Lebanese teachers' and students' attitudes toward online teaching during the lockdown (academic year 2020-2021) versus face to face teaching after the lockdown (academic year 2021-2022)

Abstract: To decrease the spread of coronavirus, educational institutions worldwide were in a complete or partial lockdown the last academic year. This year most of them turned to face to face teaching or a hybrid teaching of both face to face and remote. So all teaching activities prepared by teachers and addressing students ran virtually last year and turned almost to be assessed face to face completely this year. In this context, this research aims to examine the attitudes of the Lebanese teachers and students in cycles 3 and 4 toward remote teaching that occurred last year compared to face to face teaching occurring this year to get fresh and valid results from this comparison. The study's participants consisted of 153 Lebanese teachers from public and private schools and 414 Lebanese students of different profiles. Data collection was done through two questionnaires, one addressing the teachers and the latter addressing the students. The content of both questionnaires was designed in a parallel way to compare teachers' and students' answers. The content broached many aspects in teaching/learning like communication, motivation, commitment, assessment and general attitudinal facts related to remote teaching and face to face teaching for teachers and students. Results of the study revealed a positive attitude in both teachers and students toward face to face teaching versus a general negative attitude toward remote teaching. Nonetheless, the indicated negative attitudes toward remote teaching were not extreme. Some of them express a preference for hybrid teaching with a dominance of face-to-face teaching, especially with regards to assessments that must not be held face to face. In addition, the teachers in the private schools described remote teaching in a positive way compared to the teacher in the public school. Yet, they still prefer face to face teaching.

Keywords: remote teaching/learning (remote education), face to face teaching, attitude, Covid-19 (coronavirus).

ملخص

للحدِّ منِ انتشارِ فيروس كورونا المستجدِّ أغلقت المؤسسات التّربويّة أبوابها بشكلٍ كامل أو جزئيّ العام الدّراسيّ السّابق. وهذا العام، عادت غالبيّة هذه المؤسّسات للتّعليم الحضوريّ أو للتّعليم الهجين الّذي يمزج ما بين التّعليم الحضوريّ والتّعليم من بُعد. وبالتّالي، فإنّ معظم الأنشطة التّعليميّة المُحضَّرة للتّلاميذ من قبل المعلّمين والّتي جرت بشكلٍ افتراضيّ العام السّابق، نُفّذت هذا العام بشكلٍ حضوريّ. وهذا البحث يهدف إلى تحديد موقف المعلّمين وتلاميذ الحلقة الثّالثة والرّابعة اللّبنانيّين من التّعليم الّذي جرى العام السّابق من بُعد مقارنة بالتّعليم الحضوريّ الّذي يجري هذا العام، من أجل الحصول على نتائج صادقة ومباشرة وحيّة

في الوقت عينه. شارك في الدّراسة 153 معلمًا/ معلّمة من مدارس خاصة ورسمية و414 تلميذًا/ تلميذة من بيئات تعليميّة مختلفة. وقد حُصّلت البيانات من خلال استمارتين، إحداهما للمعلّمين والأخرى للتّلاميذ. وصُمِّم محتوى الاستمارتين بشكلٍ متوازٍ لمقارنة إجابات المعلّمين مع إجابات التّلاميذ. وتناول المحتوى عدّة أبعاد في التّعليم– التّعلم كالتّواصل والدّافعيّة والالتزام والتّكاليف والموقف العام من التّعليم من بُعد مقارنة بالتّعليم الحضوريّ. أظهرت نتائج الدّراسة أنّ المعلّمين والتّلاميذ تبنّوا موقفًا إيجابيًّا من التّعليم الوجاهيّ مقابل موقف سلبيّ من التّعليم من بُعد. ومع ذلك، لم يكن الموقف السّلبيّ تجاه التّعليم من بُعد متطرّفًا، إذ أنّ البعض من المشاركين أظهر تفضيلًا للتّعليم الهجين على أن يكون التّعليم الحضوريّ فيه هو الطّاغي، بخاصةً في ما يتعلّق بالاختبارات الّتي يجب أن تجري بشكلٍ حضوريّ. أيضا، وصف معلمو المدارس الخاصة التّعليم من بُعد بطريقة إيجابيّة مقارنة بمعلمي المدارس الرسميّة. ومع ذلك، ما زالوا يفضلون التّعليم الحضوريّ.

Introduction and need for the study

Since the declaration of Covid-19 (coronavirus) as a worldwide pandemic in 2020 (WHO, 2020), every sector on the globe has been affected in one way or another by this virus, including education. The corona lockdown started a shift in education to a complete remote teaching/learning worldwide. Remote teaching/learning was not familiar in the majority of the schools before this crisis (El Rouadi & Anouti, 2020). But according to Okozeki (2020), remote teaching/learning was seen as a good opportunity for teachers and students to improve their performance in teaching/learning. Considering that attitudes have been assumed to exert a strong influence on behaviors, decisions, and judgments (Guyer & Fabrigar, 2015), it is essential to investigate the attitudes of teachers and students toward this new aspect of teaching/learning. Due to the scarcity of studies conducted in the Lebanese context regarding remote teaching/learning, this study aims to tackle that by investigating teachers' and students' attitudes toward remote teaching/learning in private and public schools. This study is needed at that time, right after the return to the face-to-face teaching/learning to compare in an updated way the attitudes of teachers and students toward remote teaching/learning versus face to face learning.

