Proceedings of VIAC2020 - COVID-19

VIRTUAL

July 30 - 31, 2020

VIRTUAL International Academic Conference on the Global Impact of the Coronavirus COVID-19 on Society

Global Impact of the Coronavirus COVID-19 on:
Economics, Business, Marketing, Politics, Security, Sport, Tourism, Culture, Globalization, Children and Youth, Education, Transport, Engineering and Technology, Health and Medicine, Information Technology and other

ISBN 978-80-88203-18-6

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Název:

"Proceedings of VIAC2020 - COVID-19", ISBN 978-80-88203-18-6

Červenec 2020 v Praze, *První vydání*

Vydavatel / Tvůrce CD / Nositel autorských práv:

Czech Institute of Academic Education z.s.

Adresa vydavatele:

Vodnická 309/20, 149 00 - Praha 4, Česká Republika

Email: info@conferences-scientific.cz

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Title:

"Proceedings of VIAC2020 - COVID-19", ISBN 978-80-88203-18-6

July 2020 in Prague, *1st edition*

Publisher / Creator of CD / Copyright holder:

Czech Institute of Academic Education z.s.

Address of Publisher:

Vodnicka 309/20, 149 00 - Prague 4, Czech Republic

Email: info@conferences-scientific.cz

Web: www.conferences-scientific.cz

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Impact of Coronavirus (Covid-19) on The Social Life

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Abstract.

The aim of this article is to present the impact of the Coronavirus (Covid–2019) on the social life in the world from the historical and technological perspective. This historical perspective is based on the outbreaks of plagues in the history of Europe and their aftermath. Whereas the twenty first century perspective deals with the situation we face today. We live in the Digital Age when computers and Artificial Intelligence help or / and replace people. Therefore, the impact of virus is different today than hundreds of years ago. This is because of the technological advancements and social development. The world educational systems and economies are under the strong influence of the pandemic situation. Therefore, this paper touches on problems regarding the education and economy in the global and local perspective. Moreover, a quantitative research was conducted to analyse the opinions of high school students on online teaching and its influence on their life. The research shall be further developed, and it is planned be conducted from February 2021. The main objective of this article is to give a brief look on some crucial information based on the analysed data by the authors and regarding social life changes.

Keywords: Covid-19, Pandemic, Social Changes, Virus, Industrial Crisis

INTRODUCTION

The unexpected outbreak of Corona Virus 2019

Coronavirus Disease (COVID-19) is described as the pandemic by the World Health Organisation. On the 21st of April there are 2 356 414 confirmed cases, 160 120 confirmed deaths and 213 countries infected according to the report of WHO. It is also called "once in a century pandemic" (Brown, 2020).

COVID-19 is also called the Wuhan Virus as it was identified in Wuhan, China in December 2019 (Miller, 2020). However, nobody believed it was so serious at the beginning. Moreover, the Chinese have a long tradition of fighting the viruses and epidemic diseases. For thousand of years they developed their natural medicine and the techniques and treatments to fight outbreaks of pandemics (US Presidential Documents, 2008, p. 1116). Dr Wu Lien-teh was the renowned Chinese doctor who stopped the Manchurian Plague which was the Pneumonic Pandemic in China in 1910-1911 (Yu-lin, 1995; Lei, 2014, p. 30). There are also resources that the Chinese medical experience in treatment of plague illnesses is dated eighty hundred years ago. The medical theory of six stages developed during the Han Dynasty by medical doctor Chang Chung-Ching (AD 142-220) and described in his *Shang Han Lun* work meaning The Treatment of Acute Disease Caused by Cold was one of the first clinical manuals (Tierra & Tierra, p. 150, 1998). Xing Xiaochen talks about 138 outbreaks of pandemics during the reign of the Ming and Qing Dynasties in the period of 542 years (Xiaochen, 1999). *The people of the area know historically as China had a rich and highly synthetic medical culture in antient times*. C*hina`s unification under the first emperors in the third century BCE created a mandate for a share understanding of human health and illness* (Byrne, 2012, p. 75). Today, the Chinese use herbs in two ways: to strengthen the organism by improving its energy status and to treat viral diseases (Williams, 2002, p. 336). Therefore, the outbreak of COVID-19 was treated very seriously in China, when the virulence and scale of the virus was realised and experienced. Whereas the European COVID-19 outbreak was different and presumably the historical perspective might not have been seriously taken at the very beginning (Spinage, 2003, p.45).

Plagues in History

The first plague in Europe in dated roughly 3500 – 3000 BC. The evidence of bacteria called Yersinia Pestis was discovered in the human remain excavated in a Swedish tomb in 2018. The death of this individual is correlated with the period of history called the Neolithic Decline. Yersinia pestis infects humans via the Oriental rats` flea. It causes a disease with three different outcomes: pneumonic, septicemic and bubonic plagues (Lewis, 1973, p.2).
The Plague of Justinian spread from Egypt of the Mediterranean Region and then North-western Europe between 541-750 AD. There were seventeen waves of this plague moving through Europe and Central Asia. *Any notion of the mortality involved in these epidemics is highly speculative*. According to the historical resources of Procopius and John of Ephesus, there were more than 10,000 people who died a day in the Justinian`s capital city, Constantinople in 541-544 A.D (Hays, 2005, p.23).
The Black Death is the most known plague in Europe which came from Central Asia. It killed 25 million people from 1347 to 1665 (Gottfried, 2010). The name of this pandemic comes from the black spots which appeared on the infected body. Most people died shortly after the symptoms appeared. *Bubonic plague was transmitted to humans by fleas on rats*. Interestingly, it could not be passed between the humans (Editors of Kingfisher, 2004, p. 178).
Second half of the 20th century and the advancement of hygiene and medicine drastically reduced the plagues. However, the Ebola disease was first time discovered in 1976. Since then, it had a few serious outbreaks in Africa. From 1976 to 2013 there were 24 outbreaks of this pandemic, causing 1,590 deaths. The biggest spread of this disease was from 2013 to 2016 in the West Africa causing 28,646 infections and the death toll reached 11,323 people. The significant role of China in fighting this disease is presented by Hongzhou Lu in her research paper. The author says: *As one of the active participants in the global fight against the 2014 outbreak of Ebola virus disease (EVD) in West Africa, China supplied many resources, including medical experts and scientists as well as medical supplies, to the affected countries. A member of the first contingent of Chinese public health experts who worked in Sierra Leone for 65 days* (Hongzhou, 2015). Before COVID-19 it was considered the most serious pandemic illness of modern times (Redac, 2020).

COIVD-19

SARS COV 2 called COVID-19 means Severe Acute Respiratory Syndrome Coronavirus 2 (Rutakirwa, 2020, p. 13). Eric Thomsen says about the virus the following: *A coronavirus is a type of virus which can cause illness in animals and people. Viruses break into cells inside their host and use them to reproduce itself and disrupt the body`s normal functions. Coronaviruses are named after the Latin word "corona", which means crown, because they are encased by a spiked shell which resembles a royal crown* (Thomsen, 2020, p. 129).
At the moment, is 09:54 Greenwich Time, 24th of April 2020. There are 2,709,483 confirmed cases of COVID-19 in the world. The death toll is 190.870 people. The number of cured people is 742,855 cases (internet source: NHS:WHO:GOV:UK). The virus paralysed the whole world including industry, trade, education and personal life of millions of people.
Today is 04th June 2020, time: 09:10 Greenwich Time. This is eleven days after the date we put the reported confirmed cases and the death toll of Covid-19. There are 6,366,788 confirmed cases and the death toll is 383, 262 (WHO, 2020). The growth of infected people is 3,657,305 in eleven days and the growth in the death toll is 192,392. It means that the growth numbers are higher than the numbers reported on the 24th of April 2020.

Changes in the social life

Covid-19 influences governments and people`s life. Everything changes and the governments have to impose rules to safe human lives. This situation can be understood as the limitation of freedom and many people criticize this, even if it protects their health. On the other hand, people expect the governments to intervene in people`s life and control the spread of the virus (Hightower, 2020). Many private hospitals, healthcare provides and even some medical factories come under the government control. This happens because the governments cannot allow themselves to become hostages of private medical sector (Krishnan, 2020, p. 22). Moreover, the governments stopped the prices to grow drastically high because of the humanitarian crisis. This situation rose some protests in the business world, but many people realized that their life is the most important and more valuable than earning money.
People who stayed in hospitals and recovered, come back home to discover that their life is totally changed. Some people may feel depressed because they realize that after leaving a hospital they must deal with new problems and sometimes they are alone. Most patients cannot return to their daily functions after being treated with the life support equipment. This especially refers to patients who had mechanical ventilators for a long time because of their health

struggling with Covid-19 as Dale Needham says, the professor of pulmonary and critical care medicine from John Hopkins University School of Medicine (Black , 2019, p: 117).
People start spending more time on internet. The online educational programmes, conferences, work, meetings, shops, religious celebrations became part of everyday life (Winkerson, 2020). People learned not to panic and help each other. Whereas the fear of being sick comes from *the fact that we know very little or almost nothing about it* and therefore the emphasis is put on educating the societies (Norton, 2020)

Challenges for the school

From the first days when the schools became closed because of the pandemics, they continued their work based on the internet communication. Most of them which had access to internet, could easily adjust to the new situation, because the online school registers, class topics, contact with students were in use before the pandemics. Teachers started running their classes online, providing students with guidance and homework. However, we have conducted a questionnaire in a group of 100 students from the first and second class of two high schools in Poland. The research was made online and students were assured of their anonymity. We asked them the following questions:

1. Do you prefer the online system of education or traditional schooling?
2. Can you explain your choice?
3. How do you feel about being isolated from your friends?
   I do not feel isolated because we can go cycling, but if we would not, I could feel depressed.
4. What makes the biggest difference between the online and traditional school programme?
5. What type of exams would you prefer in the future: online or traditional? Please support your view.

