COVID-19 Challenges: Health and Education in Chinese Society

Ranjie Hu
University of Edinburgh, Edinburgh, UK

Abstract
This article explores the newly-emerged interaction between education and health within the context of COVID-19 by examining relevant theoretical literature in these two fields and reviewing the difficulties encountered by China during the pandemic. COVID-19 has significantly impacted on the educational environment in China, with education further directly and indirectly affecting the development of health. This study is a qualitative discussion that introduces health and education theories to the specific context of COVID-19 in China, but follow-up quantitative demonstration is further required.

Keywords
Health; Education; COVID-19; China.

1. Introduction
The social environment of China is a key factor to consider when discussing the current relationship between education and health in the country. This article will explore and evaluate the mutual influence of education and health on China’s performance during the COVID-19 pandemic.

2. Definition
(In this article, all terms are defined in the context of narrating relationships between education and health.)

2.1. Health
The World Health Organization defines health as “a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity” (WHO, 1948, p.1). Two key aspects are incorporated within this definition of health: the social and biopsychosocial models. Similarly, Engel (1977) determines health as both a scientific concept and a social phenomenon. These definitions reach a consensus of health integrated into a social framework through physiological and psychological construction. Conceptualized as three factors – mental, physical, and social well-being (Sabates & Yardeni, 2020) – health and its value orientation is often summarized by three keywords: balance, harmony, and integration (Saylor, 2004).

In this article, health is defined as the spiritual and physical enjoyment of a unified and balanced life in society. As Fig.1 depicts, health exists in the balance between spirit and body within a social context. In “The Sustainable Development Goals Report 2020” (SDGR2020), the United Nations reported the significant impact caused by the global pandemic on social factors such as education. The content of the third SDGR2020 target, good health and well-being, focuses solely on COVID-19. COVID-19 is the most severe and unavoidable health topic discussed within the context of 2020. Therefore, this article will define health in relation to the prevention and cure of COVID-19.
2.2. Education and Schooling

Education and schooling remain cardinal topics within academic discussion, but they are terms which are often confused. Previously, socialization for individuals was a relatively singular process, with few institutions for pupils determined by sociologists as promoting knowledge and the total process of socialization, except for churches and schools. For the same reasons, educators also tried not to distinguish between schooling and education. So, we often confuse schooling and education. (Richmond, 2018)

Schooling is an integral part of formal education, but non-school or informal education is also influential (Sabates & Yardeni, 2020). Particularly within this information age, education cannot be defined within the limits of schooling but must, rather, be considered as the complete socialization process. Education is a broad concept, while schooling regards the formal teaching process within a school (Rohan, 2020). The broader concept of education is the central topic of discussion in this article, defined as purposeful social activities through which people are cultivated.

2.3. Relationships between Health and Education

In this article, health and education are defined within their 2020 social context, that is, a pandemic-struck world. This follows a particular line of academic enquiry, as demonstrated by the work of Smith, Salinas, and Baker (2012) who explored the multiple effects of education on disease, with their study focused specifically on HIV cases in Africa. They proposed that education is a “social vaccine”, improving cognition and changing material status.

In academia, human capital theory and neoliberalism are the primary social theories employed to discuss the relationship between education and health (Richmond, 2018, p.15). Human capitalists determine the objective of education as ensuring the supply of human capital for national development (Schultz, 1963). Typical models used to examine the relationship between health, education and social economy are Health Human Capital (HHC) and Education-enhanced Health Human Capital (EHHC), with the latter outlining two ways in which education affects health from a human capital perspective (Smith, Ikoma & Baker, 2016). Supported by significant empirical evidence, EHHC and HHC both propose that high-quality education directly promotes the extension of life expectancy and increases the industrial yield (Raghupathi & Raghupathi, 2020; Smith et al. 2015). Unlike HHC, however, EHHC proposes that education indirectly promotes industrial efficiency by promoting health, improving cognition, and enriching the life skills of workers (Smith, Ikoma & Baker, 2016).

Neoliberalist scholars perceive the relationship between health and education as a social “network” (Ball, 2012; Ball & Junemann, 2012), a term which describes the intersection between social sectors and their resource exchange to achieve goals. They further propose that
people communicate and voluntarily form organizations to connect in a social context, meaning the definition and empowerment of contact lies with the individual (Rhodes, 1997).

When analyzing the correlation between health and education, this article uses the aforementioned multilateral theories to discuss the role of education, the “social vaccine”, in the pandemic. When discussing this relationship, human capital and neoliberalist theories will be conceptualized into the following hypotheses:

Education directly promotes the formation of health knowledge.

Education indirectly promotes mental and physical health.

The environment of health problems changes the direction of education.