Problem statement

In March 2020, COVID-19 (coronavirus) was declared a global pandemic (WHO, 2020). This pandemic impacted all aspects of life, including education. A lockdown was applied in all sectors, and it was complete in many schools. This created a burden on academic institutions that found themselves overnight obliged to shift entirely to remote education. In this current academic year (2021-2022), most schools worldwide, including Lebanon, turned to face-to-face teaching or hybrid teaching between face to face and remote teaching. The face to face teaching became possible this year due to the availability of vaccination around the world (WHO, 2020). Some educational research tackled remote education in many of its aspects concerning the last academic year (2020-2021). Few is the research that tackled both attitudes, that of the teachers and that of the students, simultaneously, especially in Lebanon. Those studies disclose a comparison between the attitude toward the traditional teaching before the lockdown and the remote teaching during the lockdown. So the current academic year (2021-2022), where the teaching has turned to a face-to-face aspect, is a good time to compare the teachers' and

students' attitudes simultaneously regarding only the past year (2020-2021). In addition, the results of the previous studies were dispersed, where some found that remote teaching/learning is seen negatively by teachers and students (El Rouadi & Anouti (2020); Almahasees, Mohsen, & Amin (2021); Gururaja (2021); Kulal & Nayak (2020)), while others found it as having a positive impact on education (Farah & Frayha (2021); Wang, Cui, & Zhang (2021). It is important to note that among the factors behind the negative attitudes of teachers and students, we list the lack of tools (El Rouadi & Anouti (2020); Kulal & Nayak (2020)), lack of the value found in the traditional classes, and the difficulty in assessing and proctoring students (The Dexway Team (2020); Tamm, Fakhri, Martisiute, & Lee (2019)). Thus, in the Lebanese context, it is essential to investigate the attitudes of both teachers and students this year (2021-2022). This is a new comparison of a novel situation between the way teaching occurred last year and this year, mainly since it targets two elements of the didactical triangle simultaneously, teachers and students (Rieunier, 2001).

Knowing that face to face teaching is unstable due to the spread of the virus or other factors that might interfere, later on, it is of high importance to investigate the possible positive practices to be implemented in any similar situation.

Purpose and Significance of the study

The lockdown adopted as a preventive method to reduce coronavirus's spreading directly impacts the education fields. In the past year (2020-2021), around 1.2 billion students have been out of the school campus following their education at a distance from home (World Economic Forum, in El Rouadi & Anouti, 2020). Lebanon is one of the countries that adopt remote teaching/learning in schools in one form or another. This academic year (2021-2022), most schools in Lebanon turn to face to face teaching. Prior to this crisis, remote teaching/learning was unfamiliar for the educators, teachers and students who had no idea about their performance in this type of education. Some research studies the impact of this education on the teachers and students separately. The current study aims to highlight the attitude of both teachers and students toward remote teaching/learning versus face to face teaching. The importance of this study resides in the fact that it tackled a situation characterized by frequent oscillations between remote teaching/learning and face to face, which are still present and might be repeated later due to many factors. Considering that attitudes gained significant interest in social sciences since it is believed to have a strong influence on behaviors, decisions, and judgments (Guyer & Fabrigar, 2015), it is of considerable importance to explore the attitude of Lebanese teachers and students right after the crisis. In this way, the attitude is novel and valid. Therefore, the objective of this study is to strengthen the results of the research conducted during the complete lockdown of the previous academic year and provide an attitude of the teachers and students comparison. The current study follows a quantitative research design using descriptive analysis. The research aims to understand the teachers' and students' attitudes regarding two aspects of teaching/learning: remote and face to face. It adds data to the literature that the schools' administrations and the stakeholders would use to adopt any teaching/learning approach later.

Research questions

The study aims to answer the following research questions:

1. What are the Lebanese teachers' attitudes toward remote teaching during the lockdown (academic year 2020-2021) versus face to face teaching after the lockdown (academic year 2021-2022)?
2. What are the Lebanese students' attitudes toward remote teaching (during coronavirus lockdown) versus face to face teaching after the lockdown (academic year 2021-2022)?

Literature review

In one form or another, remote education has become a trend adopted by many educational institutions over the years. When students are far from the campus, they can use the online resources after a certain delay to compensate for the missing learning activities (The Dexway Team, 2020).

COVID-19 spreads remote teaching/learning culture worldwide (Beteille et al., 2020). In the past two years, most students worldwide, including the lower graders, relied on remote learning instead of being on the campus due to the covid-19 pandemic (WHO, 2020).

Like any new aspect of teaching/learning, remote education was supported by some people and refused by others due to many factors (The Dexway Team, 2020). For example, it is difficult for teachers to keep the students' concentration for a long duration in face-to-face teaching when it comes to lectures. In this case, remote teaching is seen to be advantageous since E-resources are known for their characteristic of holding students' attention for lengthy periods. Also, teachers in remote education can assess their students more frequently than in face-to-face teaching. Still, the quality of proctoring and the validity of the results are low compared to face-to-face teaching (The Dexway Team, 2020). In addition, in its asynchronous activities, remote education offers more flexibility to students to study according to their convenience regarding time. However, it deprives students of engagement in an actual class activity, where they lack the influence of peer learning. In undeveloped countries, remote teaching is viewed as disadvantageous due to the lack of logistic requirements necessary to teach online effectively, such as suitable Internet, electricity, and technological tools (computers, laptops etc.) (Almahasees, Mohsen, & Amin, 2021).

In the past two years, many studies examined the teachers' or the students' attitudes regarding remote teaching almost separately. We summarized below some of these studies.

