repetition percentage
Use of textbook	100
Getting help from other classmates and sharing answers	71.4
Getting advice from family members	42.8
Using the Internet browser	35.7
Using handwritten textbooks	35.7
Getting advice from relatives	28.5
Watching the educational movie	7.1

According to the Table, all the students who cheated in the virtual exam used the textbook for the purpose of cheating and the most common way of cheating in the virtual exam is the use of the textbook, after that, getting guidance from other classmates and sharing answers with a frequency of 71.4%, getting advice from family members with a frequency of 42.8%, using a browser with a frequency of 35.7%, using a textbook with a frequency of 35.7%, getting advice from relatives with a frequency of 28.5% and at the end, watching the educational movie with the lowest frequency was 7.1%.

-   **Use of textbook**
The most common way to cheat in the exam was the use the textbook. One of the reasons why students often refer to textbooks is the objective questions in exams, and students can easily find the answers by referring to textbooks. In order to reduce the cheating rate of students, it is better to use more conceptual questions than objective questions. For example, student number 2 stated that " *When I felt I did not know the question. I would quickly open the book and find it there. By searching twice, the answer to the question was found.*"

- **Getting help from other classmates and sharing answers**

Solving questions with the help and guidance of your classmates was another common way to cheat. In this regard, student number 8 stated:

"*First, I would search for the book, if I couldn't find it, I would quickly call Narjes, the rule was that we would search for half the exam period and write, after that, we would call each other and answer the questions that we couldn't find. We asked each other. We also went to each other's houses for some exams so that we could write together more easily.*"

- **Using the Internet browser**

One of the ways of cheating mentioned by the interviewees was using an internet browser. Due to the availability of this space, the ease of use and the existence of websites that have placed the text of the textbook on their page and the student can find exactly the desired text with a simple search; Most students have used this way to cheat. For example, student number 9 said in this regard:

"*When I couldn't find the answer in the book, in the next step I searched on the Internet on my mobile phone, most of the time it was found, of course I understood that it was also in the book, but because I was stressed, I couldn't search in the book and I will search and find it. Sometimes it wasn't on the internet and I didn't trust the internet too much. I doubt I would have written that answer in the exam.*"

- **Watching the educational movie**

One of the cheating ways that participants mentioned was watching training videos. Some questions, especially in mathematics, are not exactly in the textbook, and to answer the exam, the student must have learned the subject. In the online exam, due to the possibility of viewing educational videos and more time for the exam, students can view the educational video on the desired topic to answer the exam questions. For example, student number 2 said:

"*Sometimes, when I had a math exam and I couldn't solve a question, I would watch a video related to that topic in the Shad application in the classroom group and learn how to solve the problem. For example, the math exam was about drawing a shape in Coordinate We had the table and I had a problem with drawing the shape. I quickly watched the video related to this topic and then I answered the exam question.*"

Also, the interviewees were asked questions about the types of cheating, they used in the face-to-face exams and it is given in Table No4- along with the frequency from the most to the least repeated.

Table 4.
Types of Cheating in the Face-To-Face Exam

Type	Repetition percentage
Getting guidance from other classmates verbally and by gestures	64.2
Getting guidance from other classmates in writing	28.5
Use of textbook	7.1

According to the results, the interviewees have stated three ways of cheating in the face-to-face exam; In order of frequency: getting guidance from other classmates verbally and gestures, getting guidance from other classmates in writing, and using the textbooks.

- **Getting guidance from other classmates verbally and by gestures**

One of the most frequent ways of cheating in face-to-face exams mentioned was to get guidance from other classmates verbally and with gestures. When the distance between the students is small, the questions are objective and the answers are short, and the invigilator's attention is on a different part of the exam area, the best opportunity for cheating arises. in this regard, the student number 12 stated:

"*It was enough for Invigilator to go to a student. He would quickly point to the student who was sitting in front of me and I would say the question number. If there were four options, he would show the correct option with his fingers, one finger means option A. Two fingers mean option B, three fingers mean option C, four fingers mean option D, closed fist means I would not give the correct option; if he opened his five fingers and shook his hand, then I have doubts.*"

- **Use of textbook**

The least frequent way to cheat in face-to-face exams was to use a textbook. This is because bringing the book with you in the exam has many consequences. This way of cheating is rarely used. In this regard, student number 3 said: "*I only used the book in one face-to-face exam; the science exam, I didn't know exactly what photosynthesis was, but I knew where it was in the book, I slowly opened the book under the table*".

The students have been asked to make suggestions to prevent cheating in online tests, the findings are given in Table 5.

Table 5.
Suggestions to Prevent Cheating in Online Exams

Suggestions
Substituting conceptual questions instead of objective questions
Do not use published questions in the Internet browser
Providing different questions for students
No numbering of questions
Expressing the importance of studying for lessons
Explaining the negative points of cheating to the student
Expressing the ethical problems of cheating
Justification for families to prevent student cheating at home
The order of the questions should not be the same as the order of the book

According to Table 5, the suggestions of students in order to prevent cheating in online exams included: Conducting critical exams in person, Substituting conceptual questions instead of objective questions, Not using published questions in the Internet browser, Providing different questions for students, No numbering of questions, Expressing the importance of studying for lessons, Explaining the negative points of cheating to the student, Expressing the ethical problems of cheating, Justification for families to prevent student cheating at home, The order of the questions should not be the same as the order of the book.

