

## **The Impact of COVID-19 on the Academic Performance of College Students in South Korea**

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### **Abstract**

The aim of this study to explore how academic performances of Korean college students have been affected by Covid-19 while being contained at their homes and social distancing. The data of 200 university students in South Korea who have taken non-face-to-face lectures were collected through an online questionnaire to see affect of Covid-19 in their academic performance and what are the changes in their study time and academic performances. The study found that Korean students showed poor academic performance due to lack of in person lecture and lack of self-management in online classes as they are putting off doing their assignments and listening to lectures. Result concluded that poor academic quality, such as poor interaction with professors, can significantly impact on their academic performance.

**Keywords:** *COVID-19, Academic performance, Students, Internet, Communication*

### **Introduction**

The global pandemic regarding the coronavirus has changed the world socially, politically, and economically. The virus started in Wuhan and started to spread throughout China in December 2019, and it quickly spread all around the world (Mallapty S., 2020). A Chinese visitor, who entered South Korea on January 20th, 2020, was confirmed as the first infected person in the country (Duddu P.,2020). Then on the 30th of January, the World Health Organization (WHO) declared the outbreak of the virus to be a ‘Public Health Emergency of International Concern’ and in March, it announced the virus as a pandemic (WHO, 2020). The Korean government upgraded its crisis alert level and formed the Central Accident Control Headquarters for COVID-19 to control the situation (Universityworldnews.com).

The virus has negatively influenced South Korea’s society, economy, education, citizens, etc. Social distancing has caused some stores to close their businesses which greatly affected the catering industry. Major airlines and many hotels are suffering from economic losses due to a sharp decline in travelers.

According to an article from the WHO, COVID-19 has put global workforces at risk of losing their livelihoods (Chriscaden K. 2020).

COVID-19 has been proved to be highly contagious, so citizens were warned to avoid group activities of five or more people mostly in the Seoul and Gyeonggi province (restriction level 4). For this reason, most schools have adopted online classes due to concerns about group infections. The sudden change to having online classes was not only difficult for the professors/teachers, but the students were also unadjusted to the new environment. Their studying time and methods have changed greatly because of psychological and technological reasons. Not to mention, there are some features of physical lectures that cannot be applied to online classes, such as the supervision of professors, interactions between students, and high concentration levels as well as emotional and social attachment with the classroom environment.

The psychological changes due to the severity of the pandemic and social distancing have caused feelings of unease. The level of anxiety has also risen due to continuous reports on confirmed cases of COVID-19. Not being able to meet family and friends has made people more depressed and this has led them to become more dependent on the Internet.

As for the technological aspect, students spend most of their time on the Internet due to online classes, which has led to an increase in Internet consumption. This can be viewed positively in that it has created more learning opportunities and heightened motivation for students to learn. However, it has also resulted in the addiction to online social networks and lack of physical communication because people have been spending more time on online shopping, games, and social media.

As for students that take online classes, they spend much more time on the Internet. Addiction to the Internet has affected the academic responsibilities of university students, meaning that they have become less productive. As mentioned before, online classes have limitations compared to face-to-face lectures, especially the lack of concentration. Students' increasing rate of addiction also harms their academic performance as well due to time spent less on studying. As there is no strict supervision on what the students do, they can do other tasks rather than listening to lectures or study while using the Internet. Especially in the case of pre-recorded lectures and assignments, many students procrastinate from watching the videos or submitting their work until the very end of the deadline. Having said that, recent research done by Islam M. et al. (2020) found that big number of Korean students prefer to have pre-recorded video lectures over Live Zoom lecture because students can revisit those videos before the exam or repeatedly watch them if they do not understand certain concept. Due to easy access of Internet and technological improvement, young generation are more engage with the internet and get addicted with Social Networking Sites like Facebook, Instagram, or online games. In other words, they lose focus and concentrate due to their addiction to the Internet and form habits of laziness during non-face-to-face classes. In this sense, the main purpose of this study is to find out how Korean students' academic performance is changing and what the main factors are.

### **Literature Review**

It is already known that every country is living an online life because of COVID-19 (Abbruzzese J., 2020). Our research is centered on changes in educational aspects. There have been several pandemics

in the past, but COVID-19 is the first and most serious one to influence the education system. UN Secretary-General António Guterres argues that the Corona crisis is

“The most severe disruption in the world’s education systems in history.” (UNESCO,2020).