3. Backgrounds

3.1. COVID-19 Pandemic

Recently, WHO (2021) announced 81,475,053 COVID-19 cases have been confirmed worldwide since the start of the pandemic, meaning one percent of humans have been infected with the virus (According to the demographic data of World Bank (WB) in 2019, the total global population exceeded 7.6 billion in 2019. WB estimates that the global population will be around 7.8 billion in 2020. Therefore, the number of cases infected with COVID-19 accounted for almost 1% of the global population. Moreover, scientifically speaking, such estimates are somewhat conservative), the figure including 1,798,050 deaths as shown in Tab.1 (Until 4:11pm CET, 31 December 2020). Only fifteen countries or regions had no reported cases of COVID-19 (WHO, Nov. 2020). As the figures demonstrate, COVID-19 is a new and significant global health problem (WHO, 2021). Furthermore, SDGR2020 proposes that COVID-19 is not only a health problem but also a common social problem pertinent to multidisciplinary fields (UN, 2021).

Table 1. Extracts of Global Data from WHO’s Coronavirus Report and the Top Five Countries with Total Number of Cases (COVID-19) (Data last updated: 4:11pm CET, 31 December 2020)

<table>
<thead>
<tr>
<th>Name</th>
<th>WHO Region</th>
<th>Cases - cumulative total</th>
<th>Cases - cumulative total per 1 million population</th>
<th>Deaths - cumulative total</th>
<th>Deaths - cumulative total per 1 million population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Global</td>
<td>-</td>
<td>81475053</td>
<td>10437.08</td>
<td>1798050</td>
<td>230.3329</td>
</tr>
<tr>
<td>United States of America</td>
<td>Americas</td>
<td>19346790</td>
<td>58449.05</td>
<td>335789</td>
<td>1014.46</td>
</tr>
<tr>
<td>India</td>
<td>South-East Asia</td>
<td>10266674</td>
<td>7439.6</td>
<td>148738</td>
<td>107.78</td>
</tr>
<tr>
<td>Brazil</td>
<td>Americas</td>
<td>7563551</td>
<td>35583.23</td>
<td>192681</td>
<td>906.48</td>
</tr>
<tr>
<td>Russian Federation</td>
<td>Europe</td>
<td>3159297</td>
<td>21648.74</td>
<td>57019</td>
<td>390.72</td>
</tr>
<tr>
<td>France</td>
<td>Europe</td>
<td>2556708</td>
<td>39169.15</td>
<td>64004</td>
<td>980.55</td>
</tr>
</tbody>
</table>

3.2. Key Actors

From a global perspective, China has been selected as the national object for discussion in this article. Its specific prominence in this topic stems from its position as the first country in which the virus was detected and from which it spread globally, validated by a full series and large database. (Jin, 2020) Despite the high number of accumulated cases, the current number of cases in China is low, urging the questions of whether education has been a key factor in promoting the health and safety of the Chinese population and whether the pandemic has shifted the direction of education (WHO, 2020). The key participants in China’s response to the pandemic are WHO, UNESCO, China National Health Commission (NHC), Ministry of Education of the People’s Republic of China (MOE), and the Office of the MOE (OMOE).
4. Main Questions

This article responds to the following questions: what challenges have education and health in China faced during the COVID-19 pandemic, what has the response of China been to these challenges, and, in the Chinese context, has any new education and health correlation logic been determined?

5. Main Challenges

Despite its geographical magnitude and heterogeneity, China is an intricate and interconnecting economy (Andrea, 2020). Therefore, any slowdown or interruption of the production propelled by COVID-19 may have a severe adverse effect, stimulating a chain reaction and disconnection in the social-economic system, with the country thus facing multiple challenges (Liu, 2020).

5.1. Severe Health Situation

As Fig. 2 demonstrates, in early 2020 China experienced a significant surge in COVID-19 cases. Comparing Fig. 2 and 3 highlights the prominence of the virus in China prior to March 2020, after which the number of cases exceeded 2 million and has continued to surge (Tab.1, 2). In the early stages of 2020, China was confronted with a significant health challenge, with several cases of an unknown virus having appeared over a short period of time. Protecting physical health, confirming the pathology of the infectious diseases as quickly as possible, and controlling the growth became the primary challenges.

![Figure 2. Time Synchronization Table of New Cases in China](image_url)

![Figure 3. Time Synchronization Table of New Cases Globally (WHO, 2020)](image_url)
Aside from physical health challenges, issues regarding mental health began to surface and predominantly manifested in social panic and the internal guilt felt by those infected (Li et al., 2020).

5.2. Health Press on Education

5.2.1. Campus Management of Higher Education Institutions

With cases surging following the 2020 winter vacation and thus coinciding with the return of students to school, a massive conflict arose between education and health. The vast geographical territory of China and its significant populace propelled the health challenges, with many students moving between rural and urban locations, returning from their family residences to the cities in which their colleges and universities are typically located. How to protect students and civilians from COVID-19 is a strait problem. (UNESCO, 2021)

5.2.2. Schooling in a Health Crisis

The spread of the virus halted physical schooling activities (OMOE, 2020), with the Chinese higher education entrance examination postponed for the first time in history due to the public health issue (MOE, 2021). China was left facing the question of how to achieve normality in education during a significant health crisis.

