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# THE CHANGES IN JAPANESE UNIVERSITY EDUCATION AMID COVID-19 PANDEMIC: THE IMPLEMENTATION OF DISTANCE LEARNING

The COVID-19 pandemic made distance learning necessary for a much wider audience than before. As a result, educational institutions have been forced to develop or accelerate online learning in order to provide teachers and students with the most up-to-date technology as quickly as possible. Japan is a world leader in high-tech, but lag behind in the implementation and use of technology in university systems. Although the COVID-19 pandemic crisis has brought challenges and worries that teachers, students and their parents have never faced before, the current situation may offer Japanese universities a chance to advance in terms of ICT use, increase their e-learning readiness by improving infrastructure, capacity building of faculty and students, etc. The development of communication technology has a profound impact on the traditional system of Japanese education, With the worldwide emphasis on distance learning, it can be assumed that challenging times in Japanese education may also bring excellent opportunities, and this important educational model will continue to improve, becoming more effective and less complicated. The rapid shift to online teaching and the need to combine it with face-to-face teaching soon led to the search for a variety of practices, and with them, a variety of terminology. In Japanese universities, the combination of online and face-to-face teaching will expected to be the way forward for university education in the "post-coronary" era. In anticipation of this, it is worthwhile to put these terms in perspective and consider their characteristics, challenges and possibilities. The aim of this paper is to overview the changing nature of 'distance learning' in Japanese universities, as well as to describe 'hybrid' education, which combines face-to-face and online teaching. The study is descriptive in order to determine the specifics of the changing nature of 'distance learning' in Japanese universities. This article summarises the events that have occurred in university education as a result of the new coronavirus, citing documents from the Ministry of Education, Culture, Sports, Science and Technology (MEXT) and media reports. Next, it summarises 'hybrid' learning, which combines face-to-face and online teaching.

**Key words:** Japan, distance learning, e-learning, hybrid learning, COVID-19 pandemic.

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## COVID-19 пандемиясы кезіндегі Жапон университетіндегі білім берудегі өзгерістер: қашықтан оқытуды енгізу

COVID-19 пандемиясы қашықтан оқытуды бұрынғыдан әлдеқайда кең аудитория үшін маңызды етті. Нәтижесінде білім беру мекемелері мұғалімдер мен студенттерді ең заманауи технологиялармен тезірек қамтамасыз ету үшін онлайн оқытуды дамытуға немесе жеделдетуге мәжбүр болды. Жапония жоғары технологиялар бойынша әлемдік көшбасшы болып табылады, бірақ университет жүйесінде технологияны қабылдау және пайдалану бойынша артта қалды. COVID-19 дағдарысы мұғалімдерге, студенттерге және олардың ата-аналарына қиындықтар мен алаңдаушылық тудырғанымен, қазіргі жағдай жапон университеттеріне АКТ-ны пайдалану тұрғысынан алға жылжуға, инфрақұрылымды жақсарту арқылы электрондық оқытуға дайындығын арттыруға мүмкіндік беруі мүмкін. Коммуникациялық технологиялардың дамуы жапондық білім берудің дәстүрлі жүйесіне қатты әсер етеді. Қашықтан оқытуға дүниежүзілік назар аударылатынын ескере отырып, жапондық білім берудегі қиын кезеңдердің де тамаша мүмкіндіктер әкелетінін болжауға болады. Онлайн оқытуға жылдам ауысу және оны бетпе-бет оқытумен біріктіру қажеттілігі көп ұзамай әртүрлі тәжірибелерді және олармен бірге әртүрлі терминологияларды іздеуге әкелді. Жапон университеттерінде онлайн оқыту мен бетпе-бет оқытудың үйлесімі «посткоронарлық» дәуірде университеттік білім беру үшін маңызды болады деп күтілуде. Қашықтан оқытуға қатысты терминдердің сипаттамаларын, қиындықтарын және мүмкіндіктерін қарастырған жөн. Бұл мақаланың мақсаты жапон университеттеріндегі «қашықтан оқытудың» өзгерген сипатын қарастыру, сонымен қатар бетпе-бет және онлайн

 

оқытуды біріктіретін аралас оқытуды сипаттау. Жапон университеттеріндегі «қашықтан оқытудың» өзгеру сипатының ерекшеліктерін анықтау мақсатында зерттеу сипаттамалық сипатта болады. Бұл мақалада Білім, Мәдениет, спорт, ғылым және технология министрлігінің (MEXT) құжаттарына және БАҚ хабарламаларына сілтеме жасай отырып, жаңа коронавирустың нәтижесінде университеттік білім берудегі өзгерістер жинақталған. Бұл мақалада бетпе-бет және онлайн оқытуды біріктіретін «аралас» оқытуды қысқаша сипатталады.