The coronavirus has changed the education system in many aspects such as the way of teaching and learning, performance evaluation method, and even the whole academic year schedule. The changes have occurred all over the world, and they can be most noticeably seen in South Korea.

Since the spring semester of 2020, kindergarten to universities in South Korea started implementing an online lecture system (Kim S.Y. 2020). The Education Department of South Korea at first postponed the start date of school, waiting for the coronavirus to diminish, but as it spread quicker and wider, they decided to implement the online lecture system (Lee M-J.,2020). Students and teachers began using online platforms such as EBS online class for the lower grades and web conferencing application called ‘Zoom’ for the older students to continue their academics (Yonhap News Agency, 2020). Teachers prepared their lectures and conducted them through recorded videos or real-time classes. Adapting the online education system led to the change in course structure as well as the performance evaluation method. Students took most of their time doing their assignments since it is not easy for video lectures to prevent students from cheating (The Washington Post, 2020). Because the most practical way to test whether the student understands the lecture or not is by giving out assignments, some teachers unavoidably evaluate students mostly according to the assignment students submitted, not exams, discussion, and class participation.

More broadly, what can be seen is the overall change in academic schedules. The Education Department allowed the reduction of school days, and it was the second time since the previous MERS outbreak (KBS World Radio, 2020). However, it does not end here. As the number of school days decreased, especially for the Korean high school seniors, whose College Scholastic Ability Test called, ‘Su-neung,’ are just around the corner, failed to make all the progress necessary for the CSAT (Jun-tae, K.,2020). To solve this, the Education Department delayed the date of CSAT to December, which had usually been conducted in the middle of November (Chung A., 2020). This is the fourth postponement of the CSAT since 1994 and the first case for the date delay due to pandemic (Kim S-y., 2020). Spontaneously, both the college entrance schedule and the admission process were also changed due to the postponement of the CSAT date. Looking into the relationship between the COVID situation and education, the increased uses of electronic devices bring both benefits and drawbacks in terms of education. Before the Covid-19, the use of digital media was largely part of leisure (Gómez-Galán, J et al. .2020). However, as the Corona crisis began and most of the activities turned into non-face-to-face, electronic devices are becoming more deeply embedded in our lives. In short, the Internet has become more indispensable in our lives. Specifically, education is difficult to proceed without the Internet and technologies (europeandataportal.eu/de). In the Corona era, where all levels of students from kindergarten to college are taking classes online, the online lecture system brings about not only the advantages but also the disadvantages. Some aspects of COVID-19 positively affected students' academic performances. “The benefits of digital technologies include the development of skills, creativity, new learning opportunities, socialization and motivation.” (Gómez-Galán, J et al. .2020). The increase of online classes led some students to “become self-directed learners” and to have an improvement in their learning ability as they get more chances on personal learning (Mukhtar et al.,

2020). Also, it helped students to expand their knowledge on various technologies. Students taking online classes can explore the area of new technology and develop their abilities in Information Technology (IT) (Saxena et al., 2020). According to a paper that studies the influence of COVID-19 on students' competencies, it is found that "Students feel motivated through the specific use of technology in the classroom" (James Francis, 2020). Besides, online classes and social distancing also showed positive effects. To be specific, the researchers divided the control group and the experimental group. The students in the experimental group were required to practice social distancing and fulfill tasks that were five times as many assignments as the students in the control group given normal physical classes. The researchers were able to find that the students in the experimental group had improved their grades. Thus, they confirmed that there is an improvement in the student's learning performance that guarantees good progress this academic year despite the COVID-19 (Gonzalez et al. 2020). But there would be certain limitations to represent all students in the world.

However, some disadvantages stand out. According to earlier research, "The negative aspects include, at least, the lack of communication limits, reduced listening skills, and emotional withdrawal." (Gómez-Galán, J et al. .2020). Those aspects are all related to psychological impacts. Also, as the use of electronic devices increases due to online replacement classes, the boundaries between their leisure and study hours are being removed (Krithika V. et al. 2020). Even before the COVID-19 pandemic, Internet addiction has been considered a serious problem and is now being dealt with more seriously. Recent research done by Islam M. (2021), showed Korean college students have a close link between excessive use of smartphone and depression as well as poor lifestyle. Furthermore, internet abuse is known to have a bad influence on the psychological state of young groups (Gómez-Galán, J et al. 2020). There are obvious flaws in students continuing their studies in a state of psychological instability. The researchers at the University of Fallujah, Iraq found out that spending more hours on electronic devices decreases the scientific level of students (Ali, A. et al. 2019). Therefore, it is inferred that increasing the use of electronic devices can interfere with students' studies and academic performance.