The most popular answers to the first question: Do you prefer the online system of education or traditional schooling? were the following
- *online is more friendly*
- *online is better*
- *online gives more freedom*
- *there is no stress from teachers*
- *online classes are more comfortable*

Over eighty per cent of students preferred online system of teaching.
The second question: Can you explain your choice?
we received the following answers:
- *It is more comfortable, and you have more time for everything, you can eat, drink and sleep longer.*
- *It is more convenient (interviewer: can you tell me more?) I can learn at my own pace, come back to the online material, whenever I need and write an email to a teacher. At school, the class is over, and we must go for the next class. Here the situation is different.*
- *There is no stress*
- *It gives more freedom*
- *I have more time to think about the problems*
- *I can check things online during the lessons*
- *I can play computer games / talk with friends when I am in the virtual class*

The presented answers were also discussed with the students and over 80 per cent of students preferred the online school.
The third question: How do you feel being isolated from your friends? Answers to this question slightly changed the proportions and 65 per cent of students said, that they do not feel alone because they play online games and contact friends on different media. Whereas the remaining 35 per cent were not happy with the situation and complained about lack of possibility to go out with friends and play different outdoor games like football and basketball.
The fourth question was: What makes the biggest difference between the online and traditional school programme?

The answers were the following:
- *The form of lesson makes the biggest difference because we cannot see each other. However, when we talk about learning there is no difference. The only difference is in the PE lessons because we cannot run or play group games.*
- *Teachers give us too much writing.*
- *Teachers take the online programme too seriously and give us too much homework.*

- We have to learn a lot, I spent many hours reading and doing exercises online.
- I love learning Tai Chi on our PE online lessons, we do not need to do these nonsense running round the football pitch.
- It is relaxing as long as teachers do not give us the written assignments which are much longer than when we are at school.
- We learn more through using different online games (interviewer: Do you mean educational games?) yes.
- Generally it is a very good and much better than the school class, because there is no stress.
- I am less stressed.
- You can turn off the camera and a teacher cannot see that I eat.

Regarding the fourth question there were a lot of different answers, but they could be classified into two groups. One group consisting of 70 per cent of students, who liked the online courses and did not see the difference from traditional teaching in terms of lower demand on their learning progress. The second group of 30 per cent of students did not mind the online programme but they would prefer to see a teacher face to face to solve the problems instead of using the online conference room, where they cannot fully express themselves.
The fifth question was: What type of exams would you prefer in the future: online or traditional? Please support your view.
Ninety per cent of students prefer the online exams.

The answers were the following:
- I prefer online exams it is easier.
- If you do not like some subjects and you do not need them in the future, then you can get some help and nobody can see it.
- The online exam is without stress
- There is not teacher walking around the room or watching you.
Analysing all answers, majority of students preferred the online programme because they did not feel the stress and peer pressure of being in a classroom. Moreover, over eighty percent of students said that they had more time for themselves because they saved time on travelling to school and the breaks. In general, we may assume that the online programmes are becoming more popular than the traditional schooling. Finally, Covid-19 enforced a new age of teaching.
On the other hand, there are subtends who cannot benefit from the technology and their learning situation is different. *UN, UNICEF and OECD ask countries to meet new education policies. The new report publish in April 2020 by the United Nations Education Agency under the title: "Covid-19 Spreading Digital Learning While Spreading" says that nearly 830 million students around the world do not have access to computer out of school and forty per cent of these students have no internet access* (Kayalar, 2020, p. 25).

The Economy in the time of pandemic

It is estimated that the Covid-19 epidemy can start severe recessions in the world. The social distancing caused many companies to have *negative value added as the cost of inputs exceeds gross production* (World Bank, 2020, p.17). From the global perspective, Africa seems to be in the worst economic situation due to the outbreak of Covid-19. As Bruno Del Medico says: Africa risks being the weakest link, not only from a health point of view, but also from an economic one. According to the "China Africa Project", there are a few crucial points which can decide about the situation in Africa (Del Medico, 2020, p. 120). Theses are:
- global investors may withdraw from the African market, because some of the African countries fully depend on the Chinese economy
- Chinese economy may slow down and this can influence the investments and projects carried on in allied African countries
- the slow down of the Chinese economy will reduce the import of raw materials from Africa.
As David Klooz says: *The US economy, and therefore the world economy, is in a perilous position.* The Federal Reserves interventions to the repo market (short term borrowings for dealers in government securities) did not meet the expectations and showed the weak condition of the banking system (Klooz, 2020, p. 31).

CONCLUSIONS

The social life pattern has drastically changed after the outbreak of Covid-19 all over the world. Countries closed their borders and people became afraid of leaving their houses. The social distancing impacted the relations between people. The schools and universities had to adjust their programmes to this harmful reality. Young people presumably could accept this situation easier than their parents, because they were brought up in the internet age and their life was based on contacting people and doing some classes using computers. Whereas their parents had to face the stress of work in the changed conditions and financial problems being the result of global economy situation. Therefore, the world has changed, and we may assume that people started noticing and appreciating different values then before. Social policies started to gain priority. As Lawrence Knorr says: *With increasing awareness of the disproportionate impact on minority communities, public health and education services are in great demand. Stop worshiping money and giving it the power to influence every decision to be made for the good of people* (Knorr et al, 2020, p. 30).
On the other hand, David Caley expresses his different approach to Covid-19 national policies. He argues that the declaration of the pandemic by the World Health Organisation caused drastic changes to the public atmosphere. As a result, *the measures mandated have involved a remarkable curtailing of civil liberty* (Klooz, 2020, p.44).

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Indigenous Students Already in the Margins: Post-Pandemic Schooling Realities - Ontario (Canada)

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Abstract

The rippling effects of the COVID-19 pandemic across all sectors of society have defied ordinary experience. To varying degrees, it has disrupted the ebb and flow of the fundamental routines of our lives and forced us to function *differently*. This is certainly true for public schools across Canada, and many other parts of the world. By mid-March 2020, approximately 107 countries worldwide mandated school closures as a result of COVID-19 impacting over 860 million children and adolescents. While educators will be impacted by post-pandemic realities, it will be the school-aged children and youth attending Kindergarten to Grade Twelve schools across Ontario that will be most sensitive to the disruptions to habit and order that classrooms once provided. The re-immersion into Ontario classrooms may be especially strenuous for those Indigenous students who already felt marginalized by contemporary education practices. This presentation, therefore, will discuss how educators will have to create post-pandemic classrooms to eradicate the rigid and biased social and academic barriers that have created *an even greater inequity* between Indigenous and non-Indigenous school-aged learners.

Keywords: Indigenous students; pandemic; public school classrooms

1. INTRODUCTION

The rippling effects of the COVID-19 pandemic across all sectors of society have defied ordinary experience. To varying degrees, it has disrupted the ebb and flow of the fundamental routines of our lives and forced us to function *differently*. This is certainly true for public schools across Canada, and many other parts of the world (Brooks, Webster, Smith, et al., 2020; Wang, Zhang, Zhao, 2020). By mid-March 2020, approximately 107 countries worldwide mandated school closures as a result of COVID-19 impacting over 860 million children and adolescents (Viner, Russell, Crocker, et al., 2020). But, as the adage goes, "this too shall pass." And when it does, some things will be a far cry from the once-familiar.

It remains to be seen, thus, what schools and classrooms will look like in a post-pandemic reality. Education leaders across national and provincial levels are presumably investigating and considering a complex knowledge of possibilities alongside real time constraints and health advisories (Dong, 2020). At the local level, school administrators will have to develop and refine descriptive definitions of practices to provide a consistent sense of structure for both teachers and students. Teachers' planning, delivery, and assessment will have to be steadfastly focused on students' diverse and unique learning needs.

2. Discussion

While educators will be impacted by post-pandemic realities, it will be the school-aged children and youth attending Kindergarten to Grade Twelve schools across Ontario that will be most sensitive to the disruptions to habit and order that classrooms once provided. Teachers will have to account for the time lost to face-to-face instruction, as they will have to plan for the discontinuity of students' curriculum-based learning. It will be a challenging experience for some students who, for one reason or another, did not thrive in virtual classrooms and learning from home (see, for example, Szabo, Richling, Embry, et al., 2020).

The re-immersion into Ontario classrooms may be especially strenuous for those Indigenous students who already felt marginalized by contemporary education practices. Research has shown that mainstream teachers are often unprepared to provided culturally-appropriate learning environments, while Indigenous knowledges and curriculum often do not exist to appeal to Indigenous students' realities (Cherubini, 2014a; 2014b). We must consider, then, the extent to which the on-line platforms adopted across the province during the crisis (at no fault necessarily of Ministry officials) privileged dominant Eurocentric learning paradigms. Consider, too, those Indigenous students who have been impacted by adverse social and material realities. Those who lacked guidance from an adult during the on-line learning period, had limited connectivity and access to technology, or quite simply, were overburdened by other circumstances and responsibilities. For Indigenous students that feel marginalized, school can be arduous in the best of times (Cutrara, 2018). These are the children and youth who have never seen themselves reflected in the social, cultural, political, and academic fabric of their schools and classrooms. Theirs is an experience of formal education whereby even comparatively base expectations can be extraordinarily difficult.

Consequently, post-pandemic classrooms will have to eradicate the rigid and biased social and academic barriers that have created *an even greater inequity* between Indigenous and non-Indigenous school-aged learners. Administrators and teachers must be thoughtful in their preparation of how to address those Indigenous students once in peril of "falling through the cracks" who may be firmly embedded in them when schools return to *normal*. Educators and other stakeholders need to approach these equity-related issues with conscious deliberation and recognize the limitations of pre- and post-pandemic conditions. They will have to be flexible enough to accommodate the demands and learning styles of Indigenous students traditionally derailed by formal education and external influences.

3. Recommendations and Conclusion

But mainstream educators may be well-advised not to embark on this process of re-envisioning alone. Particularly as it relates to the ethical spaces of teaching and learning (Ermine, 2007).

School officials, therefore, are encouraged to consult and partner with the Indigenous education leaders, Elders, and communities in each of their respective districts to co-produce locally relevant knowledge and classroom-based practices in post-pandemic schools and classrooms (Davis et al., 2017). Particularly important is for mainstream policy makers and educators to appreciate the fact that some Indigenous students live in Ontario communities that continue to harbour the consequences of residential schools. For these students especially, any mainstream references to normal and education were historically foreign to begin with. Indigenous voices must be directly involved in determining the educational landscape for Indigenous students' intellectual, emotional, spiritual, and physical well-being in order for Indigenous students to have access to the educational and social resources necessary for a quality of life comparable to non-Indigenous students.

And on the basis of this vision, these brave Indigenous leaders and educators can co-maneuver across familiar and unfamiliar culturally-appropriate pedagogical modes to engage Indigenous learners and honour the Truth and Reconciliation Commission's Call to Action (2015a, #65; see also, TRC b&c) to further the relationality between Indigenous and non-Indigenous peoples and nurture Indigenous-Settler relationship-building as we envision the landscape of the new normal across Ontario schools.

