

# Development of Distance Learning in the Context of Covid-19

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## Abstract

According to a UNESCO report, the main factor in the disruption of the education system in the 21st century was the quarantine measures of the COVID-19 pandemic, which directly affected the education of more than 220 million students in the world (UNESCO, 2021). Thus, the purpose of the study is to assess the level of education of the graduates of higher education in Great Britain from May - November 2021 during quarantine measures. The achievement of the set goal was implemented through a survey of 1157 students from various higher education institutions in Great Britain, which was conducted in May and November 2021. This made it possible to identify certain regularities and trends in the adaptation of the English system of higher education to new conditions of the study. Thus, self-study and distance learning under the supervision of teachers became the determining method of education, which in percentage terms reached 55%, and at the same time, the level of group work in studying previously presented lecture material decreased by 36% (from 76% to 40%) due to technical difficulties and physical stay students in different parts of the country. However, the overwhelming majority of students remained motivated to study and showed adaptation to the new online educational environment. Overall, the study highlights the importance of developing and supporting distance learning in the future, which can become an additional tool to ensure access to education worldwide.

**Keywords:** COVID-19, coronavirus pandemic, distance education, online learning, higher education, students' mental health, HEIs, UK

## 1. Introduction

Modern education has undergone drastic changes due to the pandemic. Such changes led to the rapid development and practical implementation of digital educational models of learning, which are based on the use of appropriate information and communication platforms. Despite the problems of the institutional and technological nature of higher educational institutions, the digitalization of education took place quite massively and rapidly. This was reflected in a significant increase in the share of online education. This aspect was noted by Armstrong et al. (2011), and Harasim (2000), indicating that the innovative component of educational processes increased by almost 50%, which made it possible to change educational processes in higher educational institutions in the countries of the world.

Separate problems regarding the education system and the functioning of universities in new conditions were addressed by Van Dinther et al. (2011) and Mishra et al. (2020). Their aspect of the study concerned the strategic vision of the development of new forms of education. The practical aspects of the introduction of new digital learning models

have not been studied enough. Therefore, the purpose of the study is to assess the level of education of the graduates of higher education in Great Britain from May - November 2021 during quarantine measures. Such a conducted study will allow a deeper and more comprehensive assessment of the transition of universities to new learning models and identify problems that have not yet been resolved.

## 2. Literature Review

The main basic and overview document regarding the process of transition of higher education institutions to new models of online education was presented in the UNESCO report (2021), which noted the significant and multifaceted impact of the pandemic on the state of higher education in the world. The report characterizes a comprehensive review of current problems that emerged during the onset of this crisis. Experts note the strengthening of technological readiness and the formation of digital experience and the need for educational institutions to support students and teachers in mitigating the negative consequences of the educational process. There is a need to establish cooperation with private businesses to support transformational systems of higher education through the development and provision and improvement of communication and information technologies and relevant digital platforms.

In line with the 2021 UNESCO report, authors Mouchantaf (2020), Irfan et al. (2020), Arora & Srinivasan (2020); Ramírez-Hurtado et al. (2021) during 2020-2021 explained the need to solve problems related to technological access to existing relevant technologies, emphasizing that universities should evaluate these opportunities from the standpoint of strategic priority and management decisions. The authors also noted the need to form and develop practical skills in working with digital technologies for both students and teachers.

The authors of Joaquin et al. (2020), Arshad et al. (2020), Blankenberger & Williams (2020), Leshchenko et al., (2021), Paudel (2021), Shahzad et al. (2021) also investigated technological aspects in the digital transition of education. In particular, they mark the priority of the institutional nature and information provision of higher institutions in the transformation of education. The authors also emphasize improving the level of computer literacy of teachers and students.

The above-mentioned technological problem was noted by Bilgic & Tuzun (2020) when conducting research in higher education institutions in Turkey. In particular, problems with the launch of digital platforms were noted, and special attention was paid to the lack of regulatory safeguards when transitioning to distance education. A study by Agormedah et al. (2020) focused on students' perception of distance education and online learning based on the UCC Moodle, Alison, and Google Classroom platforms. In general, the authors noted that students quickly and effectively switched to these platforms due to the intensive use of social networks. However, Diachenko et al. (2021) noted that student youth have a negative perception of online learning due to the lack of necessary training of the students themselves and a non-serious perception of educational materials in the digital dimension.