## **Methodology**

### **Participants**

A survey was conducted to understand students' thoughts on online classes, changes in their studying time, and uses of the Internet. The sample for this study was taken from different cities of South Korea. A total of 250 questionnaires were distributed through university online portal system. however, 212 questionnaires were received out of that 200 questionnaire were found to be accepted for this research as remaining were eliminated due to missing and in appropriate answers. A majority of the participants are from Yonsei University Mirae campus and remaining are from other universities. The online questionnaire was made with Google Forms and was designed to collect data from respondents from November 27, 2020, to December 2, 2020. Due to time constraint, and Covid-19 situation we opt not to collect data in person, hence we could not manage to extend our data collection, therefore, we have limited number of samples compared to what we have initially (approximately 400 data) planned to collect. The questionnaire was divided into three sections. The first part of the questionnaire deal with the demographic data, second part of the questionnaire included 8 questions about the change (before

and after) of the participants daily life due to COVID-19, such as the number of times respondent go outside in a week, how they spend their leisure time, how much time they spend on the Internet, etc.

The final section of the questionnaire has a total of 11 questions about the changes in students' study time, study habits, and academic performance. The questions mostly include the ones comparing students' current online studies with face-to-face lectures, such as the degree of procrastination during online classes in universities, study time, and GPA changes. Dichotomous questions (yes or no) and ordinal scales were used and for a certain question, a contingency question was asked.

## Results

As mentioned earlier that a total of 200 valid data were considered for this research paper, out of which 61.5% of the participants are aged 19 to 22, and 28.5% of them are 23 to 26 years old. The rest 10% are aged 27 to 33 years (Fig.1). Since more than half of the participants are 19 to 22, the average age of the participants is early 20, and the median and mode are within 19-22. Since college students who are greatly influenced by online life in their academic performance are from freshmen to juniors, the data shows the right target for the research. As mentioned earlier that a total of 200 valid data were considered for this research paper,

Figure 1. Age groups of participants

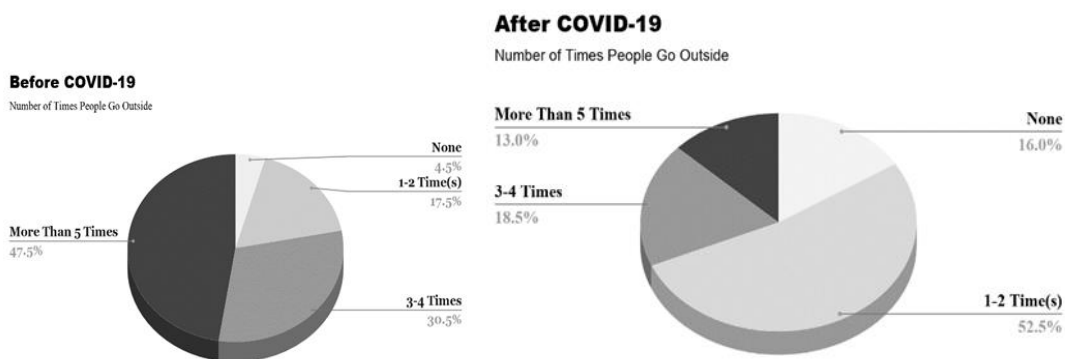
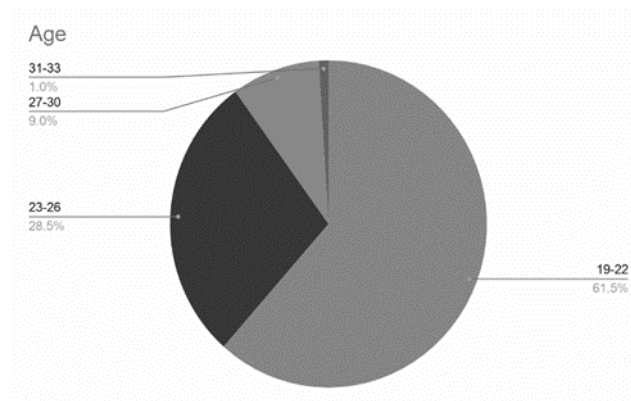


Fig. 2. Before Covid-19(No. of times people go outside)