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Implications of Pandemic Outcomes for Racialized Youth

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Abstract

Suspensions and expulsions have disproportionately impacted racialized youth and minorities. Similarly, neo-liberal education success and achievement ideologies have further entrenched racialized youth in unequal outcomes. Research suggests that race and identity are integral for distinguishing a sense of belonging, and that racialized youth with stigmatized social identities are especially vulnerable to feeling alienated from the dominant values and traditions of schools, including the academic expectations that determine success. The disruption to formal but especially alternative schools and education programs as a result of the global COVID-19 pandemic has not only impaired the knowledge-transfer of information for students but has potentially contributed to the heightened marginalization of racialized youth attending alternative school placements by disrupting what may be already fragile understandings of belonging and resilience.

Keywords: Racialized youth; pandemic; alternative school placements

1. INTRODUCTION

Various neo-liberal education policies related to zero-tolerance and standards of student achievement have had profound influence on students' experiences in publicly-funded schools across Canada, the United States, and elsewhere (Apple, 2006). Suspensions and expulsions, as disciplinary measures to create safe-schools, have disproportionately impacted racialized youth and minorities, including those identified with behavioural issues and those belonging to lower socio-economic classes (Bhattacharjee, 2003; Levinsky, 2016). Similarly, neo-liberal education success and achievement ideologies have further entrenched racialized youth (including Indigenous students) in unequal outcomes (Cherubini, 2014; Mirra & Morrell, 2011). Market-driven incentives, Eurocentric epistemologies, and large-scale external standardized tests have contributed to more restricted curriculum expectations and to the further exclusion of the marginalized epistemologies of racialized youth (Cherubini, 2018; Kantor & Lowe, 2006). The inequities between racialized and mainstream youth are pronounced across North America, and include significant achievement gaps (Morris & Perry, 2016), health-related outcomes (Reiss, 2013), and limited access to social, health, and economic resources and support networks (Nichols, 2018).

2. Context

For racialized youth already feeling marginalized in their public schools and classrooms, their sense of belonging – both psychologically and physically – may already be vulnerable (Allen & Kearn, 2017). Research suggests that race and identity are integral for distinguishing a sense of belonging, and that racialized youth with stigmatized social

identities are especially vulnerable to feeling alienated from the dominant values and traditions of schools, including the academic expectations that determine success (Cook, Purdie-Vaughns, Garcia, & Cohen, 2012). These students do not necessarily see themselves represented in the socio-cultural and academic spaces of public education (Hughes, Im, & Allee, 2015; Morales-Chicas & Graham, 2017). The result, quite frequently, is in the disengagement of racialized youth from formal schooling since the social and academic contexts do not meet their needs and interests as youth and as learners (Eccles & Roeser, 2009).

Many racialized youth already marginalized from public school attend alternative education placements in non-traditional learning environments. Research spanning the 1980s and 1990s, estimated that nearly 25% of Canadian students who were identified as needing specialized help attended alternative education placements in their respective regions (Winzer, 1997). Students enrolled in alternative education programs have been identified as having mental or cognitive conditions, struggles with substance abuse, and/or come from a complex array of socio-educational disadvantage (Dowse et al., 2014). These racialized students may also require other supports and services to meet their respective needs (Collings, Dew, & Dowse, 2016). The literature attests to the success of some alternative programs to further students' academic and socio-emotional progress (Wisner & Norton, 2013).

3. Discussion and Implications

The disruption to formal but especially alternative schools and education programs as a result of the global COVID-19 pandemic has not only impaired the knowledge-transfer of information for students, but has potentially contributed to the heightened marginalization of racialized youth attending alternative school placements by disrupting what may be an already fragile understanding of belonging and further threatening their sense of resilience. Racialized youth enrolled in alternative education may already be considered socially polarized given their exclusion from mainstream schools (Gallagher, Starkman, & Rhoades, 2017). Labelled as "at-risk" learners, these racialized youth must rely on inconsistent and sometimes fluctuating supports and services to strengthen their resilience, develop positive identities, and succeed academically (Kubiliene, Yan, Kumsa, & Burman, 2015). In the absence of the supports offered by mainstream and currently alternative education providers, racialized youth may lack the space and assistance to cope successfully with these unprecedented changes. One cannot help but wonder about the implications this will have on their ability to remain resilient during the time that schools and programs remain closed in attempt to prevent the spread of the virus. In those instances where alternative school providers offered a consistent and caring social environment, provided access to the necessary social services, and delivered academic programming so that racialized students could experience success, these youth have been left to cope without such important protective factors that are themselves key to promoting resilience (Howard et al., 1999).

It is necessary therefore for educators at all levels to acknowledge, in consultation with the partner health and social services of alternative schools, how best to re-integrate racialized youth into their educational programs given both the race-based inequities further accentuated during school closures, and students' potentially fragile state of resiliency. It will require concerted planning and delicate skill to account for the state of well-being for racialized youth in relation to the heightened sense of difference they may have experienced.

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Covid-19 in Nigeria: Significance of Credible Health Information Amidst Misinformation, Conspiracy Theories, and Uncertainties

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Abstract

The COVID-19 pandemic is currently posing major health challenge to the whole world including Nigeria. There has been a steady rise in the number of cases in Nigeria since the first confirmed case in February 27, 2020. There have been countless wild stories about its origins, effects, and cure. False and inaccurate information about the coronavirus has spread around Nigeria more rapidly than the virus itself. The information is disseminated through the social media and on one-on-one contact. Misinformation leads to panic and panic leads to erratic behavioural change and wrong actions.

This article addressed the coronavirus misinformation and conspiracy theories menace in Nigeria. It was concluded that Covid-19 has spread to Nigeria amidst misinformation, panic and uncertainties, and this has attracted corresponding public health response from the federal government, the state government, the philanthropic organizations, and the general public. It is therefore recommended among other things that government should formulate and enforce policies that guides against misinformation menace in the country.

Keywords: Nigeria, COVID-19, misinformation, policies, conspiracy theories

1.1 Introduction

The COVID-19 which is currently posing major health challenge to the whole World [1], emerged in 2019 December in Wuhan, China [2]. The total number of confirmed coronavirus cases worldwide as at June 27, 2020 stood at 10,012,617 out of which 999,192 [3] people died and 5, 419,828 recovered [3]. It has spread across almost all the continents of the World, thus making it a major global health concern [4]. There has been a steady rise in the daily total number of COVID-19 cases globally. Scientific literatures revealed a link of COVID-19 to a single local fish and wild animal market indicting possible animal-to-human transmission and human-to-human transmission [4, 5].

Early studies reported a presumed hospital-related transmission and transmission by asymptomatic carriers [6]. Its potential for pandemic has been forecasted by previous studies [7, 8, 9]. It was equally reported that global travel can further enhance its worldwide spread [10, 11]. World Health Organization (W.H.O) on January 30, 2020 ranked

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COVID-19 as the Sixth Public Health emergency of international concern. W.H.O's previous ranking has been: HINI (2009), Poliomyelitis (2014), Ebola in West Africa (2014), Zika (2016), Ebola in the Democratic Republic of Congo (2019). This article is written to address misinformation, conspiracy theories relating to COVID-19 pandemic in Nigeria.

1.2 Case summary of COVID-19 in Nigeria

Nigeria is not exempted from the novel coronavirus outbreak that cause the disease COVID-19, the virus strain is named SARS-CoV-2 [12]. Covid-19 was brought to Nigeria by an Italian man from Milan – he was tested positive for SARS-CoV-2 [14 – 15].

Table1. Analysis of COVID-19 in Nigeria by State as at June 27, 2020

State	Cases	Active	Recovered	Deaths
Lagos	**9,741**	8,140	1,475	126
FCT	**1,676**	1,126	518	32
Oyo	**1,264**	748	506	10
Kano	**1,191**	322	818	51
Rivers	**982**	408	536	38
Edo	**873**	573	267	33
Delta	**781**	589	170	22
Ogun	**756**	241	498	17
Kaduna	**684**	354	320	10
Katsina	**528**	239	267	22
Bauchi	**497**	61	424	12
Gombe	**487**	142	329	16
Borno	**477**	58	387	32
Jigawa	**317**	120	191	6
Plateau	**298**	134	156	8
Abia	**297**	121	173	3
Ebonyi	**285**	37	247	1
Imo	**278**	242	33	3
Kwara	**217**	83	128	6
Ondo	**216**	127	70	19
Enugu	**202**	160	37	5
Nasarawa	**198**	78	112	8
Bayelsa	**184**	131	41	12
Sokoto	**140**	7	118	15
Osun	**106**	54	47	5
Niger	**84**	44	37	3
Akwa-Ibom	**83**	38	43	2
Zamfara	**76**	–	71	5
Adamawa	**73**	30	37	6
Kebbi	**71**	23	42	6
Anambra	**71**	5	57	9
Yobe	**56**	3	45	8
Benue	**47**	31	15	1
Ekiti	**40**	10	28	2
Taraba	**19**	9	10	–
Kogi	**3**	3	–	–
Total	**23,298**	**14,491**	**8,253**	**554**

Note: Data as of 2020/06/27 00:00 WAT[13]

Source: *"NCDC Covid-19 Page". Nigeria Centre for Disease Control Retrieved June 27, 2020*

1.3 Public health response to COVID-19 in Nigeria

The major health concern of the novel coronavirus has attracted varying response from all levels of government in Nigeria [16]. Response to the pandemic in Nigeria includes: awareness creation, testing, monitoring [17], and isolation of suspects, and quarantine of people that have been tested positive [18-19]; establishment of a Presidential Task Force for the control of the virus in the country; closure international airports and cancellation of all flights to Nigeria due to the virus outbreak and placing a travel ban on other countries, especially countries with high cases of the virus [20–21]; indefinite closure of sea, air and land borders, railway passenger services; and suspension of the activities of commercial motorcycle and commercial transportation allowing only fuel takers and vehicles conveying food items and other essential commodities, but subject to screening and testing at the point of entry [22-23].

Similarly, other response include: Postponement of the 20th national sports festival, football activities and indefinite suspension of National Youth Service Corps programmes [24]. Banning religious and public gatherings and banking operations [23-25] and indefinitely suspension of the New Africa Shrine programmes [26]. Indefinite closure of schools, cinemas, nights clubs, public parks, weddings, burials and religious worship centers, and restriction of all religious activities; banning social, political gatherings, open movie centers, and all public gatherings across Nigeria [27-29]. Suspension of Independent National Electoral Commission's activities [30].