When examining teachers' attitudes toward remote education after a smoothly-integrated training program, Lee, March, and Peters (2015) found quite mixed results. Concerning the use of technology tools, the teachers' attitude was positive, but their attitude toward remote teaching was still negative. Sadeghi (2019) has identified some advantages and disadvantages of remote education. According to the corresponding study, remote education eliminates commuting and consequently saves time and money. Also, remote education is characterized by its flexibility compared to traditional education. Nonetheless, remote education is characterized by a high distraction since it is difficult for students to follow the teacher's instruction for long. In addition, remote education depends on complicated technologies that might not be available in many cases. Furthermore, the most critical disadvantage of remote education is the lack of social interaction. During the crisis (Covid-19 pandemic), upon analyzing teachers' and students' perceptions (attitudes) of online classes, Kulal and Nayak (2020) found that they both have

negative attitudes toward this aspect of teaching. This attitude is because both teachers and students believe that face-to-face teaching is of real value. In the same context, Gururaja (2021) found that most teachers' attitudes toward remote teaching were not favorable due to the lack of competency necessary to manage remote teaching. Çevik and Büşra (2021), upon investigating the teachers' attitude toward remote learning during the crisis, found that teachers' attitude toward remote teaching has a mediating effect on academic motivation. Ainin et al. (2015) have analyzed the impact of the usage of Facebook on academic success. They found that using Facebook positively influenced students' academic performance due to its social effect. Tamm, Fakhri, Martisiute, and Lee (2019) stated that one of the most significant weaknesses in remote teaching is cheating since teachers cannot detect cheating by proctoring at a distance, even with a video camera.

In Lebanon, El Rouadi and Anouti (2020) identified dissatisfaction with remote teaching in intermediate and secondary teachers mainly due to the inability to assess students online. Also, in Lebanon, Farah and Frayha (2021) found that teachers in private schools expressed a preference for teaching in a physical setting. However, they showed a positive perception of remote teaching despite their previous lack of remote teaching on a full-time basis.

For decades, it has been agreed that attitude plays a pivotal role in many areas of social science, which is why it has gained a great importance in social research, including education. As mentioned previously, the attitude was assumed to strongly influence an individual's behaviors, decisions, and judgments (Guyer & Fabrigar, 2015). According to Gardner (1985), attitude is developed based on a complex of beliefs about an object. He claimed that it is related to the individual's instinct and feeling, perception of concepts, prejudice or bias, fears and threats about any specific idea. According to Wegener (2011), attitude is defined as a relatively general and enduring evaluation of an object, person, or concept with a positive or negative dimension. Consequently, attitude is a crucial factor in every situation in individual life, including remote education.

Whether advantageous or not, remote education was imposed on all students and teachers, regardless of their attitudes due to the pandemic. Therefore, it is significant to investigate the students' and teachers' attitudes toward this aspect of teaching. Moreover, after the peak of the crisis (last academic year: 2020-2021), it is essential to get new results before teachers and students forget their perceptions for an updated comparison of their perceptions in both years (last academic year one and the actual one).

Methodology

Research participants and instruments

Many factors were identified behind the teachers' negative attitude toward remote teaching based on the literature. Two of them were the difficulty in assessing and proctoring students (El Rouadi and Anouti (2020); The Dexway Team (2020); Tamm, Fakhri, Martisiute, & Lee (2019)), and the most prominent out of all was the lack of social interaction (Sadeghi, 2019). These two factors are to be investigated in this study that followed a quantitative design. Two questionnaires were built based on the literature and the need of the study. Both questionnaires

are split into four main sections with slight differences regarding the items in each section between that of the teachers and that of the students.
The first section sought to gather demographic and logistic information about the participants, such as gender, age, teaching experience, class, etc.
The second section included items that collect information about communication and interaction during remote and face to face teaching. The items in this section aimed to investigate the attitude from a social point of view, knowing that communication and interaction are two dimensions in social interaction (Manusov, 2020). For example, in the teachers' questionnaire, the items in this section highlighted the following: the communication between teachers and students, the student's participation, their motivation, their interaction with the subject taught, and their commitment regarding homework as perceived by teachers. Similarly, in the students' questionnaire, the same items were asked to be answered from the student's point of view.

The third section included items to gather information about the scored assessments. The items of this section were decided to gain an understanding of the reasons behind the difficulties in assessing students in remote teaching, as mentioned in the literature (El Rouadi and Anouti, (2020); The Dexway Team, (2020). The items that were similar in both questionnaires highlighted the following: the communication with the students/teacher during the exam, the student's commitment and preparation, the possibility of cheating, the proctoring during the exam, to know the teachers' and students' perception regarding this issue in a parallel way. In addition, some extra items that concerned only teachers were added in the corresponding section: the preparation of the exams' items, the validity of the exams' results, the correction of essay and objective items (multiple-choice, matching, …), while the items of the last section aimed to gather general attitudinal information regarding face to face teaching versus online education, which is the main issue in this study.

The researcher employed a 5-point scale in sections 2 and 3 of the questionnaires.
The teacher questionnaire included 24 items, and that of the students included 15 items distributed in the four mentioned sections. The teachers were 153 in total, teaching different subjects and cycles (from cycle one till cycle 4). On the other hand, the participating students were 414 from cycles 3 and 4 and not younger to be able to express their attitudes validly. It is important to note that the terms teaching/learning were used for the students' questionnaire instead of teaching alone since students are involved in both teaching and learning activities. All questionnaire items and the corresponding results were mentioned in the analysis section of the study.

The questionnaires were disseminated online for teachers and students to obtain the necessary information related to the teachers' and students' attitudes toward remote teaching/learning versus face-to-face education.
The questionnaires were piloted on ten teachers and 15 students, followed by slight adjustments based on piloting.
In the questionnaires, the term "online teaching/learning" was used instead of "remote teaching/learning" since it might be more familiar for the participants.

Data Collection

The questionnaires were created as an online Google Form split into four main sections that need about 5 minutes to be filled. The questionnaires' link was shared via WhatsApp with many groups of teachers, whether in public or private schools. The teachers were asked to distribute the students' questionnaires to their students in cycles 3 and 4. The questionnaires remained open to responses for three weeks during January 2022. This yielded to collect answers from 153 teachers and 414 students, a relatively fair sample for a statistical study.

