

## The need for detailed study of course credit earned and the comprehension of material by college students as a result of major changes in university course formats due to COVID-19 and actions based on those findings

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As of May 15, 2021, over a year has passed since the coronavirus disease 2019 (COVID-19) pandemic struck worldwide. As of this point, about 162 million people have been infected and about 3.4 million people have died worldwide [1]. People in many countries around the world have experienced hardships in the intervening year, and a study has cited the plight of college students [2]. In addition, we have described the experience of conducting online lectures for students abroad, and we have also suggested advantages of that format and areas for improvement [3]. A major change due to COVID-19 is that many universities around the world have quickly shifted to conducting classes online. Having looked at online classes, we noted the increasingly isolated nature of everyday life and the potential for mental distress to occur [4].

Online classes spread worldwide in 2020, and various modifications need to be made to online classes this year, i.e. 2021. Accordingly, that first year of online classes in 2020 needs to be reviewed. Online classes have increased sharply, and there may have been major changes in course credit earned by college students mainly attending face-to-face classes in 2019 and earlier. Moreover, various aspects of the comprehension of material in online classes and face--to-face classes also need to be compared. The advantages and disadvantages of online classes need to be identified based on those findings, and the necessity for specific improvements in online classes needs to be considered. These aspects need to be studied in Japan by focusing on reasonable accommodations for college students, which is a topic that has garnered attention over the past few years.

Instructional approaches and their positive and negative outcomes need to be examined in detail. Personnel in multiple relevant fields, and not just in a single field, need to work together to consolidate those findings. When necessary, approaches that are internationally applicable also need to be devised.

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## REFERENCES

- NHK. https://www3.nhk.or.jp/news/special/coronavirus/world-data/ (cited 2021 May 15).
- Inoue K, Takeshita H, Ohira Y. The current effects of the spread of COVID-19 in learning environments involving Japanese college students: What is the state of those environments elsewhere in

the world? Int Marit Health. 2020; 71(2): 150, doi: 10.5603/ IMH.2020.0027, indexed in Pubmed: 32604461.

- Inoue K, Chaizhunusova N, Seksenbayev N, et al. The realities of a new era featuring truly international lectures during the prolonged COVID-19 pandemic: international collaboration and advances in medical education. Int Marit Health. 2021; 72(1): 79, doi: 10.5603/ IMH.2021.0012, indexed in Pubmed: 33829478.
- Inoue K, Seksenbayev N, Moldagaliyev T, et al. Changes in university classes as COVID-19 continues and new findings regarding future university instruction methods: from the perspective of Japan and Semey, Republic of Kazakhstan. Int Marit Health. 2020; 71(4): 297, doi: 10.5603/IMH.2020.0051, indexed in Pubmed: 33394497.