**Түйін сөздер:** Жапония, қашықтан оқу, электронды оқу, аралас оқыту, COVID-19 пандемиясы.

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**Изменения в японском университетском образовании в условиях пандемии COVID-19: внедрение дистанционного обучения**

Пандемия COVID-19 сделала дистанционное обучение необходимым для гораздо более широкой аудитории, чем раньше. В результате образовательные учреждения были вынуждены развивать или ускорять онлайн-обучение, чтобы как можно быстрее обеспечить преподавателей и учащихся самыми современными технологиями. Япония является мировым лидером в области высоких технологий, но отстает во внедрении и использовании технологий в университетских системах. Хотя кризис, вызванный пандемией COVID-19, принес учителям, учащимся и их родителям проблемы и беспокойства, текущая ситуация может дать японским университетам шанс продвинуться вперед в плане использования ИКТ, повысить свою готовность к электронному обучению за счет улучшения инфраструктуры, наращивания потенциала преподавателей и студентов и т. д. Развитие коммуникационных технологий оказывает глубокое влияние на традиционную систему японского образования. Учитывая всемирный акцент на дистанционное обучение, можно предположить, что трудные времена в японском образовании также могут принести отличные возможности. , и эта важная образовательная модель будет продолжать совершенствоваться, становясь более эффективной. Быстрый переход к онлайн-обучению и необходимость совмещать его с очным обучением вскоре привели к поиску разнообразных практик, а вместе с ними и разнообразной терминологии. Ожидается, что в японских университетах сочетание онлайн-обучения и очного обучения станет шагом вперед для университетского образования в «посткоронарную» эпоху. В ожидании этого стоит рассмотреть эти термины в перспективе и рассмотреть их характеристики, проблемы и возможности. Целью данной статьи является обзор меняющегося характера «дистанционного обучения» в японских университетах, а также описание смешанного обучения, которое сочетает в себе очное и онлайн-обучение. Исследование носит описательный характер, чтобы определить специфику изменения характера «дистанционного обучения» в японских университетах. В этой статье обобщаются события, произошедшие в университетском образовании в результате нового коронавируса, со ссылкой на документы Министерства образования, культуры, спорта, науки и технологий (MEXT) и сообщения СМИ. Далее в нем кратко описывается «смешанное» обучение, которое сочетает в себе очное и онлайн-обучение.

**Ключевые слова:** Япония, дистанционное обучение, электронное обучение, смешанное обучение, пандемия COVID-19.

## Introduction

Many schools and universities in Japan have been forced to close or switch to remote learning formats due to the COVID-19 pandemic. The new reality has forced an acceleration of online learning and the adoption of new IT technologies. Some colleges and universities promptly cancelled on-campus classes and switched to online learning, while others struggled with the scale of the change as well as the limitations of the practical part of learning activities. While each segment of education faces its own challenges, it is the challenges of higher education that may ultimately lead to a revolution in education. On the one hand, the coronavirus' spread has already prompted changes in Japanese universities, such as the recognition of the importance of online learning. These changes themselves have already been a revolution for colleges and universities in Japan, where teaching is largely based on classroom lectures.

Many Japanese universities decided to postpone the start of spring semesters until the 6th or the end of May 2020. Some universities, finding themselves

unprepared to offer their courses online, began setting up learning management systems, strengthening their infrastructure, and training teachers during the closure period, while others, with more developed infrastructure and experience in online teaching, offered 'unscheduled' distance learning.

The COVID-19 pandemic made distance learning necessary for a much wider audience than before. As a result, educational institutions have been forced to develop or accelerate online education plans in order to provide teachers and students with the most up-to-date technology as quickly as possible.

Delaying the start of classes in educational institutions rather than moving lessons online has exposed weaknesses in Japan's education system. Japan is a world leader in high-tech, but lags behind in the implementation and use of technology in university systems, and teachers are generally not competent in the use of ICT. Although the COVID-19 pandemic crisis has brought challenges and worries that teachers, students, and their parents have never faced before, the current situation may offer Japanese universities a chance to advance in terms of ICT use, increase their e-learning readiness by improving infrastructure, capacity building of faculty and students, etc.