Rizun & Strzelecki (2020) noted that students' perception of distance learning is directly related to the level of development of students' self-sufficiency in the psychological and moral state. Therefore, the study confirmed the results of the study by Markova et al. (2017), who noted that the effectiveness of online learning is determined by the desire and perception of the students themselves. Iatsyshyn et al. (2019); Iatsyshyn et al. (2020) proved that the perception of online distance learning depends on the comprehensibility and ease of use of the corresponding digital platforms.

Motivational aspects of students' perception of online learning were investigated by Verawardina et al. (2020), Petronzi & Petronzi (2020), and Peloso et al. (2020), who notes the need for a direct interaction of the motivational mechanism with the perfection of online learning models. In other words, the more accessible and understandable the online platform is the more students' motivation to study increases.

## 3. Materials and Methods

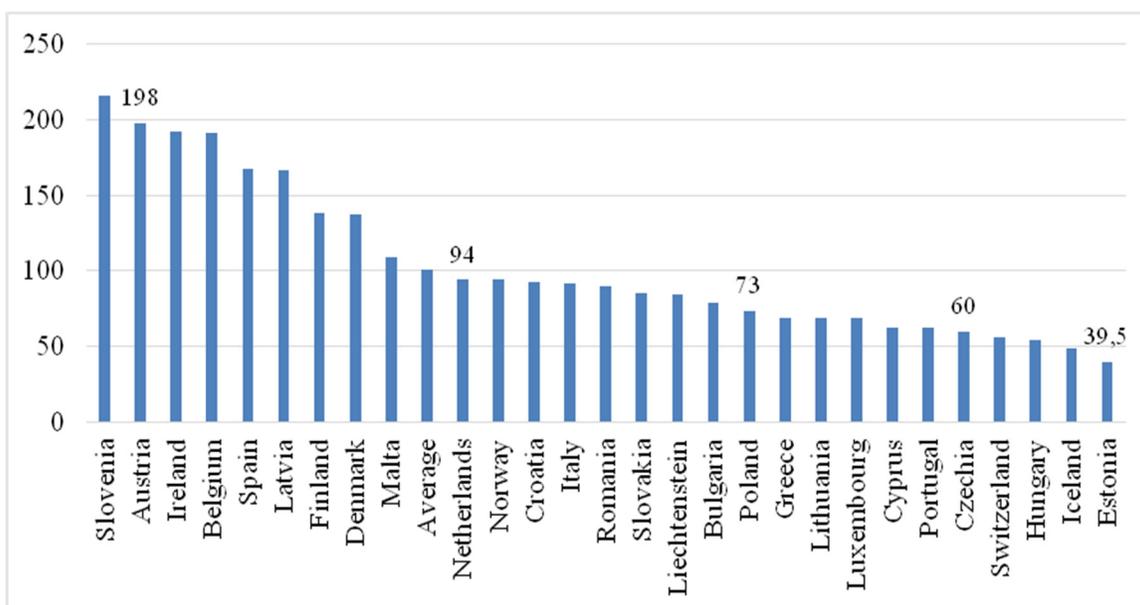
In this study, we used secondary data from the UK's Office for National Statistics (SCIS) COVID-19 Student Survey to analyze trends in the impact of the pandemic on student performance. Our main goal was to study the development of distance education with a focus on the educational situation and to compare the educational achievements of students in the 2020-2021 academic years. For this, we used a survey sample consisting of 1157 students from various higher education institutions in Great Britain. Data collection was carried out in two periods: from May 4 to 12 and from November 19 to 29, 2021. The survey covered various aspects of distance learning, including the availability of online learning, reasons why students do not continue their studies, and student acceptance of distance learning methods (Kadir et al., 2021).

