Scientific Literacy Worksheets for Distance Learning in the Topic of Coronavirus 2019 (COVID-19)

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Abstract

This research goals to design and implement scientific literacy worksheets for distance learning in the topic of Coronavirus 2019 (COVID-19) to primary school students. The approach used is mixed method sequential exploratory model involving sample 35 primary students who take the distance learning due COVID-19. The research instrument used is design of scientific literacy worksheets based on the core stage of the scientific approach, which had been reviewed and judged by experts

Keywords : COVID-19; distance learning; scientific literacy; worksheets;

Introduction

Coronavirus disease 2019 (COVID-19) is an infectious disease caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). It is colloquially known as the coronavirus, constitute the subfamily Orthocoronavirinae, in the family Coronaviridae, order Nidovirales, and realm Riboviria (Groot, et al., 2011, p. 806). Coronaviruses are a group of related viruses that cause diseases in mammals and birds. In humans, coronaviruses cause respiratory tract infections that can range from mild to lethal. Mild illnesses include some cases of the common cold (which has other possible causes, predominantly rhinoviruses), while more lethal varieties can cause SARS, MERS, and COVID-19 (Ilmiyah, 2020). Symptoms in other species vary: in chickens, they cause an upper respiratory tract disease, while in cows and pigs they cause diarrhea. There are yet to be vaccines or antiviral drugs to prevent or treat human coronavirus infections.

The COVID-19 was first identified in December 2019 in Wuhan, the capital of China's Hubei province, and has since spread globally, resulting in the ongoing 2019–20 coronavirus pandemic (Hui, et al., 2020, p. 264). The 2019–20 coronavirus pandemic was reported to have spread to Indonesia on 2 March 2020, 4 days after Indonesian vice president presumptuously said that Indonesia avoid Coronavirus, because of the blessing of the *qunut*—he didn't said because *Allah's* authority (Hartini, 2020). COVID-19 spread to Indonesia when a dance instructor and her mother were infected from a Japanese national (Ratcliffe, 2020). By 9 April, the pandemic had spread to all provinces in Indonesia after Gorontalo confirmed its first case, with Jakarta, West Java, and East Java being the worst-hit provinces. So far, Indonesia has recorded 496 deaths, more than any other Southeast Asian country. Its fatality rate is also one of the highest in the world. Researchers suggest the main reason for the high rate is probably a lack of testing, resulting in many cases going undetected (Barker & Souisa, 2020).

The 2019–20 coronavirus pandemic has affected educational systems worldwide, leading to the widespread closures of schools, universities, colleges, and pondok pesantren. According to UNESCO monitoring, as of 17 April 2020, approximately 11.575.270.054 learners have been affected due to school closures in response to the pandemic, 191 countries have implemented nationwide closures and 5 have implemented local closures, impacting about 91.3% of the world's student population (UNESCO, 2020). On 16 March 2020, for example, Pondok Pesantren Ath-Thullab released a statement announcing the institution closures, impact not only students, teachers, and families, but have far-reaching economic and societal consequences. In response to school closures, UNESCO recommended the use of distance learning programmes and open educational applications and platforms that schools and teachers can use to reach learners remotely and limit the disruption of education (UNESCO, 2020). In response of the outbreak in Indonesia, multiple universities opted to cancel classes and instead would teach students online (Kemendikbud, 2020). It affected approximately 60.228.569 learners enrolled from pre-primary to upper-secondary education and 8.037.218 learners enrolled in tertiary education programmes (UNESCO, 2020).

Based on this situation, we designed student worksheets, to guide distance learning that is not much different from activities in school. As teachers, we have implemented scientific literacy learning since the beginning of the learning year (Setiawan, 2020). Therefore, it is hoped that distance learning will maintain the learning process of scientific literacy even in different ways and levels. To align these efforts with the situation, we designed the student worksheet based on scientific literacy indicators in the COVID-19 topic. Thus, the research question is, “How scientific literacy worksheets for distance learning in the topic of COVID-19?”

Method

The approach used is mixed method sequential exploratory model involving sample 35 primary students who take the distance learning due COVID-19 (Sugiyono, 2018; Creswell, 2014; Fraenkel, Wallen, & Hyun, 2012). The research instrument used is design of scientific literacy worksheets based on the core stage of the scientific approach, which had been reviewed and judged by experts.

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