Probability (random) sampling was used for this study, it is the suitable technique for this study among the different available sampling techniques. This technique allows all eligible individuals (teachers and students in this case) to be chosen, and the results obtained can be generalized (Glen, 2015; Berndt, 2020).

Data analysis and findings

Research question 1: *What are the Lebanese teachers' attitudes of remote teaching during the lockdown (academic year 2020-2021) versus face to face teaching after the lockdown (academic year 2021-2022)?*

To answer this question, the teachers' questionnaire items have to be analyzed following the order of the sections.
The information related to the first section of the questionnaire is shown in table 1.
In this table, we mentioned the scale that got the highest percentages for each item, and in some items, we noted two scales when the percentages are considerable.

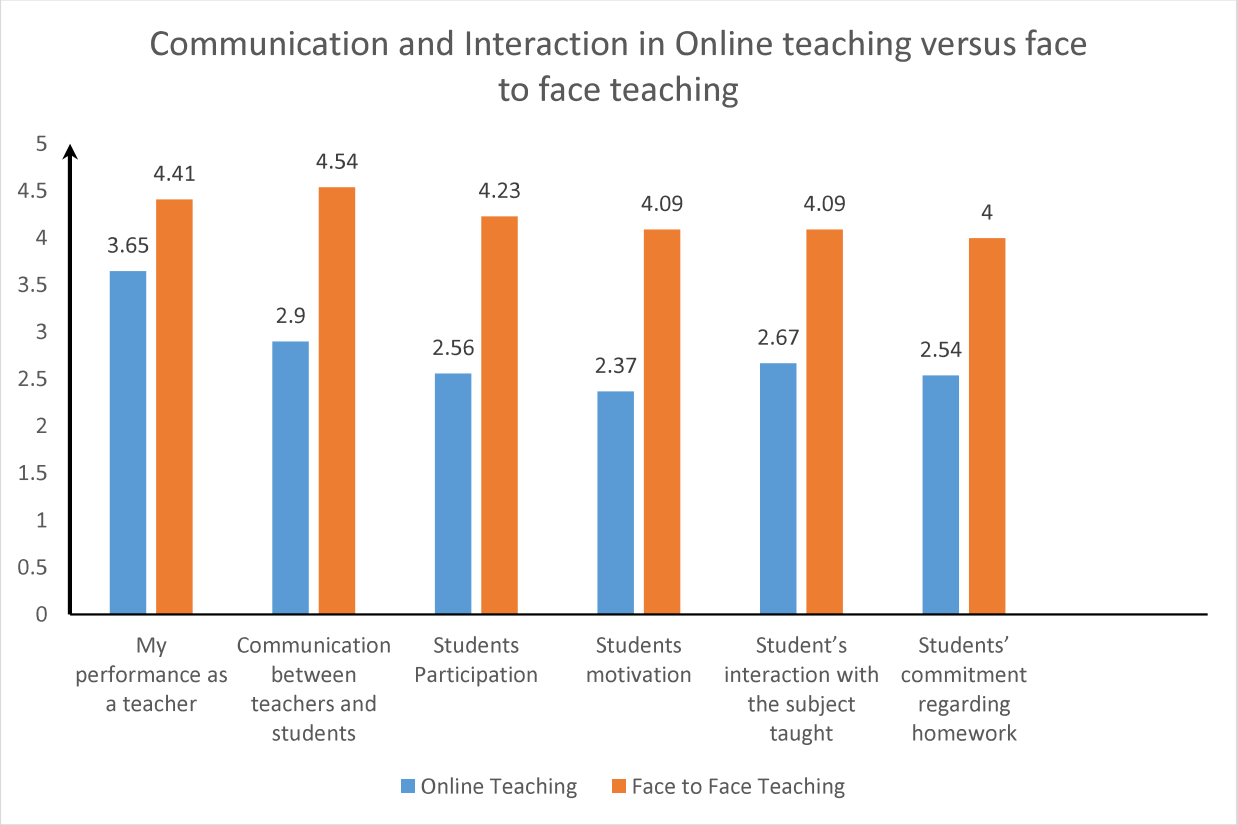
Table 1: Percentage of Teachers' Responses on Demographic Information

Section 1 Items	Scale	Percent
Age	[26-35]	44. 4
	[36-45]	34 %
Gender	Female	88.9
	Male	11.1
Teaching experience	[3-10]	36.6
	[11-20]	36.6
Subject taught	Science	49 %
	Math	28 %
Grade taught	Cycle 3 and 4	65.4
Type of school	Private tuition between (3 million and 6 million)	73.2
	Public	14.4
Online Teaching aspect (2020-2021)	Entirely live sessions (Zoom- Microsoft teams- google meet- others)	30.1
	Part live online session and part via a platform	56.9

The results showed that most of the teachers were between 26 and 45 years old, and most of them (88.9 %) were female. This percentage reflects the feminization of teaching identified by some as one of the problems in education (Lovenfosse, 2018). Furthermore, most of the teachers were math and science teachers (77%), and the majority followed a part live online sessions and part via a platform as a teaching aspect (56.9%) during the lockdown year (2020-2021), while some of them (30.1 %) had entire live sessions.

In section 2 of the questionnaire, to investigate some aspects of teaching through remote and face to face teaching, teachers were asked to give a score from 1 to 5 for each item in this section. Score one stands for the least score, and 5 is the highest. The results of this section are shown in graph 1.