- **Substituting conceptual questions instead of objective questions**

One of the suggestions mentioned many times was to replace conceptual questions instead of objective questions. Due to the objectiveness of the exam questions and the clear location of the answers to the questions in the textbook, students can easily find the correct answers to the questions by referring to the textbook. If the questions change from objective to conceptual, students are forced to read and learn the content of the courses to answer the questions. For example, student number 1 said: "*I think it is better that the questions are not easily found in the book, that is, they do not have specific answers in the book. The questions should be such that we have to learn the lesson to answer them.*"

- **Do not use published questions in the Internet browser**

Teachers use Internet browsers to make their work easier. In this space, there are websites that provide sample exam questions for free or for a fee, and some teachers use these ready-made questions without considering that students can also access the answers to these questions. Several students have mentioned this issue. For example, student number 8 said in this regard: "*At some times, especially for the math test, I would go to the Gamma website and search for math questions and find the same questions with answers and enter them nicely and easily into my sheet and get the full score or if The Gamma site was not there, I entered an exam paper question in Google and searched, during this time I was able to find the sample question twice. In my opinion, it is better for teachers not to use ready-made questions that are available on the Internet, of course, students cheat anyway, but with these actions, cheating becomes more difficult.*"

- **The order of the questions should not be the same as the order of the book**

To design exam questions, some question designers start designing exam questions from the beginning of the textbook and reach the end of the book, and in this way, the first exam question is at the beginning of the exam topic and the last exam question is taken at the last pages of the exam topic .With a simple search, the student will find the exam questions regarding the content of the exam .It is better for the designer to put the questions in the exam in a different order than the order of the content in the textbook. In this regard, student number 3 commented:

"*In some exams, we start from the beginning of the book and find the answers and write them one by one. It is better that the order of the questions is different from the order of the content of the book so that the search is not easily possible.*"

Table 6.
Suggestions to Prevent Cheating in Face-To-Face Exams

Suggestions
Replacing descriptive questions with four-choice questions
Increase the distance between students
Examination of the place of examination in order to avoid the presence of embedded cheated
Avoiding walking of the Invigilator during the exam
Avoiding the Invigilator to answer the students' questions
Examining the pockets and hands of students in order to avoid cheating
Not giving Multiple draft sheets
Expressing the importance of studying for lessons
Explaining the negative points of cheating to the student
Expressing the ethical problems of cheating

The suggestions of students in order to prevent cheating in face-to-face exams included: Replacing descriptive questions with four-choice questions, Increasing the distance between students, Examining the place of examination in order to avoid the presence of embedded cheated, the Invigilator avoidance to walk during the exam, the Invigilator's avoidance to answer the students' questions, Examining the pockets and hands of students in order to avoid cheating, Not giving Multiple draft sheets, Expressing the importance of studying for lessons, Explaining the negative points of cheating to the student, Expressing the ethical problems of cheating.

- **Replacing descriptive questions with four-choice questions**

Multiple choice and short answer questions are the easiest questions to cheat, and students can easily communicate the correct answer to each other in the shortest time. In order to prevent students from cheating, descriptive questions should be replaced with four-choice questions. For example, student number 5 said in this regard: "*Four-choice questions are great for cheating. I suggest that four-choice questions should be much less*".

- **Failure of the Invigilator to walk during the exam**

When the invigilator of the exam walks in the session, there is an opportunity to cheat for the students at the beginning of the exam hall, because the invigilator walks to the end of the hall and does not pay attention to the beginning of the hall. It is better to use two Invigilators for the beginning and end of the exam hall and the Invigilators should not walk in the exam hall. In this regard, student number 1 stated: "*When Invigilator gets up from his seat and walks, it is a golden opportunity to cheat so that he returns to his seat. Several questions can be asked. It is better for Invigilator do not to walk during the exam session*."

- **Failure of the Invigilator to answer the students' questions**

Answering the examinees' questions causes the invigilator's attention to be transferred from all the students to the only student asking the question. Due to the decrease of the attention of the Invigilator and the creation of noise in the meeting environment, there is an opportunity for cheating and talking to other students. Student number 7 said: "*A student who asks a question in the exam is the savior of other students who cheat. The invigilator should not answer a student's question or go to him so that other students cannot cheat.*"

- **Not giving Multiple draft sheets**

Multiple draft sheets provide the opportunity for students to cheat in writing. Students write the correct answers to the questions on the Multiple draft sheets and pass these sheets to each other when the invigilator is not paying attention .This event increases when students are given Multiple draft sheets. They transfer a draft sheet to their friend and keep a draft sheet with them, and at the end of the session the invigilator forgets how many draft sheets each examinee had. In order to prevent fraud, it is better to give each person a draft sheet and if he needs another draft sheet, the first draft sheet should be received and another draft sheet should be given to him. the draft sheet should also be received along with the exam paper. In this regard, student number 4 said:
"When the invigilator was not paying attention, we wrote the answer to the question on a piece of draft sheet and threw it at each other. Or when I was handing in my exam paper, I would leave the draft sheet on my friend's desk on the way. Or I would throw the draft sheet on the floor, a few minutes later, my friend would drop his pen in the same area and pick up the paper and the pen at the same time. It is better to give only one draft sheet to prevent cheating and the student should not bring a draft sheet with him. When the exam paper is delivered, the draft sheet should also be delivered to avoid sending the exam answers to each other."