In the same vein, other local complementary responses include: closure of stores and markets, allowing only sellers of food items, medicines, water and other essential commodities to operate [31]. Restrictions of movements except to providers of essential services like; security, healthcare, directing pharmacies to remain open, water services, fire services, power services, essential departments of media houses and telecommunications companies[32]. Shutdown of all courts [33], immediate closure of international airports and land borders in the country [34]; suspension of Joint Admissions and Matriculation Board's activities [35], suspension of Federal Executive Council, (FEC) meetings, indefinite adjournment of the Nigerian Senate and Nigerian House of Representative's plenary [33]; indefinite postponement of the 2020 common entrance examination into 104 Unity schools in Nigeria [34-36], and enforcement of measures to curb the spread of the virus which led to killing at least 18 people in Nigeria [37] are also part of the responses to COVID-19 in Nigeria.

Gradual release of lockdown by: relaxing the ban placed on religious gatherings and banking operations, the re-opening of domestic airline operations, shortening the curfew, and allowing only those on essential duties such as health personnel, fire service, security personnel, environmental officials, power and water supply agencies, media and telecommunication officers to operate. Other release measures include: permitting pharmaceutical and medical outfits to open, reversing the total lockdown and restriction order, the mandatory use of face masks or coverings in public places, and reopening of the major markets [38-45].

1.4 Misconception, misinformation, and conspiracy theories

Since China first alerted the World Health Organization of SARS-CoV-2 outbreak and its potential to spread globally, the virus has inspired countless wild stories about its origin, effects, and cure. False and inaccurate information about the coronavirus has spread around the world more rapidly than the virus itself, prompting the head of the World Health Organization, Dr. Tedros Adhanom Ghebreyesus, to warn that we're not just fighting an epidemic; we're fighting an infodemic. Cascades are more likely to occur with false news [46].

The information is disseminated through the media such as Radio, Television, Newspapers, and through other social media such as Twitter, Facebook, WhatsApp, Instagram etc. The telecommunication lines enable easy and more impactful information sharing and distribution. Within the shortest time, information on social media goes viral. As useful as these platforms are for information dissemination, it can effectively and efficiently misinform the public.

Literature revealed that coronavirus conspiracy theories are a public health hazard [47].Covid-19 misinformation and conspiracy theory goes viral in Nigeria. The chief conspiracy theory is that "SARS-CoV-2 was man made/bioengineered in a laboratory". Yes, the Wuhan Institute of Virology has a laboratory with the highest security level-biosafety level 4- and its researchers study coronaviruses from bats but researchers from the Institute have

insisted that there is no link between the COVID-19 outbreak and their laboratory. The phylogeny of SARS-CoV-2, confirmed that the virus is of natural origin not man made [48].

Similarly, the use of drugs such as Choloroquine for Covid-19 is another theory. This unverified information led to Chloroquine poisoning in Lagos State. People, out of panic bought, hoard and abuse Chloroquine. This led to increased hospitalization and scarcity of the drug in the state [49-52]. Other COVID-19 misinformation and conspiracy theories include; the use of other drugs such as Vitamin C, Omega combined with fasting lemon and orange juice, Armatem, Bicarbonate, lemon slices in a cup of lukewarm or hot water, drinking and bathing with hot water always, which could lead to burns, staying in the sun as much as possible, gurgling with a disinfectant to prevent being infected, eating peppery food always, eating many ginger with garlic and hot chilies and pepper, mix and drink lemon.

Abuse of the drugs and misapplication of some of the cautions could constitute health hazard. For instance, a woman sustained burnt injuries to her two upper extremities; she operated cooking gas immediately after rubbing her hands with sanitizer without washing away the sanitizer from her hands before operating the gas. Another instance of information misconception on the use of sanitizer was drinking sanitizer because of COVID-19. Some misinformation suggests that Nigerians living in a hot climate country shouldn't worry about the virus at all because the virus can't withstand the heat in Nigeria; it is a byproduct of bat soup, an escaped bioweapon; and a disease treatable by Lysol, oregano oil, or, worse yet, gurgling with bleach are all conspiracy theories that have not been verified in Nigeria. Conspiracy theorists are inquisitively challenging that rolling out the fifth generation (5G) network by the Chinese and other stakeholders is the cause of the pandemic that has gripped the world since December 2019 [52].

COVID-19 misinformation has stoked xenophobia, created relentless demand for unhelpful products, added considerable confusion to an existing uncertain condition. All these misinformation has no scientific backing and not verified [52]. Misinformation does more harm than good to the people. The menace of misinformation about COVID-19 causes major concern to Nigeria's experts in the field of health information management. This could lead to confusion and people may be having difficulty on the information to belief. Misinformation leads to panic and panic leads to erratic behavioral change especially during this period of global pandemic of the novel Covid-19. Misinformation and rumor mongering is dangerous to people's health during epidemics, it leads to anxiety, panic, which consequently lead to ill-advise decisions and wrong action [53].

The following steps should be taken to debunk COVID-19 conspiracy theories, conspiracy theorists, and misinformation: be empathetic with information disseminator because many are trying to create awareness, they don't mean to be malicious; cite authoritative sources when correcting the misinformation; talk one-on-one - people are more receptive to corrections that come from their friends and family compared to random people; pre-bunking instead of de-bunking - disseminating true information from reliable source as a preventive measure is helpful; everybody has a responsibility to help correct bad information [53].

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1.3 Conclusion

COVID-19 is real and prevalent in Nigeria. It is spreading at an alarming rate on daily basis. Social media is a good source of sharing and disseminating health information especially during the outbreak of diseases such as the present COVID-19. Awareness has been fully created about COVID-19, its prevalence, mode of transmission and preventions. However, some of this information is misleading, disconcerted, and unreliable with damnable consequences. Therefore, appropriate measures should be put in place to debunk the misinformation and conspiracy theories in Nigeria.

1.4 Recommendations

1. Policy formulation and/or implementation on ads for products that refer to any disease or outbreak such as COVID-19 that may likely create panic and /or advertise their products as the safest way of guaranteeing a cure or prevent people from contracting the disease.
2. Regular update on accurate situation report of the epidemic by relevant health agencies.
3. Reliable education and communication campaigns on the media about COVID-19 and other outbreaks by the government through NCDC.
4. Prompt implementation of planned responses to emergencies.
5. The existing measures of controlling information dissemination through social media should be implemented fully with additional measures to control and/or minimize misinformation sharing.

Acknowledgements

The author appreciates Samuel Omidoyin for creating awareness about the virtual conference, the call for paper, and for his editorial work on this paper.

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Unfinished Transformation: The Impact of Online Teaching to China's Middle School Teachers' Teaching in the COVID-19 Outbreak

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Abstract

As the unplanned and unprecedented outbreak, COVID-19 has caused large-scale school closures and online teaching in spring 2020, which has been regarded as a global social trial of online education. This qualitative study used thematic networks as the tool to interpret and understand the impact of online teaching on China's middle school teachers' teaching for whom they experience the transformation from offline teaching to online. Six teachers participated in the study, and qualitative data sources include online video focused-interview and in-depth interviews. The findings illustrated a relatively holistic view of the transition from the preparation, the process of online teaching to returning to schools. Teachers faced a weak effect on managing the students, more like panoramic surveillance, more data related burden, and lower teaching enthusiasm. Although the teachers were reluctant to teach online, they have changed their teaching to adapt to the new environment to reflect on online teaching. While both the participants and China's transformational learning is ongoing. The results suggested the construction of the network and teacher education on online pedagogy.

Keywords: online teaching, COVID-19, transformational learning theory, China's middle school teachers

1. Introduction

At the end of January 2020, COVID-19, as a sudden virus disaster, gradually swept the world, affecting the daily life of the global people. As a kind of virus that can harm human beings and has high infectivity between people, many countries worldwide have adopted the measures of home isolation in the period of the outbreak. Teachers and students are no exception. As a densely populated place, schools have been closed during the epidemic, which means that the spring semester has shifted from the original offline classes to online classes on a large scale. It is the first time in history. According to UNESCO (2020), as of June 28, 2020, there were 1,078,127,299 learners affected by COVID-19, accounted for 61.6% of total enrolled learners and there were 116 country-wide closures. As the first country to suffer a large-scale and high-intensity virus attack, China was the pioneer to choose to close schools and launch anti-epidemic work in the education system. On January 27, China's Ministry of Education (MOE, 2020a) announced that it was postponing the start of the 2020 spring semester. Two days later, the MOE (2020b) put forward an emergency policy initiative named "Suspending Classes Without Stopping Learning" to let students learn at home through online teaching by building the "cloud classroom" and integrating various high-quality resources. For China, K-12 online teaching nationwide brought by the COVID-19 is no different from the world's largest information-based teaching social experiment and a spontaneous open education resource movement (Huang,

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Zhang, Shen, Tian, & Zeng, 2020). In China, the virtual classroom is not a conventional way for primary and secondary schools. Most public and private schools still adopt the traditional face-to-face teaching. Therefore, online teaching was a test and also a learning opportunity in practice for most teachers in China.

For online teaching, many scholars have studied it and have made a relatively consistent view. Compared with traditional teaching, online instruction has its unique features for which the requirements for teachers are different from traditional teaching (Pulham, Graham, & Short, 2018). Of course, teachers have different teaching experiences (Cui et al., 2020). Compared with traditional teaching in the classroom, online teachers rarely see their students, communicate primarily through writing, and they can work at any time and in any place and need strategies to ensure students' active participation (Southern Regional Education Board, 2003). Besides, the change of teaching scene also makes the role function of teaching subject change. For example, some teachers change from the organizer and knowledge imparter of the classroom teaching to the tutor and question responder (Zheng & Wan, 2020). Facing the differences between online and offline education, teachers cannot only transfer the traditional classroom teaching skills to online settings, but they also need to explore new pedagogy suitable for online teaching.

Although online teaching in primary and secondary schools is a relatively new thing for the society and a transformative experience for teachers in China, it may not be the same situation in other countries. It was elucidated that 30 states had full online K-12 schools with a full-time student body of over 315,000, a 6.2% increase over the previous school year in America (Watson et al., 2014). With the increasing attention of the society to the dropout rate, security issues, bullying, and peer pressures, the convenience and demand of virtual school increase (Toppin & Toppin, 2016). However, online teaching has also exposed the unsatisfactory points. For instance, although online teaching can break through time and space limitation, which means a teacher can teach more students at the same time, this kind of an excessive number of students actually affects the teaching effect (Archambault & Crippen, 2009). Also, there is a lack of understanding of teachers and preparation for online educators (Picciano et al., 2012).