Fig. 3. After Covid-19(No. of time people go outside)

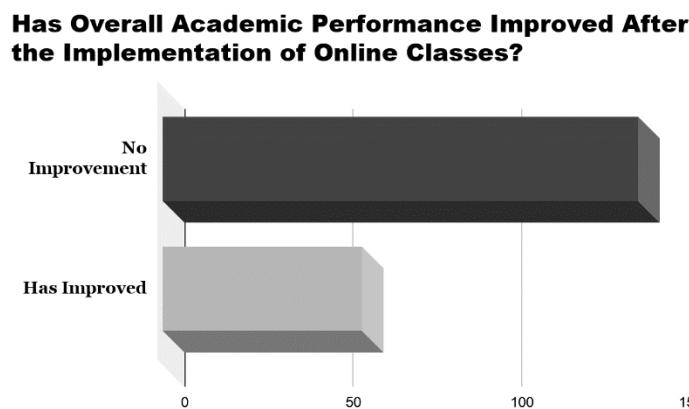
Figure 2, 3 and table 1. show us the change in daily life before Covid-19 and after Covid-19 pandemic. Second part of the survey-In this part we were able to see the overall change in students' lives.

**Table 1.** The Changes in Daily Life (Number of Times People Go Outside)

	<b>Before COVID-19</b>	<b>During COVID-19</b>
<b>None</b>	9 (4.5%)	32 (16%)
<b>1-2 Time(s)</b>	35 (17.5%)	105 (52.5%)
<b>3-4 Times</b>	61 (30.5%)	37 (18.5%)
<b>More than 5 Times</b>	95 (47.5%)	26 (13%)

As shown in the Figure 2., the number of times people go out has significantly decreased. Before the spread of COVID-19, 47.5% of the respondents went outside more than 5 times a week, but after the pandemic, 52.5% of the respondents answered that they go out 1-2 times a week. This data shows that active lifestyles have changed into social-distancing lives. Through the changes in their lives, people have become 'homebodies' regardless of their own will. 'Homebody' is a term that represents people who like to stay at home rather than taking adventures. Consequently, many people have been experiencing the 'Corona Blue,' which means depression or lethargy caused by self-isolation/social distancing(www.donga.com). People are not able to participate in any outdoor activities and have to stay at home on the Internet. Spending most of their time alone at home makes people feel more isolated and alone, therefore causing the Corona Blue. Accordingly, our curiosity about the changes in students' academic performance grew.

**Fig. 4.** Overall academic performance after the implementation of online classes



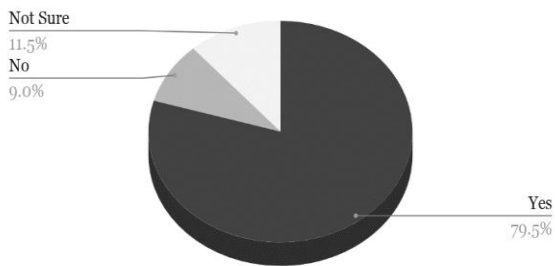
For the question above (Fig. 4), 70.5% of the respondents answered that their performance did not improve, while 29.5% answered that it did. The increased use of the Internet, changes in lifestyle, and the implementation of online classes are significant factors that have affected their academics. As we want to know the impact of COVID-19 on students' academic performance, we are going to find out the main factor and see if it is related.

The first prediction that came to mind was that problems such as Internet addiction would be related to students' academic performance due to their increased use of the Internet. 79.5% of respondents replied that their internet use increased due to their lives in quarantine (Fig. 5). From this data, we can infer that the increased Internet use may have been the main factor affecting students' lives, which can also affect their education.

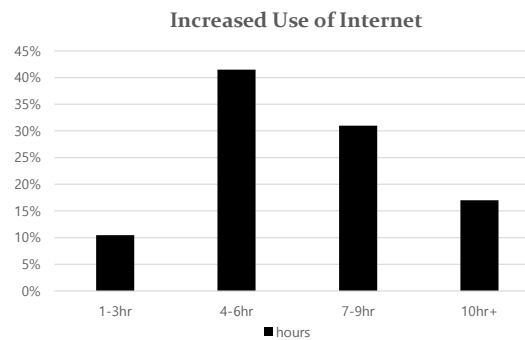
Through the bar graph (Fig. 6), we can explain the increased Internet usage time. The X-axis shows how many hours the respondents spend in a day using the Internet. The Y-axis is expressed through the percentage of the number of participants. 41.5% of the respondents answered that they use 4-6 hours on the internet in a day, which had the biggest part of the categories. The second place that charged a big part of the response was 7-9 hours. 17% responded that they use the Internet for more than 10 hours a day which is higher than the people who chose 1-3 hours, which is 10.5%.