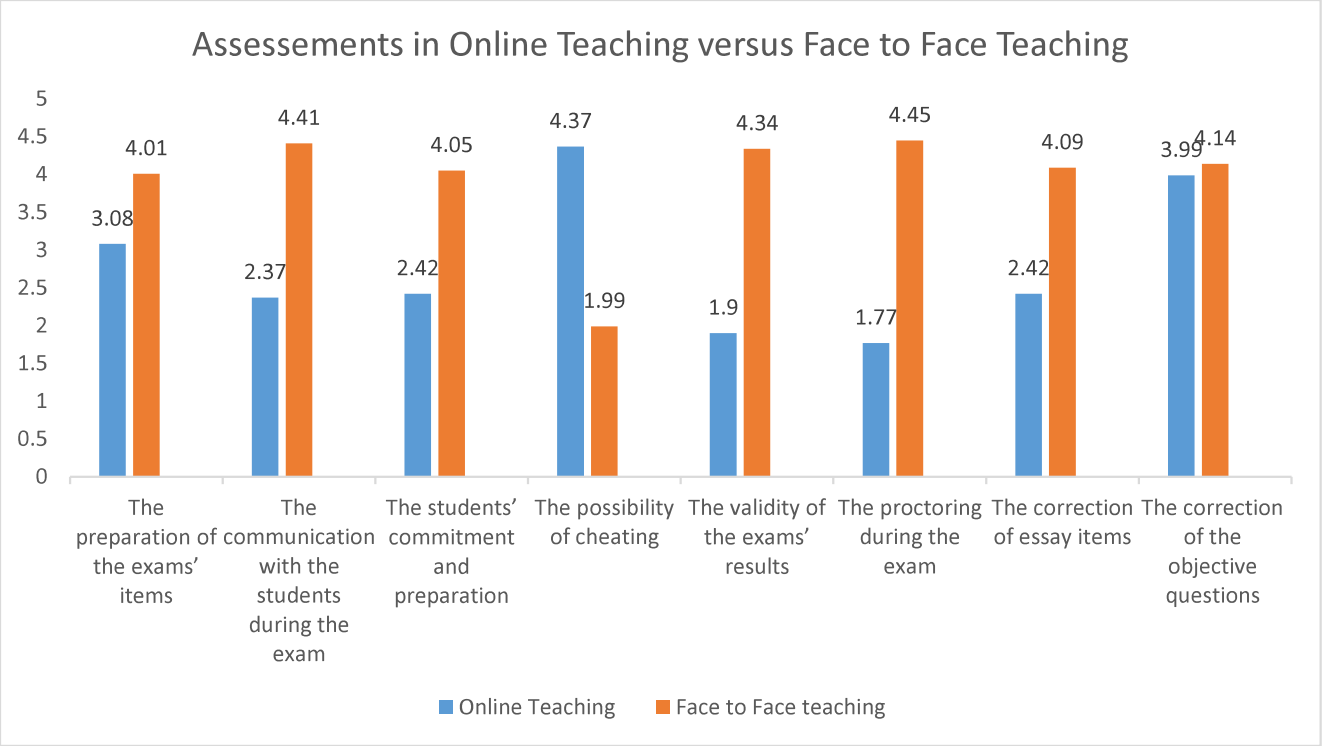
Graph 1: Communication and Interaction in Online Teaching versus Face to Face Teaching



In the graph, the mean of each item was represented. As it can be noticed, all items related to online teaching got scores less than those related to face to face teaching. All the means of the items in this section pertaining to the online teaching starts by 2, which indicates that all items were given low scores out of 5. The single value in this category that is higher than 2 was for "My performance as a teacher", which is normal to be a little high since it is difficult for a person or the teacher to evaluate his performance negatively. On the other hand, the items related to face-to-face teaching were given high scores by the teachers, so all means are found to be 4 and above.

The results of section 3 items of the questionnaire related to scored assessments are shown in graph 2.

Graph 2: *Assessments in Online Teaching versus Face to Face Teaching*



All items related to assessments in online teaching showed means between 1.77 and 3.08 except for the item which the "possibility of cheating". And all items related to face to face teaching showed means above 4 except definitely for that of the "possibility of cheating". This revealed that teachers expressed a negative attitude toward practices related to assessment, keeping in mind that 1 was for the least grade and five for the highest. The item in online teaching that was the "correction of the objective questions" got a mean equal to 3.99 versus a mean equal to 4.14 to that of face-to-face teaching. It was excepted for this item to be evaluated positively for online teaching, knowing that objective questions can be corrected automatically by a given software. Even with this facility, teachers still prefer correcting these items in the traditional method.

The results of section 4 items of the questionnaire related to general attitudinal information regarding face to face teaching versus online education are presented in table 2.

Table 2: General Attitudinal Information regarding Face to Face teaching versus Online education

Section 4:	Scale	Percentage
Without talking about the details, all in all, how do you describe face to face teaching with respect to online teaching:	Face to face teaching is the real teaching while online is not, so we can't compare between them	13.7
	Face to face teaching has a lot of advantages in comparison to online teaching	79.7

	Face to face teaching is equal to online teaching	6.6
Without talking about the details, do you prefer teaching for further years to be: face to face, hybrid, or completely online?	Entirely Face to face	56.9
	Hybrid (between face to face and online)	41.8
	Entirely Online	1.3
After teaching online, what are the practices you have changed in the face to face teaching?	Explanatory videos	42.7
	Online assessments	12.2
	Virtual lab	32.6
	E-stories	11.5
	Nothing	1

For the first item "How do you describe face to face teaching with respect to online teaching," the highest percentage was the "Face to face teaching has a lot of advantages in comparison to online teaching". This choice showed that most of the teachers didn't show an extreme negative attitude toward online teaching, but they declared that face to face teaching is way better than online teaching. This attitude was strengthened by the results of the second item, where 41.8 % of the teachers showed a preference for teaching to be hybrid between online and face to face teaching. However, the highest percentage was for entirely face to face teaching (56.9 %). Also, teachers said that they benefit from online teaching practices mainly using videos (42.7 %) or virtual lab (32.6 %), which can be taken as a positive practice driven by online teaching.