The development of communication technology has a profound impact on the traditional system of Japanese education, both in primary schools and in higher education institutions. Teachers play a crucial role in helping young people gain the necessary experience in using learning networks and accessing information available on the Internet, as well as in using the Internet to monitor student progress. With the worldwide emphasis on distance learning, it can be assumed that challenging times in Japanese education may also bring excellent opportunities, and this important educational model will continue to improve, becoming more effective and less complicated.

In the second semester of the 2020 academic year, 80% of higher education institutions planned to use face-to-face classes in addition to these "distance classes" (MEXT, 2020). The combination of face-to-face and online learning has been the subject of much research and practice in the context of how to combine internet-based learning, or 'e-learning', with face-to-face teaching, but this has mainly been referred to as 'blended learning'. On the other hand, the term 'hybrid' came into use in August 2020 when the Minister of Education, Culture, Sports, Science and Technology (MEXT) called for universities to 'hybridise online and face-to-face teaching' in the context of 'reintroducing face-to-face teaching,

The rapid shift to online teaching and the need to combine it with face-to-face teaching soon led to the search for a variety of practices, and with them, a variety of terminology. In Japanese universities, the combination of online and face-to-face teaching will expected to be the way forward for university education in the "post-coronary" era. In anticipation of this, it is worthwhile to put these terms in perspective and consider their characteristics, challenges and possibilities.

The aim of this paper is to overview the changing nature of 'distance learning' in Japanese universities, as well as to describe 'hybrid' education, which combines face-to-face and online teaching.

## Materials and Methods

The study is descriptive in order to determine the specifics of the changing nature of 'distance learning' in Japanese universities. The paper begins with an overview of the changing nature of 'distance learning' in Japanese universities. This article summarises the events that have occurred in university education as a result of the new coronavirus, citing documents from the Ministry of Education, Culture, Sports, Science and Technology (MEXT) and media reports. Next, it summarises 'hybrid' education, which combines face-to-face and online teaching. Then it discusses the challenges of combining face-to-face and online services in the future.

The article was prepared based on materials from Japanese official sources, data from the Ministry of Education, Culture, Sports, Science and Technology of Japan, scientific publications on the research topic.

## Results and Discussion

In order to prevent the spread of the new coronavirus infection (COVID-19), in the academic year 2020, distance learning was implemented on an unprecedented scale in Japanese universities. Distance learning itself is not an exceptional form of teaching under the coronavirus. In December 1997, the University Council of Japan proposed that distance learning be used to fulfill up to 30 of the 124 credits required for graduation. The Council also proposed that a correspondence graduate school system be established. In fiscal year (FY) 1998, these recommendations were implemented. Furthermore, the University Council proposed in its October 26 report,

"University in the Twenty-First Century and Future Innovation Strategy — Competing with Individual Characteristics," that up to 60 credits be exchanged between universities and another 60 be accredited from multimedia-based "distance classes."In FY 1999, this proposal was implemented. The University Council published a report titled "Higher Education Required in the Age of Globalization" in November 2000, recommending that courses using the Internet be accredited for up to 60 units of credit, that correspondence universities be allowed to offer complete courses (i.e. 124 units of credit) via the Internet, and that the Internet be used to support courses of study as well as develop new teaching materials. Following these recommendations, it was determined that up to 60 credits in attendance universities could be accredited through Internet learning, and that all 124 credits required for a bachelor's degree from a correspondence university could be earned through the Internet starting in FY 2001 (Sakamoto, ).

Although the term "distance learning" has been used consistently in policies and standards since its institutionalisation, the actual form of teaching has changed over this period in line with developments in the media. Initially, the term "distance learning" was used to refer to classes using videoconferencing systems, but with the development of the Internet, the image of "distance learning" has diversified to include e-learning and online classes.

The lack of demand of distance learning in Japan is evident from the fact that distance learning has not become very popular in universities since the system was introduced. However, the pandemic has changed this situation: as of 1 June 2020, of the 1009 universities, 908 (90.0%) offered distance learning, 600 (59.4%) of which offered only distance learning (MEXT, 2020a).