Discussion

According to the results, the students who had a high percentage of cheating in the virtual exam, their performance in the face-to-face exam was lower and they did not have high academic progress. In this regard, Arnold (2016) stated that the score associated with cheating has a negative relationship with academic progressClick or tap here to enter text.. According to the findings, most students cheat much more in virtual exams than face-to-face exams and use various ways to cheat. In this regard, Humbert et al. (2022) stated that by reminding students about cheating, making cheating more complicated and difficult, more checks should be done and valid and effective anti-cheat technologies should be used with adequate warnings (Humbert et al., 2022). Also, Miller and Young-Jones (2012) found that cheating in online classes was more common for students who take both face-to-face classes and online classes (Miller & Young-Jones, 2012).

Due to the recent developments in the field of technology and the existence of various websites for sharing and using scientific materials, the space for misuse of these websites has also been created. In line with the findings of this research, the misuse of the facilities available on the Internet was mentioned by Smith et al. (2021). They also found that students today have access to a wide range of tools that might help them. Unfortunately, many of those resources can be used to actively circumvent that process. A variety of websites offer students paid access to content ranging from test banks provided by the publisher and homework solutions to specific material produced by the instructor. Academic fraud is the use of these materials without authorization (Smith et al., 2021).

According to the findings of this research, the amount of cheating in online exams is much higher than in face-to-face exams and this amount (from 10% to 90%) is so high that teachers cannot trust the scores of students in online exams. In this regard, the results of the Fask ei al. (2014) research showed that online exams facilitate student cheatingClick or tap here to enter text.. But Grijalva et al. (2006) stated that the probability of cheating is the same in both exams which was also confirmed by Charlesworth et al. (2006). This difference in the results can be attributed to the fact that these two studies were conducted in the past, and the new technological developments can be used in cheating these days.

According to the findings of the interviews, in case of conducting online tests, security measures should be taken, such as administrating different questions to the students, designing conceptual questions versus objective questions, lack of accurate answers to questions on the Internet, etc. In this regard, Dendir and Maxwell (2020) used webcam recording software in his quasi-experimental research and the results of students' performance decreased as their cheating rate decreased. The findings also imply that online proctoring is an efficient tool for mitigating academic dishonesty in online courses (Dendir & Maxwell, 2020). Also, Hearn Moore et al. (2017) stated that making questions for the online course should algorithmically be altered for each student or draw a different but comparable scenario for each question, but, like many aspects of e-learning, it can be quite laborious at first (Hearn Moore et al., 2017). Also, according to research by Harmon, Lambrinos (2008), online exams taken under close supervision can equalize the effects of academic dishonesty in online and face-to-face courses (Harmon & Lambrinos, 2008).

The high percentage of cheating in online exams can be a warning for exam designers and organizers. It is better to reconsider the way of administrating the tests, especially online tests. Also, other findings of the research can be useful and practical for the designers and organizers of the tests, especially the decisive tests.

Conclusion

The results of this research showed that the rate of student cheating in online tests is higher than that in face-to-face tests. The most common methods of cheating in online tests are the using the textbooks, the help of classmates, and the use of the Internet. Also, the most common method of cheating in face-to-face exams is the help of a classmate, and objective questions in the exams were considered one of the important reasons for the ease of cheating. Also, according to the results of the research, some suggestions were provided to reduce cheating in the tests: holding sensitive tests in person; using more conceptual, in-depth questions in designing face-to-face and online tests, not using the questions published on the Internet browser; designing different questions for students and exam questions should not be numbered, explaining the importance of studying and the negative points of cheating for students, persuading the families in order to prevent students from cheating at home; not designing the questions the same as the order of them in the book; replacing four-choice questions with explanatory questions; increasing the distance between the students in the face-to-face exam and controlling to prevent the presence of embedded fraud; not walking and answering the questions by the invigilators, and checking students' pockets and hands in order to prevent cheating and avoid providing them with multiple draft sheets.

One of the limitations of this research was the number of interviewees, hence, it is suggested that other

researchers interested in this issue conduct interviews with a larger number and at different ages. Another limitation of the research was the relationship between the interviewer and the interviewees. The interviewer was the students' previous teacher, and some of the interviewees may not give completely honest answers due to moral issues and fear of judgment of their previous teacher, so it is suggested that the interviewer be anonymous in future research interviews. Considering the results of this study, it is recommended to conduct research on teachers to check the level of their awareness of students' cheating and the ways to prevent cheating. Also, conducting similar research in other cities with more samples can help validate the results.

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Conflicts of Interest

No conflicts of interest declared.

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