Finally, the researcher attempted to check whether the public and private schools' teachers shared similar or different attitudes toward remote teaching. The last three items in the questionnaire were chosen to be tested since they give general attitudinal information concerning remote teaching. Hence, a one-way ANOVA test was conducted. The homogeneity of variance result was as follows: F (1,132) = 6.5, p = 0.012; since the p-value is less than 0.02, then homogeneity of variance is not assumed. Accordingly, the Welsch Test was reported to ensure that the results were accurate.

Robust Tests of Equality of Means

		Statistic[a]	df1	df2	Sig.
1 Without talking about the details, all in all, how do you describe face to face teaching with respect to online teaching:	Welch	4.066	1	24.843	.055
2 Without talking about the details, do you prefer teaching for further years to be: face to face, hybrid, or completely online?	Welch	.216	1	27.626	.646

3 After teaching online, what practices have you changed in face-to-face teaching? (You can choose more than one answer)	Welch	5.592	1	45.323	.022

a. Asymptotically F distributed.

Since the assumption of homogeneity of variance was not met for this data, we used the obtained Welch's adjusted F ratio (4.06), which was significant at the .05 reported as Welch's F (1, 24.83) = 4.066, $p < .001$ (or, $p < .05$). Therefore, it can be concluded that there was a slight significant difference between public and private school teachers with regards to "Without talking about the details, all in all, how do you describe face to face teaching with respect to online teaching" which describes face to face teaching with respect to remote teaching.

As for "the practices you have changed in the face to face teaching"?, the obtained Welch's adjusted F ratio (5.59) was used, which was significant at the .05 reported as Welch's F (1, 45.32) = 5.59, $p < .02$ (or, $p < .05$). Therefore, it can be concluded that there was a significant difference between public and private school teachers with regards to "The practices you have changed in the face-to-face teaching?".

As for the item "Without talking about the details, do you prefer teaching for further years to be: face to face, hybrid, or completely online?" there was no significant difference. Based on the results of these items, it can be said that teachers' attitudes in public and private schools are not considerably different. This is because when they are asked about their practical preference for the aspect of teaching, they both agree that they don't prefer remote teaching. This analysis is further supported by having the difference in the results in item "Without talking about the details, all in all, how do you describe face to face teaching with respect to online teaching" small.

So even if the teachers described the remote teaching and the practice that has changed after remote teaching differently, they still both refused the full remote teaching. This difference in attitude might be explained by the availability of technological tools in private schools contrary to public schools. (Farah and Frayha (2021); Okozeki (2020)).

Research question 2: *What are the Lebanese students' attitude of remote teaching (during corona virus lockdown) versus face to face teaching after the lockdown (academic year 2021-2022)?*

To answer this question the items in the students' questionnaire have to be analyzed following the order of the sections in the questionnaire.

The information related to the first section of the questionnaire are shown in table 3.

Table 3: Percentage of Students' Responses on Demographic Information

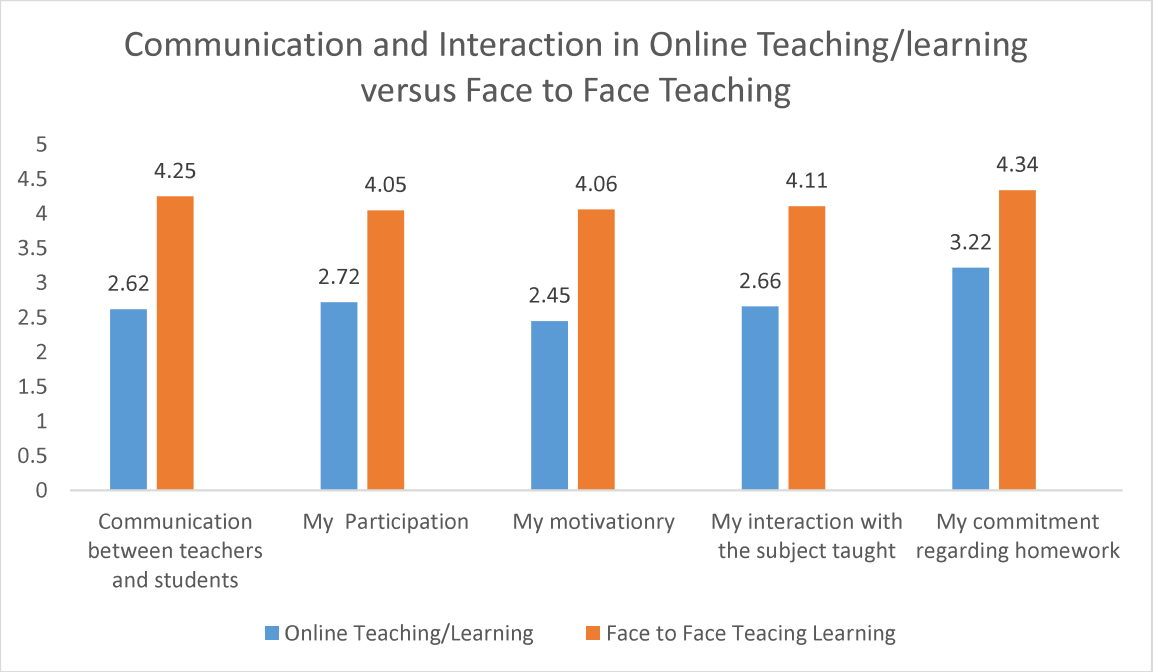
Section 1 Items	Scale	Percent

Gender	Female	61.8
	Male	38.2
Grade	Cycle 3	27.3
	Cycle 4	72.7
Type of school	Private tuition between 3 million and 6 millions)	31.9
	Private tuition between 8 million or above)	25.1
	Public	43.0
Online Teaching aspect (2020-2021)	Entirely live sessions (Zoom- Microsoft teams- google meet- others)	56.0
	Part live online session and part via a platform	40.6
	Entirely via a platform or via WhatsApp (videos- sheets- exercises correction…)	3.4