Starting in 2020, 'distance learning' is often referred to as 'online learning'. New web conferencing services, such as Zoom, differ from previous ones in that they allow instructors to 'teach' a large number of students in real time over the internet. This is why the term 'online learning' is used, on the basis that learning takes place online in the same way as in a classroom. Thus, the term 'distance learning' is now used interchangeably with online learning.

Tsai and Machado describe distance learning as a two-way process at a distance in which tutors not only provide learners with learning materials, but also fully engage with them, receiving feedback (Tsai and Machado,2002).Distance learning concept appeared in the late 1890s. in the shape of schools of the so-called correspondent learning, when students could get send study materials by mail and such the same way to correspond with the teacher, and is widely used lately. The development of new technologies from the late 1920s to the 1970s has given rise to many opportunities to improve distance learning in means of using radio and television. By the 1970s, the potential of computers in distance learning was beginning to be recognized. In the late twentieth and early twenty-first centuries, advanced distance education options emerged, including a combination of correspondence and online learning.

Online learning is considered as a learning process through various devices with Internet access. Students can learn and engage with professors and other students from anywhere (independent) in these environments (Singh V., Thurman A. ,2019). Online learning is generally recognized as a type of e-learning. Definitions of e-learning vary in the literature, and definitions vary somewhat from one researcher to another. The "e" in e-learning stands for "electronic" and implies the use of computers and networks. The most typical definitions use information and communication technologies (ICT). Aoki refers to this ICT-based teaching and learning as e-learning, and distinguishes it from teaching and learning that uses only information technology (IT) (Aoki,2012). Hayashi also uses the term ICT, and sees e-learning as "the use of ICT in teaching and learning to increase its efficiency and effectiveness" (Hayashi,2012).

When we look at the history of e-learning in university education, it seems that there are two different genealogies: one is that focuses on "lectures" that have been given in universities for a long time, and applies electronic means to their delivery; the other is the one that focuses on "teaching materials. The other is the application of electronic means to assist students to learn alone, mainly in the form of "teaching materials".

With the dramatic advancements in computer technology in the 1960s and 1970s, there was a growing trend toward the use of computers in education. Learners could follow the questions and instructions presented to them electronically, take tests to check their understanding of each item, move on to the next item if they answered correctly, and go back to the previous item if they answered incorrectly. At the time, such a computer-based learning system was known as computer assisted instruction (CAI).

With the rapid spread of personal computers in the late 1980s, "teaching materials" type e-learning

took the form of software running on personal computers, and dedicated hardware became obsolete. In addition, with the spread of the Internet, it has become a prerequisite for computers to have an Internet connection, and in recent years, e-learning materials have also been designed with an Internet connection as a prerequisite. Over time, electronic technology was incorporated in various ways, resulting in what is now known as e-learning. In other words, e-learning is a method, and the purpose of e-learning is to bring university education to those who cannot attend lectures, and to support autonomous and active learning, which is not possible in lectures. When discussing e-learning, it is necessary to bear in mind this relationship between the purpose of education and e-learning as a method.

The current state of e-learning in Japanese universities is regularly investigated by various organisations and institutions, but here we refer to a relatively recent survey conducted by the Council for the Promotion of ICT in Universities in cooperation with the Ministry of Education, Culture, Sports, Science and Technology (MEXT), entitled "Results of a Survey on the Use of ICT in Higher Education Institutions". In this survey, 795 universities in Japan were surveyed. In this survey, 516 out of 795 universities in Japan responded (response rate 64.9%). 49.8% of the universities answered "very important" and 45.9% answered "somewhat important" to the question of whether they consider ICT utilization to be important. The total of both is 95.7%, which indicates that the importance of ICT is very high. As for the ICT environment actually introduced, e-mail systems for faculty and students, syllabus publication, course registration systems, and student information systems have been introduced, but only about one-third of the universities have introduced lecture recording systems, and only about 10% have made lecture materials and videos available to the public or produced and provided e-textbooks. On the other hand, the number of students who use the system in their classes was only about 10%. On the other hand, as for the ICT tools used in the classroom, the use of PowerPoint slides is the highest, but the use of other ICT tools is only in the range of 10% to 30%. The survey also asked about the introduction of online classes (classes conducted via a network), and 37% of the universities answered that they had introduced such classes. However, only 1.5% of the universities reported that more than 25% of their courses were taught online (80% or more), indicating that many of the online courses are actually a combination of traditional face-to-face courses and online courses. Most of the universities that answered that they use ICT for education have introduced e-mail systems, syllabus publication, and course registration systems at a high rate. However, these are just computerized administrative tasks, which are not e-learning per se. On the other hand, the adoption rate of online classes is low and the percentage of transmitted content is not large, and the use of lecture recording systems, public access to lecture materials and videos, the creation and provision of e-textbooks, and e-portfolios were all low. It can be said that the adoption rate of e-learning in Japanese universities was very low (Matsushita,2018).