#### 4. Results

The situation with spread of the coronavirus has stimulated higher education institutions around the world to implement synchronous and asynchronous learning methods. University management began to actively implement various learning technologies in these conditions of uncertainty and limitation. Classes of various types (lectures, seminars, group or individual work) have become flexible, inclusive, and personalized. At the same time, the acquisition of educational materials becomes synchronous or asynchronous, and teachers can quickly create high-quality electronic materials depending on the level of training of students.

The current development of distance education, due to the various restrictions imposed by governments, took place quite quickly and dynamically. All universities were forced to close for three months. This closure led to the rapid introduction of distance learning methods for students (Fig. 1).

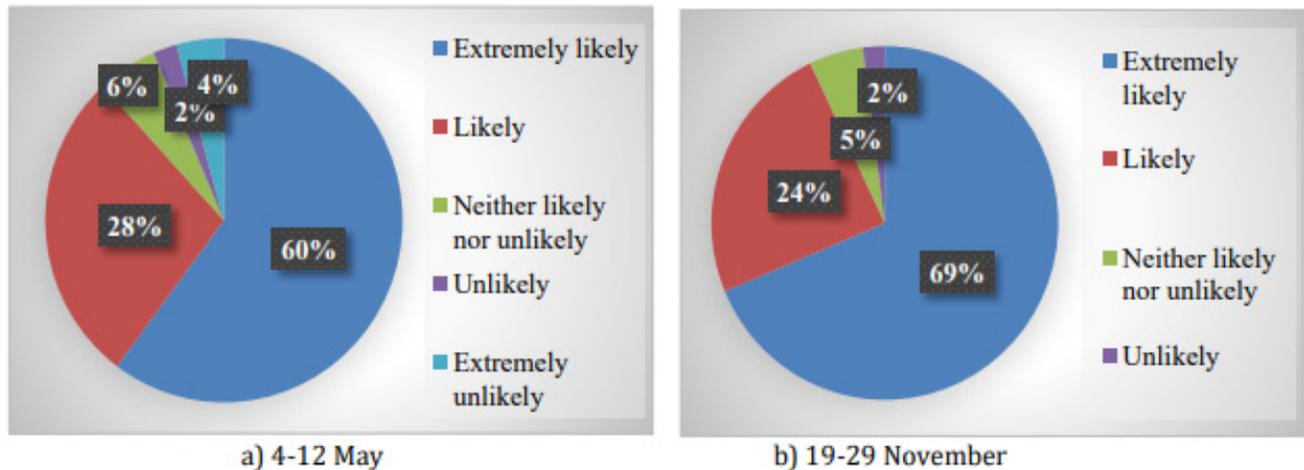
In the opinion of students (55%), during the pandemic, online self-learning or online learning under the control of a lecturer who acted as a speaker dominated education. This was the most common form of education. Auditory training rather than self-study or online training with a lecturer became the second form of distribution (33%). Only 7% of students preferred to study through classroom learning or in private offices or formal offices. For 5% of students, instruction in the classroom or laboratories of departments remained the priority form. A total of 12% percent of English students preferred the traditional form of education.



**Figure 1.** Termination of Studies by Higher Education Institutions in EU Countries during 2021

Source: European Centre for Disease Prevention and Control. Data on the country's response to COVID-19

During 2021, the distance education system underwent changes that were noted by students. If for May 2021 the priority form of education for students remained the model of online education with a teacher (77%), then in the fall the trend changed. More than half of the students (55%) indicated a preference for online education. As for the motivational priority, the vast majority of students (92%) indicated the need to continue their studies. At the same time, 5% were uncertain and only 2% were inclined not to continue their studies. Such results were marked by the fact that during the outbreak of the pandemic, financial incomes decreased and there was uncertainty in obtaining the nearest perspective for the future. This follows from the fact that at the beginning of the implementation of quarantine measures, the share of students who did not want to continue their studies was 8%. Accordingly, during that period, 88% of students expressed a desire to continue their studies. Exactly 40% of students indicated their reluctance to continue their studies due to noted financial difficulties (Figure 2).