The results of this section showed that the majority of students were female (61.8%), and most of the students are in cycle 4 (72.7 %). Furthermore, the students were distributed on three types of schools mentioned with a highest percentage for the public school (43%). Also, the way they followed their learning during the lockdown varied mainly between Entirely live sessions (56%) and part live session and part via a platform (40.6%). This variety strengthens the validity of the other results in the questionnaire since it revealed a difference in the students' profiles.

In section 2 of the questionnaire, to investigate some aspects of teaching through online and face to face teaching/learning students were asked to give a score from 1 to 5 for each item in this section. Similarly to the teachers' questionnaire, the score 1 stands for the least score and 5 is for the highest. The results of this section shown in graph 3.

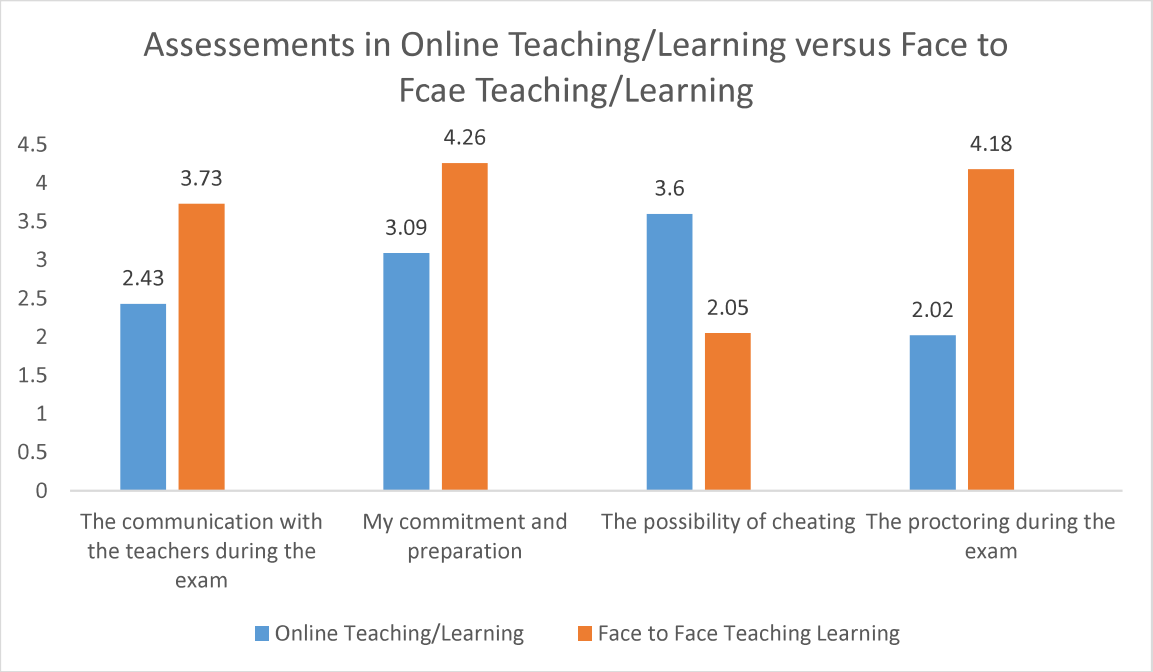
Graph 3: Communication and Interaction in Online Teaching/Learning versus Face to Face Teaching



In the graph, the mean obtained for each item is presented. The results showed that all items related to online teaching/learning got around 2 except for "My commitment regarding homework", which got a higher mean equal to 3.22. While the means of all items related to face to face teaching/learning got means around 4 and above, which were higher than that of the online teaching/learning. These results showed that most students evaluated face to face teaching/learning positively with respect to online teaching/learning.
The results of this section were similar to the ones obtained by the teachers, taking into consideration that the items of both questionnaires of teachers and students were designed in a similar way to compare the results efficiently.

The results of section 3 items of the questionnaire that are related to scored assessments are shown in graph 4.

Graph 4: *Assessments in Online Teaching/Learning versus Face to Face Teaching/Learning*



All items related to online teaching/learning assessments showed means between 2.02 and 3.6 except for the item "possibility of cheating". These means are slightly higher than that of the teachers. This difference is logical since students might benefit from the online assessment adding that proctoring is less strict than that in face-to-face cases. For the items related to face to face teaching, all of them showed means close to 4 except definitely for that the "possibility of cheating". This revealed that, like teachers, students expressed a negative attitude toward practices related to assessment in remote teaching/learning.

The possibility of cheating is similar to that of teachers, where students said it is easier to cheat in online assessments. Still, the means are a little lower than teachers' because students benefit from the situation. Even with the probable benefit, the students might have from online assessments, students showed a preference for face-to-face assessments as the teachers did.

The results of section 4 items of the questionnaire that are related to general attitudinal information regarding face to face teaching versus online education are represented in table 4.