**Fig 5.** Use of Internet since the pandemic

**Has the Use of the Internet Grown Since the Pandemic?**



**Fig. 6.** Use of Internet



Now, we had to see if there is a

connection between Internet use and their lives (especially academic). To see if the increased use of the Internet is directly related to the academic performance of students, we conducted a Chi-square test (Table 3,4). We tried to find out if we can prove that the increased use of the Internet is the main reason for the decrease in their academic performance.

We set 2-row variables with the number of students answering whether their overall academic performance improved during COVID-19 (1st row: Improved, 2nd: Not Improved). We set 4 column variables with the number of students for each column of the increased use of the internet (1st column: 1-3hrs, 2nd: 4-6hrs, 3rd: 7-9hrs, 4th: 10hrs) during COVID-19. (Table. 2)

**Table 2.** Observed Frequencies

	1-3 hrs	4-6 hrs	7-9 hrs	More than 10 hrs	Row Total
Improved	7	25	17	10	59
Not Improved	14	58	45	24	141
Column Total	21	83	62	34	200

**Table 3.** Expected Frequencies

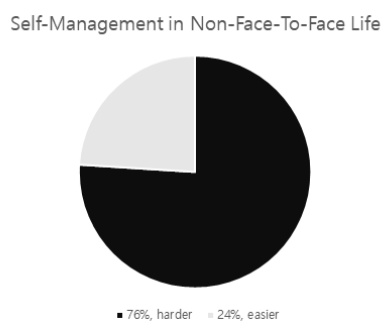
	1-3 hrs	4-6 hrs	7-9 hrs	More than 10 hrs	Row Total
Improved	6.195	24.485	18.29	10.03	59
Not Improved	14.805	58.515	43.71	23.97	141
Column Total	21	83	62	34	200

**Table 4.** (O – E)/E

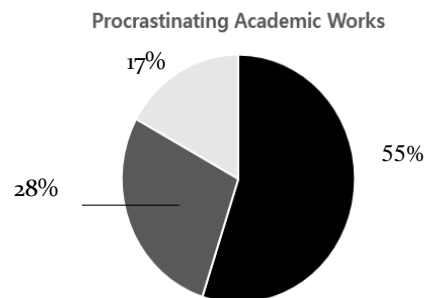
	1-3 hours	4-6 hours	7-9 hours	More than 10 hrs
Improved	0.104605	0.010832	0.090984	0.00009
Not Improved	0.043771	0.004533	0.038071	0.000038

When adding up all the numbers above, we obtain the value for chi-square:  $\chi^2 = 0.292924$ . The number of degrees of freedom to use is the rows in the table minus 1, multiplied by the number of columns minus 1. This is  $(2-1) \times (4-1) = 1 \times 3 = 3$  degrees of freedom. Result shows that 0.292924, is much lower than the critical value of 7.81 (for 3 degrees of freedom and a significance level of 0.05). Therefore, it was clear that the increased Internet-use is not directly related to academic performance. In other words, Internet-use does not influence students’ academic performance in this COVID situation. Considering another possible factor affecting students’ lives, we analyzed how well they manage themselves during the Corona crisis.

**Fig. 7.** Self-management in Non-Face to Face life



**Fig 8.** Procrastinating Academic Works



We asked the respondents about how they got affected in self-management through non-face-to-face life. More than half of the respondents, 76% of them answered that their self-management is harder in non-face-to-face life while 24% replied that it was easier (Fig. 7). According to the data above, we found that beyond the Internet, many other factors are affecting student lives since there may be other possibilities that contribute to it.

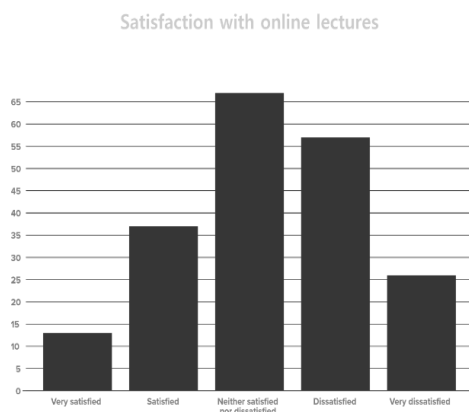


Our final section of the questionnaire tried to investigate the academic factors that may affect academic performance.