In the large-scale social experiment of online education stem form COVID-19, some technical experts formulated that online education was the future of education. Whether offline education is ultimately replaced by online education or not, the key issue is the participation and responsibility of teachers (Zhu, 2020). Whether online teaching is the future, the primacy lies in teachers and their classrooms (Cui et al., 2020). In this regard, it is necessary to study and record the teaching practice and teachers' responsibilities for the unexpected interruption of K-12 education caused by COVID-19 (Kaden, 2020).

The current study is a qualitative study to examine the impact of online teaching experience on middle school teachers' teaching in the COVID-19 pandemic. On the one hand, the interpretative study can verify the effectiveness of previous research on teachers' responsibilities, skills, challenges and so on. More importantly, it may provide more complete, vivid, and vibrant descriptions of participants' online teaching process during the epidemic, including the situation, mood, perceptions and behavior at that time. This study intends to promote researchers, policymakers, and teachers' educators or trainers' understanding of online teachers to respond to the needs of online teaching quality improvement and updating the online educators' preparation. The research questions are defined as:

How do middle school teachers perceive and prepare for teaching online during the COVID-19 outbreak?
How do middle school teachers describe the process of transforming from offline teaching to online teaching?
How do middle school teachers consider and reflect the period of online teaching when returning to schools?

2. Theory

Transformational learning theory is proposed by Mezirow, aiming at helping an individual to become a more autonomous thinker to empower their learning skills. As it is the very core of adult education, it focuses on the tensions and comfort of the teacher within the new role of online instructor as the teacher's prior face-to-face role was changed and transformed (FaulknerBeitzel, 2008; Mezirow, 1991). Reflection is a critical component in transformational theory (Cranton, 1994). Meaning is also a vital element, and the process of learning to make meaning is focused, shaped, and delimited by our frames of reference and we have a strong urgent need to

understand the meaning of our experience (Mezirow, 1994). Besides, being an active participant in his or her learning is required by transformational learning (King, 2004).

As students' educators, teachers who have never experienced online teaching themselves also learn in the new educational environment. Transitioning into a new teaching environment allowed re-examining how prior learned teaching methods and strategies were re-conceptualized to operate effectively within the new environment (FaulknerBeitzel, 2008). Therefore, viewing online teachers as active and reflective adult learners and the happening of transformation as teachers conduct a pedagogical inquiry with technology are the premises of using transformative learning theory (Baran et al., 2011) as the study's interest theory guiding the whole research.

3. Methods

3.1. Thematic networks

A qualitative study was conducted to identify the changes of teaching transferred from the brick-and-mortar classroom to the virtual, to uncover and interpret the lived experience of a group of middle school teachers as they experience that transition during the COVID-19 spring semester. To yield meaningful and useful results, the study used thematic networks as an analytic tool. Web-like illustrations (networks) that summarize the main themes (basic themes, organizing themes, and global themes) constituting a piece of text aiming to facilitate the structuring and find within it explicit rationalizations and implicit signification (Attride-Stirling, 2001). The full process of thematic analysis is threefold: the reduction or breakdown of the text, the exploration of the text, and the integration of the exploration (Attride-Stirling). All these steps have been down carefully in the study.

3.2. Participants

The participants are six middle school teachers from China who made the transition from the traditional face to face teaching to online teaching. And all the participants are with no experience of teaching online before the COVID-19. An alias was assigned to each participant and will be used. More detailed data about participants are shown in Table 1.

Table 1. Description of six participants

Alias (age, sex) (province of the school)	Degree	Yeas of teaching	Grade	Subject	School type
Yan (24, female) (Hunan province)	Bachelor	Two	Seventh	Mathematics	Public
Wang (24, female) (Hunan province)	Bachelor	Two	Eighth	Politics	Private
Zhen (25, male) (Hunan province)	Bachelor	Two	Ninth	Politics	Public
Pan (25, male) (Guangdong province)	Bachelor	Two	Seventh	Politics	Private
Lei (26, female) (Guangdong province)	Master	One	Seventh	English	Public
Qi (56, male) (Guangdong province)	Bachelor	Thirty-seven	Eighth	P.E.	Public

3.3. Data collection and analysis

One four-person online video focus group interview lasting one hour and a half and two one to one in-depth interviews each lasting 40 minutes were conducted in the study with open-ended and closed questions. With the consent of the participants, all interviews were recorded and then were transcribed verbatim. Next, the three stages of thematic analysis were acted. With that validity in qualitative study demands the findings represent the participants' data (Creswell, 2014), the more accurate, the better, the participants were invited to check the transcripts and the reporting. Besides, to verify the networks, the text segments related to each basic themes and the sections put into the whole context have been gone through for several times.

4. RESULTS

Three relatively separate thematic networks identified in the current study represent the different but coherent three stages of online teaching, see Figure 1. The first one generated from the stage of preparing for the online teaching included one global theme (online teaching was driving a duck onto a perch), four organizing themes (mood with more worry than joy, lesson preparation with reduced tasks and increased difficulties, technical learning, and idle existing teaching resources) and thirteen basic themes (listed below). The second one abstracting from the stage of ongoing of online teaching also contained one global theme (teachers danced in chains), five organizing themes (online classroom with a weak effect, the changed teaching links, a more critical parental or the guardians' role, the reduced teachers' teaching self-efficacy, and enthusiasm, the increased workload and working pressure) and nine basic themes (listed below). The last network was composed of one global theme (online teaching is an emergency strategy), two organizing themes (unrecognized video lessons and improvement of the teaching technology) and four basic themes (listed below) showing the stage of when the online teaching over. Each of these thematic networks will be explored respectively to inquiry about the experience and influences of teaching from a brick-and-mortar classroom to an online environment in the COVID-19 pandemic, what has been transformed and why.

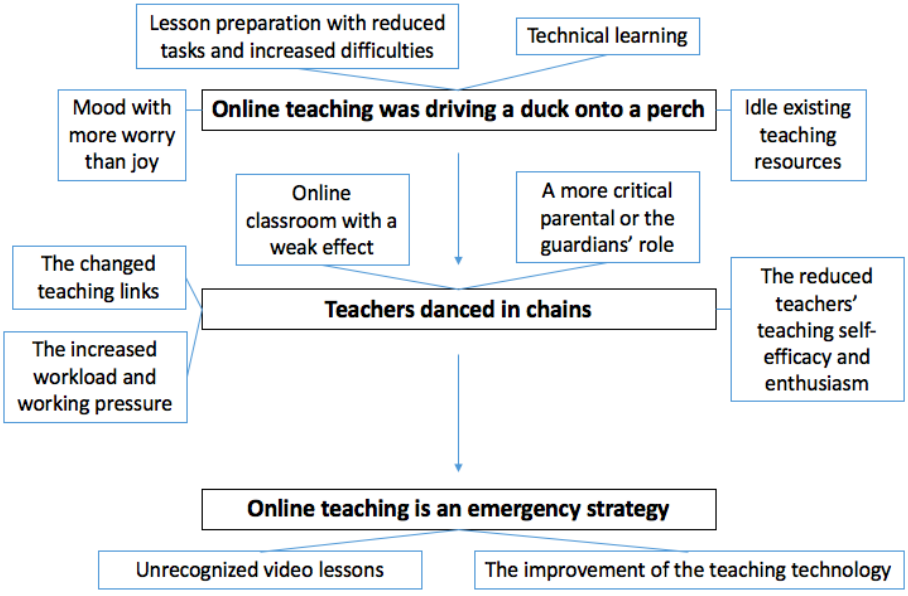

Fig. 1. The thematic networks including organizing and global themes

4.1. Online teaching was driving a duck onto a perch

This network represented mainly an exploration of participants' perceptions and preparations for the coming online teaching.

The first organizing theme was mood with more worry than joy with two basic themes:

- Online teaching was unexpected
- Good imagination and worry coexist

In the aspect of teaching online, for the general public and private primary and secondary schools, online teaching is rarely used before the pandemic. It is not surprising that online teaching was a sudden matter for all the participants. They did not have the experience of teaching their students through the network for whom the traditional face-to-face teaching was their daily routine. Hence, when they were informed to teach online, they were concerned about it with a little expectation for experiencing the online teaching breaking through the limitation of time and space. Besides, a teacher pointed out that it was no need to see the students, out of sight, out of mind. However, the mood mentioned above was not the major; the main feeling was worry:

Lei: Junior high school students are not very conscious, which demands me to have 52 pairs of eyes when facing 52 students in the classroom and to always stare at them. When I look at the students sitting on the left, the students on the right will be distracted, dazed, chat, or turn to look out of the window. Such an online class is not capable of achieving that.

The second organizing theme was lesson preparation with reduced tasks and increased difficulties with six basic themes:

- Subjects with strong current politics required teachers to record new courses
- Less interesting content was more difficult to prepare for online teaching
- The scale of teaching and research group influenced the amount of the lessons preparing task
- Limited materials increased the difficulty of lesson preparation
- Unskilled technology made recording more difficult
- Hardware can reduce the difficulty of preparing lessons

According to this organizing theme, although the workload of preparing lessons was less than before, the difficulty was much more significant. In China, teaching and research group is an essential formal organization where teachers of the same subject in the same grade are organized together to conduct teaching and research activities. The teacher who is the most experienced will be the leader of the group to give guidance to the novice teacher. In the case of facing the unfamiliar teaching online, most of the participants said teachers shared all the resources in the group, that is to say, courseware, lesson plans, etc. are the same in the whole grade. In this way, the task of lesson preparation was assigned to each teacher, instead of every one preparing all the contents they needed to teach as before. So, the teaching and research group has become more united and co-operative. Of course, the number of teachers in the same teaching and research group affected how much work was reduced.

Owing to the unknown and unexpected of online teaching, all the participants in the interviews knew a little about the technology. What is more, because of the Spring Festival, when the COVID-19 outbreak, teachers would like to have an enjoyable holiday with their family. Thus, many teachers in the interviews did not have the teaching materials they usually used or compiled by themselves. When they could not return to the working city, the materials needed for preparing lessons were needed to be searched again. One teacher, even more bad, did not bring the working computers home, so she had to record electronic coursework through the mobile phones with a small screen, which made it more difficult for the teacher who was not familiar with online teaching. In addition, the teacher of graduation grade whose students were going to take the graduation examination soon, teaching content was difficult to understand for students and teachers who needed a lot of blackboard writing to clarify were in trouble when preparing lessons:

Yan: It was more troublesome not to be interrupted when recording. I am in mathematics, and there are many contents that are abstract and not precise. We should use the blackboard to make the formula or process clear. I used to work in New Oriental [an after-school tutoring agency]. My colleagues all bought professional equipment, the writing boards, which can be connected to computers and enable teachers to write the words neatly. For me, I did not have, and although the characters I wrote ware ugly, yet I sent them to the students, which was not a good fact.