Table 4: General Attitudinal Information regarding Face to Face teaching/Learning versus Online teaching/learning

Section 4:	Scale	Percentage
Without talking about the details, all in all, how do you describe face to face teaching with respect to online teaching:	Face to face teaching is the real teaching, while online is not, so we can't compare between them	32.6
	Face to face teaching has a lot of advantages in comparison to online teaching	51.4
	Face to face teaching is equal to online teaching	10.6
Without talking about the details, do you prefer teaching for further years to be: face to face, hybrid, or completely online?	Entirely Face to face	59.2
	Hybrid (between face to face and online)	34.5
	Entirely Online	6.3

For the first item "How do you describe face to face teaching with respect to online teaching," the highest percentage was the "face to face teaching has a lot of advantages in comparison to online teaching", precisely as the results in the case of teachers. This choice showed that most students didn't offer an extremely negative attitude toward remote teaching but preferred face-to-face. The highest percentage of students (59.2%) said that they prefer entirely face to face teaching, and only 34.4 % said that hybrid teaching is their preference. The results, in general, are similar to that of the teachers, but a higher percentage of teachers preferred hybrid teaching.

Discussions

The study was conducted to investigate the Lebanese teachers' and students' attitudes toward remote education. Regarding communication and interaction, the attitudes of both teachers and students were similar. The results revealed a negative attitude in both (students and teachers) toward remote education due to the poor communication and interaction compared to face-to-face education. The results in this section aligned with some previous results in the literature. (Kulal & Nayak (2020); Gururaja (2021); Sadeghi (2019); Almahasees, Mohsen & Amin (2021) For the assessment, the results were similar to the communication and interaction, where both teachers and students expressed a negative attitude toward practices related to assessment in remote teaching. Those results came with the results of (The Dexway Team (2020); Tamm,

Fakhri, Martisiute, & Lee (2019) which stated that proctoring online exams is the biggest weakness in remote education, which consequently reduces to the minimum the validity of the online exams.

For the general attitude toward remote education versus face-to-face education, the results were also seen in general negatively by both teachers and students. Still, both of them agreed that remote education has some advantages. The general negative attitude was similar to the studies listed above. However, the results were different between teachers in private and public schools. The teachers in private schools described remote teaching as having some advantages but still preferred face-to-face education. These results align with the study of Lee, March, and Peters (2015), who stated that concerning the use of technology tools, the teachers' attitude was positive. However, their attitude toward remote teaching was still negative. They are also homogeneous with Farah and Frayha (2021) results, who found that teachers in private schools expressed a preference for teaching in a physical setting. However, they showed a positive perception of remote teaching despite their previous lack of remote teaching on a full-time basis.

Limitations of the study

Many factors can be identified as limitations in this study. The first factor is related to time. Although time is crucial in this study where the situation of the academic years (2020-2021 and 2021-2022) might not be repeated in the same way- the exploration of the attitude right after the crisis of the past year is the strong point in this study- time can be actually taken as a limitation since the attitude might change over time due to other experiences. The second factor is related to the sample of teachers and students, which might threaten the generalizability of the results. Finally, the third factor is the research design, which is quantitative. On the one hand, quantitative research is characterized by the advantage of collecting considerable data in a relatively short period. On the other hand, the results of this research could be strengthened by qualitative data (interviews, focus groups..) to have a deep understanding of the situation (Yin, 2009).
Nevertheless, this study relies on revealing some facts related to the teachers' and students' attitudes via online teaching and face to face one.

Conclusion and study implications

Throughout the past two years, the world's teaching aspect changed from face to face teaching to remote teaching due to coronavirus. This year the schools returned to face to face teaching or to the hybrid teaching that varies between face to face and remote teaching. The results of this study conducted to investigate the attitudes of teachers and students toward remote education versus face to face education show that generally, teachers and students have a similar negative attitude toward remote teaching. In contrast, they offer a positive attitude toward face-to-face teaching. These results are obtained from teachers and students from schools of different profiles. The teachers show dissatisfaction regarding their students' communication, motivation, interaction with the subject taught and commitment toward the homework. However, they evaluated their performance as a teacher in remote teaching in an acceptable way even if it was assessed better in face-to-face teaching.

Similarly, the students show the same dissatisfaction regarding the same aspects of teaching /learning. Also, teachers show dissatisfaction toward scored assessments regarding the preparation of the exams, proctoring, validity of the results, and the possibility of cheating. In this context either, the students show dissatisfaction with the online exam. Although teachers and students show a generally positive attitude toward face-to-face teaching, they believe that remote teaching has some advantages, especially regarding the usage of e-resources (videos- virtual labs..). Finally, a difference is noticed in teachers' attitudes in private and public schools. The teachers in the private schools positively described the remote education concerning the teacher in public schools. Yet those teachers in the private schools still believe that face to face education is favorable to them.

Many implications are associated with the results of this study. The study analyzed Lebanese teachers' and students' attitudes toward remote teaching versus face to face teaching. Its value lies in targeting two critical academic years, one of the total lockdowns due to coronavirus and the one right after the lockdown. The study revealed some weak and strong points of both aspects of teaching. So it is a start of further research to investigate the effect of each of the identified teaching aspects in depth. The study also holds implications for the school administrations to look deeper for ways to benefit from the positive aspect of remote teaching and minimize the negative effect.

Recommendations

Teachers' and students' attitudes toward remote teaching versus face to face teaching were analyzed through this study. The study's outcomes indicate that the sample of the Lebanese teachers and students in public and private schools of different profiles strongly believe that face to face teaching is much more advantageous with respect to remote teaching; nevertheless, they didn't deny the advantage of some aspects of remote teaching. Those advantages are mentioned in a more pronounced way in teachers of private schools. Accordingly, one can say that schools have to limit their practices to face to face teaching. Still, considering that face to face teaching might be vulnerable due to some factors that might pop out in the future, it is of great importance to enhance remote teaching to utilize its benefits when necessary. Therefore, it is essential to increase the awareness of teachers and students regarding remote teaching for better teaching and learning. In all case scenarios, it is recommended that assessments be held face to face and not online. This might strengthen the commitment of students to required tasks.

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