**Figure 2.** The Impact of Pandemic Measures on the Continuation of Studies in 2021 by Students at Great British Universities

Source: UK Office for National Statistics. Student COVID-19 Insights Survey (SCIS)

In addition, another reason for the reluctance to continue education was found to be physical and mental illness (32%). Because of online education, 28% of students also did not want to continue their education. Other factors that predisposed students to the end of the educational process are:

- Restriction of access to social networks - 25%
- Unfulfilled expectations of students regarding university life – 26%
- Lack of support from the educational institution - 26%.

28% of students noted that they will graduate from university. 24% of students planned to graduate after the pandemic measures.

During the spread and increase of anti-pandemic measures, educational institutions changed the model of education (Table 1). There is a 4% decrease in initial online classes. At the same time, there was an increase in access to educational materials by 4% (from 62 to 66%). There was also a decrease in the frequency of conducting online classes (from 46% to 40%). In addition, group work decreased (from 29% to 18%) and distance exams decreased by 10%. The use of pre-recorded lectures decreased from 51% to 31%.

**Table 1.** Priority of Forms of Education in Universities in Great Britain, May-November 2021

Method	May- 4-12		November 19-29	
	Always of most of the time	No time	Always of most of the time	No time
Pre-set activities (for example forum posts) by a teacher with marking and feedback	34%		30%	70%
Making materials available for students to access through a website or email	62%		66%	34%
Online group working	29%		18%	82%
24-hour remote exams	26%		16%	84%
Pre-recorded lectures or other content	51%		31%	69%
Scheduled live online lessons or lecture	76%		40%	60%

Source: Office of National Statistic. COVID-19 Insights Survey (SCIS)

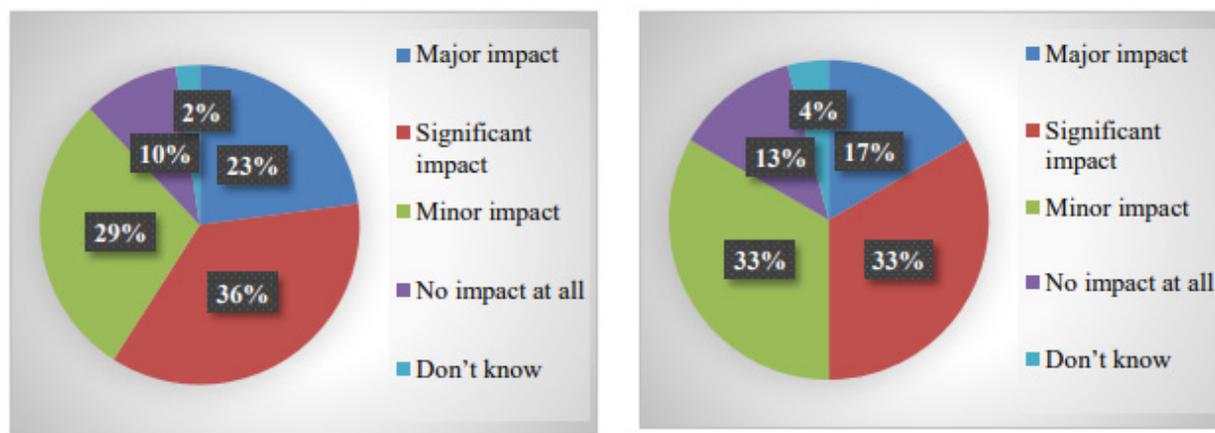
Such changes in the education system are explained by the action of the following factors:

1. Expanded use and implementation of educational information and communication technologies and relevant resources, which ensured high flexibility and allowed adjustment of the educational process.

2. The communication system, which was formed in a new way in the "student" - "teacher" relationship, ensured an almost instantaneous combination and conduct of a lively dialogue in the form of consultations, explanations, conversations, and instructions.

3. Reorientation of priorities both among students and among teachers, since traditional approaches in education became impossible and unacceptable, and new principles and approaches in educational relationships were formed, which changed the traditional routine and affected the daily life of teachers and students (the opportunity to work more at the computer and less physically moving to the university).

In general, the conducted survey of students made it possible to assess trends in the success of studies. If in May 59% of students declared a strong and significant impact of online learning on academic performance, then in November such an impact was noted by only 50% of students. A slight influence was noted by 29% in May, and in the fall semester, the number of students who identified a slight influence reached 33%. If in May, a tenth of the surveyed students noted that the new forms did not affect their academic performance, then in November, the number of students with a similar answer was 13% (Fig. 3).