During the pandemic crisis when the entire globe is sailing amid the storm, technology had played a pivotal role. Especially in the education system e-learning has been found to be a significant tool for effectively continuing the teaching-learning process during the lockdown

The sudden emergence of a new coronavirus infection (COVID-19), which has caused considerable global damage, has also had a major impact on the nature of university education in Japan. The rapid spread of online learning from April to July, and the resumption of face-to-face learning from September onwards, has led to a debate as to whether the pace is insufficient.

As a prerequisite for further discussion, we will summarise what happened at Japanese universities in the wake of the Corona disaster.

The Japanese government designated COVID-19 as a designated infectious disease on 7 February 2020, and public institutions, including universities, began to consider how to respond. This also led to the cancellation or reduction of graduation ceremonies at many universities in March and the postponement of the start of classes in April. On 24 March 2020, the Ministry of Education, Culture, Sports, Science and Technology (MEXT) issued a notice entitled "Regarding the Start of Classes at Universities in 2020", as many universities were at a loss as to how to start classes in the new academic year (MEXT,2020b). This policy, issued by the Ministry of Education, Culture, Sports, Science and Technology (MEXT), has led many universities to postpone the start of classes from the second half of April to after the May holidays, and to make a hasty decision to introduce online learning.

As the number of infected people increased rapidly from late March to early April, the government declared a state of emergency on 7 April under the Act on Special Measures against a New Type of Influenza. This allowed prefectural governors to re-

quest that people refrain from going out unnecessarily and that schools be closed. As it was impractical for students to go to campus in this situation, universities had no choice but to promote online learning. Many universities started their academic schedules on 7 May 2020, after the Golden Week holidays, and started online learning by trial and error. In June and July, many classes were held online at universities. This was an unprecedented change in the history of Japanese universities, but it was also an exceptional measure in the particular circumstances of the Corona disaster. At the beginning of June, the Ministry stated that hybrid learning, combining face-to-face and online learning, should be considered, and that the know-how of online learning, which had been used as an exception, should be used for this purpose.

On 17 July 2020, at the end of the summer term, the Ministry of Education, Culture, Sports, Science and Technology (MEXT) released the results of a survey on the status of teaching at universities and other institutions in light of the new coronavirus infection, as of 1 July. The survey revealed that classes were held at all 86 national universities, 102 public universities, 824 private universities and 57 technical colleges (1069 schools in total), and that the most common method was a combination of face-to-face and distance learning (60.1%), with 23.8% using distance learning only and 16.2% using face-to-face only. On 15 September, a report was published on the "Survey on the Implementation Policies of Second Semester Classes at Universities and Other Institutions". The survey, conducted between 25 August and 11 September at 86 national universities, 102 public universities, 815 private universities and 57 technical colleges (a total of 1,060 universities), found that almost all universities will offer face-to-face classes, and that 80.1% (849 universities) plan to combine face-to-face and distance learning. In addition, 56.5% of the universities that use a combination of face-to-face and interview said that they plan to use face-to-face classes in more than half of their classes.(Yamauchi,2021).

Currently, a popular trend in most institutions is the use of Learning Management System (LMS) to either supplement or augment traditional face-to-face sessions outside the classroom and this reflects the blended mode of learning where instructors provide access to their developed learning materials (either video, audio, interactive manual, portable document formats, etc.) and share them digitally with students. The blended learning mode seems to have an advantage due to the fact that it complements both the offline (face-to-face) and online learning modes by eradicating their weaknesses.

Garrison and Kanuka (2004) defined blended learning as “the thoughtful integration of classroom face to face learning experiences with online learning experiences”. Subsequently, Graham (2006) expanded the definition of blended learning to be “blended learning systems combine face-to-face instruction with computer-mediated instruction”. Blended learning appears to be more popular than ever before. It appears to have become a common phrase to describe modern education that aims to benefit from online technologies. For example, the term "blended learning" is used to describe the use of learning management systems as a supplement to campus education and the integration of digital technology into K-12 classrooms (Hrastinski,2019).