Zhen: At that time, we were entering a review of all the learned content for the high school entrance exam. Initially, it was difficult to improve the interest of that class. It was even tricky for preparing video lessons.

The third organizing theme was technical learning with three basic themes:

- Learning technology was easier for young people
- No other training except technical training
- Teachers needed to answer students' questions about the technology

When talking about online teaching, technology is inescapable, which is true of learning how to teach online for teachers. Comparing with young teachers, those who are elder and very familiar with the offline teaching showed the resistance to learning technology. They felt it was not easy to learn, and they would like to change classes with other teachers, which means after the epidemic ended and school began, the elderly teacher would teach other teachers' students for a period. As for the training before giving online lessons, there seemed not so many activities about training for how to teach online systematically or the pedagogical difference between teach off and online and then matters needing attention or anything else, except for the technical operation training given in the form of text file which was not complicated for young teachers who preferred to handle the using of the software by doing on their own instead of following the instructions. As a result, the almost sole technical training seems optional and not the essential contents that need to in the name of online teaching training. What made one participant wondered was that series training given by the experts or organized by the municipal and district education bureau about online teaching was carried out after returning to the offline.

Yan: Our training at that time was to tell you what kind of recording software was available and how to use it. I did not open some of the training videos. Some students had not taken online classes as a daily class. Therefore, I have to learn and solve their problem, too, which increased the fidget.

The fourth organizing theme was idle existing teaching resources with two basic themes:

- Existing teaching video resources were not used directly
- Teaching resource acquisition was relatively traditional

The existing teaching resources included two categories. One was the existing video resources, and the other was teaching resources on the platform of the national education department, or other recommended websites and case collections. While both of the resources were not be fully used. One participant's school holds a relatively reach video resources which has been recognized as excellent courses of the specific city, teachers in his teaching and research group did not use that directly; on the contrary, they prepared and recorded by themselves even if that would take their efforts. They chose to do that because the subject they taught was closely related to the times and current events. The other participant who teaches P.E. did not use the video resources directly because the students hope to see their own teachers in the video and not others who will teach them how to exercise their bodies. If not, the teacher stated that students would be more likely to distracted or not interested in the contents.

Since the beginning of the online teaching, the Ministry of education of the People's Republic of China has attached great importance to and published the guidance and some resource platforms. Besides, universities, publishing press, regional teachers' training schools, and other institutions have also successively launched public teaching resources for schools and teachers. However, most of the teachers in the interview said that they applied the resources from their school mostly and also took a reference from the Internet which did not refer to the resources

pool recommended by the state. As we all know, accessing the materials from school is a more traditional way. With the advancement of the Internet, more resources are emerging for teachers to search freely. Why they still preferred not to use the excellent resources recommended by the department or some office in teaching practice? The difference in regional teaching and the pressure of pursuing academic achievement contributed to this phenomenon.

Lei: We used the past stored resources of the school as a reference, and make some change to the requirement of the present leaders. Maybe we were outdated here, and we did not know what national resources they were. School resources were sufficient enough. On the contrary, others had no noticeable effect on improving students' scores. Our school pursues the academic performance.

Qi: Some of the national resources were useless as there were differences in teaching contents in a diverse region. For example, volleyball and martial arts in our area are generally less taught. So I did feel more trouble.

4.2. Teachers danced in chains

This thematic network was an elaboration about how teachers learned from the process of teaching online during the outbreak of the COVID-19, what were the challenges and opportunities and how teachers handled and felt that.

The first organizing theme was an online classroom with a weak effect with two basic themes:

- No matter the live or the video classes, it can not reach the atmosphere of offline class
- The condition of the network and the software often hamper the online class fluency

According to the participants, some schools chose to ask teachers to record lessons that the students watched the so-called video lessons. Other schools decided to let teachers air the lesson live, which the teacher considered a way closed to offline classes. The same point about video and live classes was that almost all the classes were large, one teacher facing students from several classes at the same time. Some even had a teacher who lectures to more than 1000 students from the whole grade. Of course, we can see the strong point that the traditional class does not hold that the teacher can teach many more students at once. However, thanks to the bad condition of the network and the defective design of the software used to perform the online lessons, the fact such as network delay, jamming, voice deterioration, and other problems affected the quality of the class. A teacher said more students were possible to be late for the class, which mean more time was wasted to ensure all the students had been in the online class. Therefore, in order to ensure the smooth flow of the network, teachers had to turn off some functions, such as students' videos, microphones, and even comment areas. It was no strange that the interaction between teachers and students had been decreased to a deficient level. Participants in the interview all reflected that the most annoying thing was that they could not communicate with students frequently, cannot know what they were doing, and cannot observe their expressions and feelings. The restriction to the interaction was one main cause of the weak effect of online teaching.

The second organizing theme was the changed teaching links with two basic themes:

- The way of interaction was changed
- The link of class testing was increased

Related to the last organizing theme, teachers set some new forms of interaction with students to make up for the possible zero communication with students. For the relatively young teacher, they use the internet skillfully to play students' favorite music before class, so as to attract their attention. In the most cases, they use the comment area to know whether students were learning by asking them to type what the content taught accurately. Sometimes, teachers would like to open the specific student's microphone to ask questions. Besides, after class, teachers would spot check the notes of some students or the notes of the whole class about specific content. So the random was the secret. These actions were regarded as forms of interacting with students to some extent, and parts of them were also the methods for teachers to check students' learning effects. There was one teacher in the interview who used the app, which was usually used to collect the questionnaire with the function to set questions and regulate the answer

time to test the teaching effect and whether the student was truant. However, some students were still good at playing petty, tricks which made the teacher helpless.

Pan: With the development of online courses, students were tired of coping. For instance, when I asked a student to answer a question and sent a request to connect to his or her microphone, he would say that the network was not good.

The third organizing theme was a more critical parental or the guardians' role with one basic themes:

- It was more difficult for teachers to manage students directly, and online teaching cannot lack the cooperation of parents or guardians

Most participants mentioned that junior high school students were not self-conscious, and the self-management ability was not reliable. They liked playing whose attention was easily distracted by the network itself, such as immersed in chatting with others or playing games directly in-class time. When they are in the offline campus and classroom, the network actually is far from them as they are not allowed to bring the smartphones to school. Thus, the period of online teaching seemed to give the students a lot of opportunities to use the Internet and do what they want. Also, teachers did not know what situation students were in class, and even if they confirmed that the student did not listen carefully, they had less experience about how to handle that in the case of that they cannot stop them face-to-face in time especially the student had some excuses for that. To manage the students through the Internet, teachers most likely to ask students' parents or guardians to supervise or manage them, while most of the parents or guardians needed to work outside after the resumption of work and production, so the students were in the state of being an unsupervised condition to some extent. Whatever the early reading, having the online classes or handing in the homework, teachers all needed students' parents or guardians' cooperation to urge students to abide by school rules. Of course, there were some contradictions or circumstances beyond the teachers' control.

Lei: I would urge the parents in the Wechat [an app] group to wake up the students who did not attend the early reading. I even called the parents to get students up, which hampered my instruction to other students.

Yan: There was a parent who asked me why I still gave the review class and told me that some famous private schools had begun to teach new content for several weeks, and was not that the public school was of great casualness? I was a little angry at that time. The education bureau made it clear that schools cannot teach the new content. What could I do? I was only able to do what the leaders arranged.

The fourth organizing theme was the reduced teachers' teaching self-efficacy and enthusiasm with two basic themes:

- It was more difficult to motivate students
- Teachers' enthusiasm for teaching was reduced

During the period of online teaching, teachers found it a hardship to motivate students and they did not know how to do that and inspire what under the condition that students became lazy and lacked the peer effect and learning atmosphere. Also, one participant said she became lazy during the outbreak because there was no working atmosphere at home and it was uncomfortable to use mobile phones to collect and grade homework. Despite the difficulty of encourage students which gave teachers the sense of powerlessness and helplessness, teachers had come up with new approaches to do that.

Qi: There was no way to motivate students due to the fact I did not know which student did better. As a result, I could only praise the student who arrived the virtual room first.

Lei: There were more students asking questions after class. I believed it was a good thing because if more and more students would ask, then the learning atmosphere would be better and better. Thus, I would give a notice of praise to the student who ask questions in our chatting group.

The fifth organizing theme was the increased workload and working pressure with two basic themes:

- Data statistics and after-class contact increased teachers' workload
- Examination oriented and the publicity of the class were the reasons for teachers' increasing pressure

Although the workload of preparing lessons was decreased, when teaching online, teachers had other work to work on, which was more trivial and frequent. The most prominent point was statistics about daily lessons' student's attendance, which occupied teachers' lots of time, even on weekends. They had to do the statistics to check the lists about who escaped from the class and whether they arrived late or leave early. What bothered teachers most was that they were ordered to follow up and find out why students were absent. All these data were required to be reported to the school managers who would also patrol each online class to check the attendance of students by themselves. Just as Zhen said, although it was no need for teachers to go to school, the time and place were more flexible, yet the data simply had brought too much workload, which drove me crazy. The situation of my class is quite special because there are many students who do not study actually and whose families are poor. For those students, it was not easy to carry out online learning. As a result, many students had fallen behind, and I needed to make statistics every day. My school adopted an integral system like calculating one point for handing in homework and two points for doing a good job.

Besides, students asked more questions after class than before, and because of COVID-19, students had to get along with their parents for a long time, which made the parent-child conflicts happen more frequently; consequently, teachers needed to deal with that more often than before.

Wang: During the online teaching, students could ask questions at any time when they needed teachers' help. It was not good for the teacher to not reply with seeing it, I considered. For me, I should respond to students' questions in time while students were afraid to go to the office to ask some questions before.

Lei: On Wechat or QQ [an app] chat, typing would not be very serious, which was influenced by the network style. For example, sometimes, when students asked questions, and I answered that we would like to send emoji to each other. I felt our relationship was more to friends, less severe than before.