**Figure 3.** The Influence of Online Education in Great Britain Universities on the Academic Success of Students in 2021

*Source: UK Office for National Statistics. Student COVID-19 Insights Survey (SCIS)*

Thus, the conducted surveys made it possible to assess the dynamics of changes in educational process models during 2021. At the same time, the transition from online classes in unprepared conditions (lack of technical and informational support, lack of understanding and perception of changes in learning by both students and teachers) to online learning based on proven methods, when students realized the role and advantages of self-organization in this form of learning, is noted.

## 5. Discussion

The conducted survey was the first to assess changes in the system and model of education in UK universities until 2021. Previous studies were conducted in the context of the psychological aspect of the perception of new distance learning methods (McRoy et al., 2020). In addition, Peloso et al. (2020) assessed the moral and psychological state of students when the learning model was changed during the implementation of pandemic measures. The authors assessed the level of anxiety and psychological state of students at higher educational institutions. The authors noted that the students psychologically felt a state of excitement, but perceived the possibility of further education in further forms of education. However, the teachers also noted the problems related to the dissatisfaction of students with the form of online education. This dissatisfaction was due to concern about the acceptance and assimilation of educational material by students and the low level of professional training of teachers in conducting such classes. Our research supports this hypothesis and indicates that such non-acceptance decreases over time, on average by 9% per year. At the same time, 70% of students note the negative impact of the pandemic on the final result of education.

Cicha et al. (2021) and Halapiry et al. (2020) conducted research in Poland. The authors note that for Polish students, the transition to online education created comfort for students due to the lack of physical movement (arrival, and departure to educational institutions). However, in other aspects, namely: perception of new information technologies,

and lack of understanding of the ultimate usefulness and effectiveness of online education methods, students showed dissatisfaction and low self-efficacy. The same problem was singled out by Agormedah et al. (2020) when in their research they noted that students of higher education institutions had a low level of understanding and knowledge of existing online platforms for online learning. This formed a negative perception and became an obstacle to the implementation of distance education on the part of students. Therefore, Agormedah et al. provide conclusions that such factors caused a decrease in students' academic performance. Our findings have noted that the success rate has increased during the year, which indicates that students, teachers, and educational institutions have successfully mastered the new educational technologies.

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Peloso et al. (2020) investigated the technical problem of the transition of the education system in universities, it was noted that some universities could not actively implement the new model due to the lack of technical support. Our research proves that such technical problems were successfully solved by universities in 2021 and did not become an obstacle in the implementation of online education. At the same time, such problems did not affect the level of success of students' studies.

## 6. Conclusions

The COVID-19 pandemic has changed traditional approaches to the way of life of the population in almost all countries of the world. Such changes also occurred in the education system. The assessment of changes in technical education in Great Britain indicates that the study of students at university desks has decreased dramatically. Accordingly, the share of students who switched to the online education system increased from 14% to 55%. The desire of students to acquire modern knowledge remained a priority of English students even during the introduction of art activities. However, certain difficulties have been identified in such a new form of education. This mainly concerns the financial problems associated with the payment of education, because the incomes of the population have decreased sharply with the reduction of production and trade. Health problems became another problem for students, among which mental and physical problems stand out, which was noted by almost a third of the surveyed students. After a quick period of adaptation to government restrictions, the world process began to actively adapt and a combination of different learning models began with the constant increase in the availability of online materials. And this led to the fact that the volume of classical group classes was reduced by 36% (from 76% to 40%). Over time, students adapted to the new model quite quickly, which indicates a reduction in the impact on students' academic performance. In further research, it is advisable to focus on the level of influence of pandemic measures on the psychological state of students and teachers. The problem of changing the motivational nature of students in these conditions, both to the new model of learning and to success, remains relevant and not thoroughly studied. In our opinion, it is advisable to conduct further research to assess and analyze the impact of the pandemic on the mental health of students, in particular the relationship between the desire to continue studying and the level of success.

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