In the first semester of the 2020 academic year, when universities decided to go fully online, it was not for the sake of educational effectiveness. There is now a need to combine online and face-to-face teaching, i.e. to hybridise teaching, as a way of delivering courses under the two conditions of "avoiding densification" and "re-opening face-to-face teaching", which are required in a different context to teaching effectiveness. In the university classroom, it is therefore necessary to combine the two in such a way as to increase the educational effect as much as possible. In doing so, it is important to think not only about the combination in the classroom, but also about the combination in the university curriculum.

A combination of face-to-face and online classes in a single course (e.g. 15 classes) is referred to as a hybrid course. HyFlex is a term coined from the words "Hybrid-Flexible" and is defined by San Francisco State University as "a HyFlex course is one in which students can choose to participate in the course either face-to-face or online in a synchronous or asynchronous manner" (Taguchi, 2020). Hybrid flexible, or HyFlex, is a multimodal approach allows the student to participate in the face-to-face, synchronous, or asynchronous modes all at the same time. HyFlex is a solution for both lower enrollments and other institutional requirements as well as a novel approach to space utilization to assist students who are learning at a distance (.

Hyflex courses, in which face-to-face courses are delivered online at the same time, have become commonplace at many universities in Japan under the Corona disaster. The reason for this is that even if face-to-face classes are resumed, each student has a different tolerance for the risk of infection and his

or her own situation, and it is difficult to impose only face-to-face classes. High-flex courses have the advantage that they can be easily converted to full online courses and that students can choose between face-to-face and online courses. In addition to the hardware of setting up cameras and microphones, there is also a need to improve the teaching techniques and to deploy TAs to deal with both online and face-to-face students. The more interaction there is between teachers and students, and between students, the more problems there are to be solved. A blended course is one in which the students are not "divided", but where the course is divided into face-to-face and online sessions.

The cost of face-to-face teaching during the pandemic is high, as the risk involved in setting up a classroom environment. Therefore, it is possible to combine face-to-face and online classes in a course, limiting face-to-face classes to those classes where face-to-face classes are effective, and using online classes for classes where online classes are more effective. A combination of face-to-face and online courses could be considered.

According to Japanese researchers, the provision of e-learning in Japanese universities has been based on the implementation of blended learning, which combines face-to-face courses with e-learning to provide high quality courses, so "maintaining the same quality of education as face-to-face courses" has not been a major issue. However, the Corona disaster has led to the spread of "distance learning", in which lessons that cannot be given face-to-face are given online to learners in remote areas. In the future, it will be necessary to improve the quality of both real-time and on-demand online classes. It is important that the curriculum and courses include opportunities for students to produce output and to keep them motivated. On the other hand, the quality of face-to-face teaching must also be improved to satisfy students. Rather than choosing between online and face-to-face teaching, there is a strong need to improve the quality of both online and face-to-face teaching, and to combine face-to-face opportunities in formal and semi-formal courses. This will mean improving the quality of university education.

## Conclusion

Faced with a major crisis in the wake of the coronavirus outbreak, Japanese universities have been able to maintain their educational functions by introducing a wide range of distance learning courses. In contrast to the lack of clarity in the government's response policy, it can be said that individual universities and university faculty members demonstrated their potential for response and resilience. On the other hand, there is still no clear direction as to how university teaching should be conducted in the future. Moreover, even if the corona scourge has abated, there is always the risk that it will flare up again, and there is a need to prepare for this in the future. The most important question, however, is whether university education after the Corona disaster should simply be a return to the pre-Corona period or something different and new.

In the first semester of the 2020 academic year, Japanese universities offered fully online courses on an unprecedented scale and made rapid progress in the use of ICT, something that had not been done before. In the latter part of that period, encouraged by the desire of university students for campus life, there was a demand for the resumption of face-to-face teaching. As a result, universities are now required to offer a hybrid of online and face-to-face classes in order to resume face-to-face teaching. Thus, it is expected that the universities move from a phase where online classes were forced, and where a combination of face-to-face and online classes was required, to a phase where a combination of face-to-face and online classes will be used to achieve educational effects.

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