In the home-based teaching process, some teachers in interviews expected to return to school as soon as possible. The effect of online teaching was not satisfactory, but the examination was impossible to disappear. The academic achievement was still the requirement of teachers and the screening of students to enter high school. However, students did not feel the pressure and take the online learning seriously, which made teacher helpless and stressful. Also, teachers' virtual classrooms seemed to expose more under the supervision and watching of school managers and colleagues, which had brought pressure to the teacher. I could not have the capability to know which one was the school leader, and each class became an open class that all the colleagues could enter your class, some participants said.

4.3. Online teaching is an emergency strategy

The final thematic network is the reflection about the experience of teaching online when returning to the physical campus.

The first organizing theme was unrecognized video lessons with two basic themes:

- Online classes do not mean officially term begins
- Online classes have added extra and repetitive work to the present

As the epidemic has been brought under control on the whole in China, teachers and students have returned to school after experiencing several months' online teaching, which was the first time for all the participants. When was asked about how they perceive online teaching now and what are the influences of that time on the present, most teachers in the interview reckon the traditional face-to-face teaching cannot be replaced by the online teaching,

which is considered as a supplement for the brick-and-mortar classroom teaching. Teachers in the interview are more likely to call online teaching video course and do not take the online teaching as school begins; instead, it is more like a helpless act forced by the circumstances. Therefore, online teaching dose not obtain the formal and regular status like offline teaching. Even more, it is recognized as meaningless since what has been taught during that special period is being taught again, which has increased the burden on teachers. Because students have become lazier and sluggish than before who see they have all learned the contents being taught once again, and they have mastered that. Nevertheless, in the beginning, an examination which was to test the effect of online learning, their scores were very terrible. All these influences mentioned above have bred the complaints from teachers, though they cannot change the things that happened.

Yan: The epidemic has lasted for at least two months, which has adjusted students' way of learning, and they have become more casual. Back in school, teachers have been spending some time correcting the students' study habits. Personally speaking, I think online teaching is mere with weaknesses but no strongpoints.

The second organizing theme was the improvement of the teaching technology with two basic themes:

- Online teaching let me master more teaching technology, but more training about online pedagogy is on demand

- The normal classes are ought to be recorded as the electronic video resources

Although online teaching has brought some troubles to teachers who have already returned to the regular life of teaching, it still performs as an abrupt and extraordinary event which give teachers an opportunity to ponder over the teaching he or she took for granted and also the way of teaching in the near future. In the interviews, being customer service staff and the nanny was considered to be the appropriate roles for online teachers. Besides, online teachers were also seen as the debt collectors in the case of collecting homework. For that vivid metaphors, teachers stated that they answered students' questions whenever the student asked. They were responsible for waking students up despite in an indirect way, and they could also act as the helpless creditors. Of course, they uplifted their skills of using technology in each role and during the whole online teaching, but it is far from enough for them. Two of the participants noted that technology was not the essence; what teachers need is how to stimulate students, design an engaging lesson, and so forth.

Also, some participants suggest that schools should not ask teachers to record the lessons or give online teaching without any provision of existing video resources. School directors ought to make the plan of recording the traditional classroom lessons and put them on school's platform as one kind of digital resources. What is more, it is a practical way of promoting education equity on a large scale, one teacher believes.

Wang: It has little influence on teaching methods and the content arrangement. I have an idea that uses the software used during the online teaching to record my regular classes as a class resource for me so that students who are absent in the class can make up for the missing class by watching the record in their spare time. In the past, when cases like that, it is always difficult to coordinate the make-up time for the student and me.

5. DISCUSSION

The focus of this paper was to examine and understand the impact of online teaching on middle school teachers' teaching in the COVID-19 pandemic. Emerging from the data are three thematic networks exploring the transformation happening at three stages in a chronological sequence. It was obvious that each of the networks was intrinsically relayed to one another, which displayed the salient pattern in the generic networks composed of the three sub-networks.

In the first stage of pre-perception and preparation for the upcoming online teaching, being an online educator was an abrupt thing without any participates' predicting. Collectively, the study revealed that teachers were unwilling to teach online. Some quantitative studies found teachers who opposed were in the minority (Yang, 2020; Song et al., 2020). The opposition of online teaching is no surprise with the fact that most public and private

elementary and secondary schools solely adopt the traditional face-to-face instruction, although technology has owned a supreme role in the campus. The MOE has issued the notice of the "educational informatization 2.0 action plan" in 2018 to accelerate the realization of educational modernization with aims like teaching application covering all teachers, learning applications including all school-age students, and digital campus construction covering all schools. The level of information application and information literacy of teachers and students are generally improved (the MOE, 2018). Besides, the study found that teachers do not know to teach online quite well, and held more concerns than reasonable expectations. Similar evidence could also be found in a survey of online teaching knowledge of teachers from 23 provinces, which found that 47.6% of teachers did not know much about online teaching (Song et al., 2020). What seemed strange in the result is that except for the subject and specific contents, which were hard to teach. Whether offline or online, lacking necessary training and idle teaching resources survived together, which was seemingly illogical, especially there were much more high-quality resources that were free to use for teachers. The most important point may be that the incomplete understanding of online teaching of which the guidance, teachers moving blackboard, and classroom to the Internet only (Huang, Wang, Wang, Lu, & Gao, 2020). And still following the traditional classroom teaching model (Wang, Wei, & Zong, 2020; Mu & Wang, 2020), which is non personalized and score-based. Thus, the teacher would prefer to use the exam-focused resources and give up other costly resources that have nothing to do with exams on the surface.

After the first stage's inadequate preparation, teachers met tensions during the process of giving online lessons, which is the core of the whole network. Among all the factors that can bring challenges, the difficulty of interaction between teachers and students is the core. Teachers in face-to-face classrooms work in real-time, close, physical proximity to their students and capitalize on those conditions as they create activities and assessments for students (McAllister & Graham, 2016; Kearns, 2012). While in the online setting, teachers have become more passive and helpless, so they need to communicate with parents who are demanded to be the monitor during students' learning more often. This can be supported in other research findings (Zheng & Wan, 2020; Zheng et al., 2020).

Additionally, it is worth noting that although in terms of time and place, teachers have become freer than before, yet this kind of freedom does not bring teachers more leisure time. On the contrary, teachers' workload increases sharply. The main reason is the trouble of data. Advocates related to this has been stated that giving full play to the advantages of timeliness, regularity and personalized feedback of online practice, accumulating and analyzing the key data in the learning process of students, and trying and exploring the precision teaching based on big data learning analysis (Liu, 2020). It is, of course, one advantage of online education, but what we should also pay attention to that data also makes teachers' work trivial and requires teachers to invest a lot of time.

Besides, for the classroom itself, teachers do not feel more freedom than before. On the contrary, due to the anonymity and more apparent openness of virtue class in the network, teachers' classrooms become more and more easily monitored and displayed. This kind of scrutiny from leaders, colleagues, and parents brings more constraints and pressure to teachers who should have a relatively free and relaxed teaching environment and teaching autonomy. The result corresponds to the study indicating digital training and disciplining are more comfortable to implement than offline (Cui et al., 2020). That is to say, on the one hand, the superficial freedom and multi-function brought by the technology cannot overcome the issues such as students' lack of motivation, teachers' inability to manage students directly, and the reduction of interaction between teachers and students in the classroom. On the other, it has increased online teachers' psychological burden and workload (Kaden, 2020; Archambault, 2010).

All in all, the factors mentioned above and other emerging themes in second networks have a collusion on online educators, which performs like shackles to hinder teachers' transformation. In the last stage, this study reveals the impact of online teaching on teachers' present teaching and the reflection left by this experience. The result shows that teachers are not satisfied with online teaching and do not view it as a regular way of instruction, which has been supported by Wang's (2020) study that online teaching was an emergency distance education to deal with the epidemic situation. Not only because the teaching effect got worse, but also teachers have to take time to correct students' learning habits. Similar statements can be found in previous studies (Zheng et al., 2020; Cui et al., 2020). However, teachers have made some changes both in their online teaching to try to meet the challenges and in regular teaching and are still thinking about how to develop their online and offline pedagogical professionalism. This is an

unfinished process of transformational learning during the COVID-19 outbreak, which still needs the support of a more systematic teacher education and training (Zhang et al., 2020).

6. Conclusions and implications

The massive COVID-19 online learning experiment brings new insights and cautionary tales about what works in education (Kaden, 2020). Qualitative methods of thematic networks were used; the study found that the impact of online teaching on China's middle school. Teachers' teaching began with reluctance, and the core was that in the process of online teaching. There were barriers in the aspects of teacher-student interaction, management, and incentive of students, online teaching effect, parents' cooperation, data burden, supervision, and management similar to "panoramic view" and so on. In this regard, although teachers' teaching consciousness and self-efficacy were eroded by the virtual space, they still looked for methods to adapt to online teaching like adjusting the teaching links and the way of encouraging students. It can be said that teachers learned and grew in practice without training. Although, after returning to campus, teachers feel that online teaching is meaningless, the teaching effect is weak, and they have to work repeatedly. Yet, some of the technologies used in online teaching have been continued. Also, after such a unique transformation, teachers have sprouted the idea of future education and teaching. More importantly, teachers believe that technology is not the key to online teaching, but the pedagogy and specific teaching designs and methods of online teaching. So, for both the participants and the online teaching situation in China as a whole, continuous transformation learning will continue.

As for the pedagogical implications, previous studies have, to varying degrees, emphasized the protective effects of network fluency and online platform flexibility on online education (Hu & Xie, 2020; Zheng & Wan, 2020). This study also found that the network is the paramount factor affecting the interaction between teachers and students. It is also the factor that teachers are relatively powerless to change, in addition to making students turn off video and audio. Hence, one of the basic implications of the current study is a call for the further construction of information superhighway and online education platform for basic education.

More importantly, many studies on online education during the COVID-19 outbreak have revealed that there is a lack of training for teachers in this epidemic while calling for future online education and training (Song et al., 2020; Cui et al., 2020). Although research has shown that most online teachers come from traditional classrooms, with the growth of online teachers' demand, more online educators will be recruited directly from undergraduates (Archambault & Crippen, 2009). Therefore, this study suggests that teachers' pre-service education and on-the-job training should be paid more attention to online teaching and blended teaching. Only by clarifying the essence and key of online education can we fundamentally reduce the low self-efficacy and the rebirth of examination-oriented education in the transitional period. In this regard, to build a national online teacher education system has been advocated, which requires teachers to have professional knowledge, professional ability and professional ethics of online education and teaching, as well as the full professional attributes of ethics, learning, discipline, and teaching shown by teachers (Zhu, 2020).