5.3. Health-related Education

5.3.1. Raising Health Awareness in Citizens

Positivist research argues that education is an effective means of improving the awareness and knowledge of citizens regarding health and indirectly promoting healthy behaviors (Viner et al., 2017; Baker et al., 2011; Baker et al., 2017). The pandemic highlighted the vital role of health knowledge among citizens, with the population made directly aware of the necessity of wearing masks, disinfecting hands frequently, and maintaining social distance (Yang, 2020; UNESCO, 2021).

5.3.2. Proliferating Mental Health Problems

Empirical studies have highlighted the significant symptoms of anxiety experienced by medical staff in China during the pandemic (Cai, He & Han, 2020; Li et al., 2020), along with the increased sense of guilt and pressure experienced by patients (Wei & Li, 2020; Ma et al., 2020). Furthermore, public ignorance regarding health issues has caused unnecessary anxiety, discrimination, and other mental health problems (Wang et al., 2020).

6. Attempts

6.1. Tackling Social Health with Education

Influenced by the neoliberalist “network” theory, China directed the comprehensive interconnection of national health, social-economic, and educational systems (Andrea, 2020). Led by Premier Li, China established a central leadership group to coordinate NHC, MOE, and
OMOE arrangements (Xinhua News Agency, 2020), rather than ‘Only take a painful treatment of head when having a headache’ (Liu, 2020).

6.2. **Strict Management and Precise Control**

Human capital theory proposes that the direct educational countermeasures with which to confront health problems are strict management and precise control. MOE postponed in-person classes during the initial pandemic surge, while OMOE and NHC joined forces to share “big data”, establish pandemic models, and use education to resolve the public health issue of COVID-19 (NHC, 2020). All colleges and universities further issued closed-wall management. One university in Nanjing, for example, required students to complete forms regarding their health status and report online their daily temperature, enabling researchers to capture the scale of the issue accurately and thus prevent the further spread of COVID-19 and other viruses using digital “big data”. This technology is an innovative product of education (Dong, 2020).

Responding to society-wide mental health challenges, China’s strategy has been to send vulnerable groups into isolation wards to cope with the psychological and emotional fluctuations of those facing or in quarantine. For example, many psychological education and counseling experts were stationed at a centralized isolation point, HuoShenShan Hospital, on the day it was established. Furthermore, special personnel have been made responsible for arranging the diet of any suspected cases, who are placed in immediate quarantine, to enable their confidence to build through their defeat of the virus and thus ensure the strength of their mental and physical health (Wang et al., 2020).

The Chinese government have indirectly assisted with mental health issues provoked by the pandemic by instilling basic knowledge about the pathology of COVID-19 in its population through public education videos in an attempt to reduce discrimination against those who have recovered from the virus. Compulsory online lectures have been conducted in universities to teach students how to protect themselves from COVID-19 and treat the spread of the virus (Ding, et al. 2020).

6.3. **Innovative Education Methods**

The UNESCO Global Education Monitor (GEM) report (Chang & Satoko, 2021) determined that computers and telecommunications subsidies had been provided to students in China from low-income families, including parents and caregivers. In cooperation, UNESCO offered its services by providing support for building online exam systems in China.

As in many countries across the globe, the popularity of online education in China has risen dramatically as a result of COVID-19. Public education is carried out by the government through WeChat and other official web platforms. Survey data has revealed that the number of those benefiting from online health protection education in one month exceeded the total number of people taught during the SARS epidemic in 2003 (Tian et al., 2020). Furthermore, the application of “Internet+ Health” can reduce the negative emotions experienced by patients and improve their awareness of disease-related knowledge, improving nursing work satisfaction (Sun, Song & Li, 2020).

7. **COVID-19 Consequences**

7.1. **Social Context**

Despite maintaining the same proportion of public education expenditure, total education expenditure has increased in countries across the globe, recording a significant difference compared to pre-pandemic expenditure (OECD, 2020; Tang, 2020). From a human capitalist perspective, COVID-19 has slowed production and indirectly inhibits investment in education.
7.2. **Education and Health**

Education has assisted doctors and patients with mental and physical health issues caused by the pandemic (Wang, et al., 2020). As a health and social issue, COVID-19 has made a direct impact on the ways in which education is taught. Increased and innovative education methods have emerged online. In China, empirical research has revealed denial regarding the enhanced performance of online teaching in comparison to the quality of offline teaching (Zhang, 2020). However, the effects of teaching are not solely measured by test scores, and thus more research is required to elaborate this issue.

8. **Conclusions**

COVID-19 should not be seen only as a pandemic but also as a specific health and education issue in China, affecting the way in which these fields interconnect. The damaging effects of COVID-19 have been challenged by the social “network” plan instigated by the Chinese government. Through the EHHC model, education has directly impacted on society by introducing “big data” detection technology to alleviate doctor and patient anxiety, while further indirectly impacting on public understanding of health by comprehensively spreading cognitive awareness.

**References**