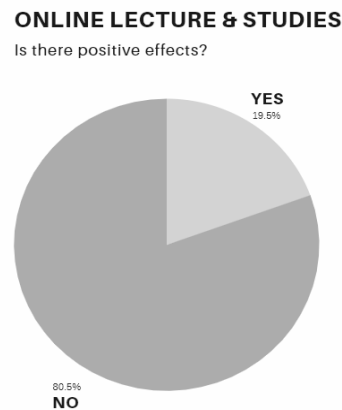
Based on above data analysis we get to know other factors influence students' daily lives, other than the increased use of the Internet. Connecting this pie chart to the previous data, the data above represents the question asked to the students about how their academic performance has been affected during their non-face-to-face lives. Looking at the chart, 55%, which is more than half of the total respondents, answered that they procrastinate more compared to the previous face-to-face life. 28% of the respondents said no, while 17% of the students were not sure (Fig.8). Since procrastinating is a part of 'self-management', we can say that procrastinating is one of the factors that affect students' academic performances.

While we were analyzing, we also wondered about the satisfaction of online classes in the students' perspective.

**Fig. 9.** Satisfaction with online lectures



**Fig. 10.** Online lecture and Studies



Compared to face-to-face lectures, how satisfied students are with online lectures are shown above. The distribution in the graph is skewed left. It means that the rates of satisfaction are more distributed on the negative scale in this graph (Fig. 9). To be more specific, as the mean of the rates of satisfaction is placed left of the median, the median is located to the right, indicating there are more negative values. Through this, we can realize that there are more responses to dissatisfaction. To see if there is a relationship between online class satisfaction and academic performance in students' consideration, we conducted another Chi-square test.

We set 2-row variables with the number of students answering whether their overall academic performance improved during COVID-19 (1st: Improved, 2nd: Not Improved) (Table 5). We set 2 column variables with the number of students answering whether online lectures give positive effects (1st: Positive, 2nd: Negative) (Table 6)

**Table 5.** Observed Frequencies

	Positive	Negative	Row Total
Improved	26	33	59
Not Improved	13	128	141

Column Total	39	161	200
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**Table 6.** Expected Frequencies

	Positive	Negative	Row Total
Improved	11.505	47.495	59
Not Improved	27.495	113.505	141
Column Total	39	161	200

**Table 7.**  $(O - E)/E$ 

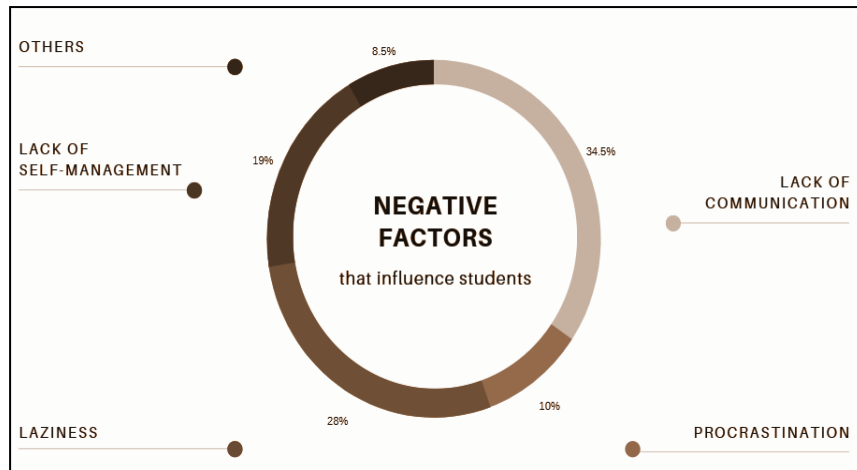
	Positive	Negative
Improved	18.2621	4.42373
Not Improved	7.64157	1.85106

As we add up all the above numbers, we obtain the value for chi-square:  $\chi^2 = 32.1785$ . The number of degrees of freedom to use is the rows in the table minus 1, multiplied by the number of columns minus 1. This is  $(2-1) \times (2-1) = 1 \times 1 = 1$  degree of freedom. We find that our answer, 32.1785, is larger than the critical value of 3.84 (for 1 degree of freedom and a significance level of 0.05). Therefore, our analyzed data clearly indicate that satisfaction and academic performance are related to students. Therefore, we can focus on how their satisfaction is affected. In addition to the satisfaction survey, the students answered that online classes do not have a positive effect on them as it has in face-to-face lecture.

This survey was conducted to find out whether students think online classes have a positive effect on their studies. Among 200 students, 80.5% of students replied that it does not leave positive effects as only 19.5% replied it does. As a result, we can assume that online lectures, implemented due to COVID-19, influence students to experience inconvenience in studies.

In this regard, we want to find out what negative factors mostly affect their academic satisfaction.

**Figure 11.** Negative factors that influence students



Concerning the previous data, we further carried out another survey to figure out what kind of factors negatively influence students. From this data, we concluded that the students face several difficulties that lower the quality of studies and life. Lack of communication ranked number one factor with 34.5%, in which students had difficulties interacting with classmates and professors due to an intact environment (Fig. 11). Laziness, typically referring to inappropriate class attitude, took 28%, followed by lack of self-management with 19% and procrastination with 10%. Other factors included a decrease in lecture quality and an increase in cheating. Through these analyses, we have confirmed that students have changed their academic performance around problems related to the quality of their classes.

### Discussion

This study was conducted to explore the in-depth effects of the pandemic on Korean university students, specifically their academic habits and performances. The goal was to find out the impact of a new, unfamiliar, and confusing environment on their studies. A study found that Korean students are more addicted to smartphones than Australian students, and their grades are also affected. As a result, they were able to confirm that smartphone use is related to academic performance (Winskel, et al. 2019). As Internet development continues to increase in Korea, the use of electronic devices by students is also increasing. This environment provides a factor that makes it easier for Korean students to fall into Internet addiction and affect their studies.

Even in Korea, where there are many uses of digital devices in education, online classes had limitations. These results may have been derived because neither student nor professor was trained to interact in a sudden remote educational environment. In addition, the absence of solid academic standards in unexpectedly prolonged online education has led to a variety of operations among schools, further exacerbating the educational divide (world Economic forum 2020). Although the increased use of the Internet is one of the factors, the survey results showed that the rates of satisfaction through the quality aspects generated by online classes played a bigger role in the academic performance of Korean students. Adaptation to life through online lectures has changed their lifestyles and consequently affected their academic performance. The main reason found by this study was that they have difficulty communicating with professors and classmates who can exchange academic knowledge. Also, they have been given more means of freedom than they were in school. Another reason for this is because students are not supervised and do not have the motivation to finish tasks quickly. Instead, they are not able to solely focus on class and have the freedom to do whatever they want such as lying down.

Another factor includes the lack of self-management, especially by psychological effects. For Korean college students, the use of the Internet has increased a lot since the beginning of the pandemic, and in some situations, addiction to online social networks can be the result of depression, bullying, and anxiety, which negatively affects self- Gómez-Galán, et al, (2020). There have also been many changes in their lives as they have stayed at home longer than they expected to socially distance themselves. This consequently affected their academic responsibilities. For example, it has been revealed that most students put off their assignments more often than when they took offline classes. Korean students are well aware that online classes have made them lazier and believe that they have harmed their studies. Contrary to expectations of the importance of Internet addiction to students' grades, the survey proved that it was not the biggest contributor.

### Conclusion

The global spread of COVID-19 has heavily impacted people's lives and significantly changed their daily routines. As the pandemic becomes more severe, people are getting more anxious, and they spend most of their time at home, on the Internet. Specifically, students are not able to study well as they used to before the pandemic.

The study found that Korean students showed poor academic performance due to lack of exchange and lack of self-management in online classes as they are putting off doing their assignments and listening to lectures. It would be similar for other students as well as Koreans. Due to the pandemic, the respondent's routine has changed by grounding themselves more than usual, and it seriously undermined the quality of their lives. Most importantly, this paper confirms that poor academic quality, such as poor interaction with professors, can significantly impact on their academic performance.

Like many other papers, this paper also has number of limitations. One of the limitations was collected data was taken from few universities, hence it would not be wise to generalize the result of this study. Besides this, the collected sample is comparatively low, as we could not managed to collected data in person due to Covid-19 situation. Bigger sample may give us more comprehensive understand about the situation.

**Conflicts of Interest:** The authors declare no conflict of interest.

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## the impact of covid-19 on the academic performance of college students in south korea

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