As a qualitative study, the results are limited to a specific context and cannot be regarded as an overall situation, which is the limitation of this research. For the future work, on the one hand, summarizing and exploring the situation and problems of online teaching during the COVID-19 crisis through different methods is still required. On the other hand, the forced shift to online teaching during the epidemic may be a new and active catalyst for blended education in the future (Kaden, 2020). Therefore, researchers can inquire about the possibility of developing blended teaching after the two transitions from offline to online and then back to offline.

Acknowledgements

The authors like to thank all participates for sharing their experience of transformation during the COVID-19 pandemic for this study.

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The Role of School Special Educator During Long Therm Interruption of Present Education at Schools due to Corona-Crisis

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Abstract

In the article, the author focused on the role of a school special educator during corona-crises. She describes the individual coping strategies that can help students overcome the crisis and stressful periods. She also interprets the possibilities of educating students with special needs in distance form of education. She focuses mainly on the positives of online learning. Based on individual theories, she formulates proposals for strategies and specific procedures, through which it would be possible to provide support and quality education for students with special needs even during the interruption of present education process.

Keywords: school special educator, corona-crises, coping strategies, pupils with special needs

1. INTRODUCTION

The Corona-crisis affected the whole society and brought many challenging and unexpected tasks and problems. Many changes have taken place at schools, to which all actors in the educational process, have had to adapt without prior training. Most likely, these changes will affect the entire school system in the long run. In stressful situations, it is important to keep calm and balance and not to panic. A crisis is a period saturated with experiences, interesting things but pain as well. It is usually defined as a certain part of the continuity of the human being. It is also referred to as a necessary phenomenon of human civilization. The crisis can be addressed by setting a new paradigm and starting the level of progress (Weizsäcker, 1992). At the same time, however, the crisis is subjectively perceived as a threatening situation with a dynamic charge and the potential for great change. Without it, it would not be possible to achieve any shift or progress. Our educational system is exposed to great challenges during this period. However, these challenges can also lead to a positive change. It is important to learn from the situation and create a new effective system of education, which will work even during difficult times. In Slovakia a unique situation has developed. We were compelled to get a chance in the shortest possible time to introduce distance learning technologies that have already been developed, but have not yet been used on a large scale.

1.1. Crisis – new possibility for education

Burden, stress, problematic or crisis situations are concepts that are in some way exceptional in a person's life and place extraordinary demands on him. Thom (1992) describes human thinking in connection with the phenomenon of crisis. According to him, the society focuses mainly on what can be easily predicted, because it is associated with a certain continuation of previous developments. If there is a sudden developmental break, a sharp qualitative leap representing a certain discontinuity, it is perceived as something undesirable and inappropriate. According to Thom (1992), it is necessary to deal with these events. Every unexpected transition is of great importance for the development

of any events. We can understand this change in a negative but also in a positive sense. In such cases, there are many possibilities for a new world order. In this context, Vodáčková (2007) defines the crisis as a change in the regulatory formula and regulatory ways of human action. The crisis is both, a danger and an opportunity. Vymětal (1995) describes a crisis as the result of a collision with an obstacle that people are unable to overcome on their own.

Caplan (1964) maintains that the solution to the crisis depends on three basic factors:

1. Realistic estimation of precipitating events.
2. Presence of a support network: a support network includes emotional, evaluative, informational and instrumental support. In order for the support network to be effective, a certain synergy between providers, recipients but also specific circumstances, is a condition. (Špatenková et al., 2017).
3. Existence of coping strategies: in times of crisis (but also outside it), it is important to develop coping strategies. These are ways and forms of behavior that allow us to adapt to the demands of life. Every individual is naturally able to find ways that help him in times of escalating crisis. One of the most important strategies is the ability to help oneself, which needs to be learned from an early age.

The sudden impact of the crisis has forced many teachers into virtual classrooms, unprepared for the demands and expectations of this new reality. Teachers and schools have been creative in adopting a variety of technology. This crisis has also shown that Slovak education system is lacking in terms of digital preparedness. This issue pertains to most countries globally who are trying to transfer learning from classrooms to online. Many teachers are not technology savvy and are forced to adapt to conduct their classes online. One of the unintended consequences is the mental well-being of children during this crisis. There is a need to support children to ensure their well-being and reduce anxiety during an emergency. Children are restricted to stay at home during this period. Therefore, it is important to ensure that there are strategies to help them cope with this “new normal” so that they could express their feelings on this new experience

1.2. Building coping strategies at schools

Today's Slovak education system has long been criticized for focusing only on the encyclopedic knowledge of students and insufficiently developing their affective skills or competencies necessary for life (life skills). In today's situation, schools should not focus only on taking over the curriculum contained in educational standards. More than ever before, it is also necessary to focus on how real experience can be used in the form of the ongoing crisis. How to teach students to select the information presented, to create critical thinking and resistance to hoaxes. Moving learning to online space also requires strengthening children's information literacy and digital skills through media education. Many experts are aware of the absolutely essential need to adjust the content of educational standards to take into account the importance of the curriculum for further education and also the usefulness for the development of competencies. However, this adjustment should not be implemented only quantitatively but especially qualitatively (i.e. to combine educational standards into larger units, or to integrate the curriculum of several subjects). At the same time, it is important to include programs related to coping with stressful situations (coping competencies). Each individual cope with the burden individually according to their abilities and possibilities. Repetitive or similar stressful situations are solved mostly in a learned way that has worked for the individual and brings him a return to balance. Currently, there is a growing trend to determine (identify) appropriate strategies (ways) of load management. When defining the concept of load management, it is not complete in the professional literature compliance. The word "coping" has its roots in the Greek word "colaphos". It's a deadline from the box (direct blow to the ear). In general, it can be understood as an attempt to solve something, to handle a crisis, conflict or dispute.

Coping strategies such as workload prevention are increasingly becoming a topical issue. Coping strategies are an important stabilizing factor in solving problem situations. Coping strategies mean a specific way of managing the load. The ability to effectively select an appropriate coping strategy facilitates adaptation to incoming changes and simplifies coping with stressful situations. It has been shown that in dealing with such negative emotions as anger and rage, the uncontrolled coping with the situation is not effective. Blurry forms of coping act only for a short time, but as a long-term perspective, they can have a rather negative impact and the whole situation may worsen.

Coping strategies are certain practices that are useful and enriching. These strategies include:

1. Self-confidence and trusting other people.
2. Contact, understanding and acceptance own feelings and needs. Active coping with emotions and problems and their acceptance. Being able to recognize the symptoms of fatigue or disorganization helps maintain integration and control over daily activity.
3. The ability to share own feelings. Ventilation of positive and negative feelings. Actively seeking help from others, not introverting oneself.
4. Awareness of one's own boundaries and limits. Creating your own support system.
5. Crisis knowledge, good information and critical thinking. Active approach to reality and ways of finding relevant information.
6. Ability to effectively plan and organize time. Dividing the crisis situation into parts and their gradual solution. Assignment of tasks.
7. Ability to use one's own experience, the experiences of other people and the patterns of collective action.
8. Ability of relax.
9. Resilience. Resilience is a person's inner strength and ability to cope adequately with difficult life situations (Patterson, 2012). According to Szobiová (2013), it is a matter of successfully overcoming adverse events without much harm and continuing positive adaptation in the context of change. The ability of resilience allows a person to respond to the situation in a new, adaptive way, to respond flexibly to dynamic requirements and to act appropriately and effectively. It is a process rather than a personality factor. Resilination implies growth and a person becomes stronger after coping with the crisis (Slezáčková, 2012).
10. Inspiration by film or literary stories. Positive patterns method.
11. Creativity and imagination. Flexibility and willingness to change. Proactivity.
12. Positive attunement and optimism.
13. Perseverance and ability to set realistic and achievable goals.
14. Faith and hope. Understanding the meaning and purpose of the crisis. Hope that it is possible to overcome the crisis and learn from it.
15. Ability to create material and financial reserves. The crisis will hit people especially if they do not have sufficient financial reserves.

The school places high demands on the student's personality, which then also plays an important role in coping with the workload. Load management and stress management In this situation, activities are extremely important for the student. It is possible to contribute to the alleviation of stress in schools by identifying coping strategies that students use and then practicing other coping strategies. To reduce stress and eliminate burdens can also be contributed by setting appropriate requirements and expectations taking into account the abilities and interests of the child.

1.3. Distance education and its positives in the context of pupils with special educational needs

Teachers are natural partners in developing resilience within the school ecology. Rather than relying on sporadic visits of outside experts, it is better to work with teachers to develop their coping skills and empower them to help deal with students' social and emotional needs in the aftermath of corona-crisis. The primary focus on the online learning platforms seems to be mostly on syllabus in school. The purpose of online learning is to ensure that teachers have covered all the topics in the syllabus by the end of the academic year. This corona crisis has shown us that digitization and globalization are very much embedded in our society. But the traditional rote learning and cramming of knowledge for examinations would not prepare our pupils for the future. Furthermore, education is also not just about academic knowledge, it is about training our children in a holistic manner. This crisis is an opportunity for us to reflect and make changes to our education system. Education needs to address the reality that children are living in. Good efforts are being made to transfer lessons online. However, there seems to be lack of teaching on public health education. Education must address the "new normal" that our children are experiencing. The idea that teachers should adopt digital technologies in a favorable environment is not new. It is the teacher's job to establish the approach of the one or the all, exercising an education for life. Due to the forced quarantine, the coronavirus gave teachers and schools room to think about what curriculum is necessary and which is redundant. They also had to think about what the distance teacher has to explain to the children and what can be easily found on the internet. Many were so excited that they already know that they will transfer the experience to the next years.

As a result of the corona-crises, education in schools is carried out mainly by distance learning. The most widespread form is online education, but also education by means of television, post (mail) or telephone. However, this form of education raises many fundamental and important questions and challenges. It is not possible to adequately assess how our schools are prepared for this form of education. Whether teachers, students but also parents are ready and whether they have sufficient skills, technical equipment and support. In 2018, in Slovak schools we educate more than 41,000 children with special educational needs. In connection with the crisis situation, other educational needs may also arise. The development of coping strategies is extremely important to develop of students with special educational needs. These children tend to be demotivated, tired and easy to give up. However, if they are aware of the problems they have (problems with learning, attention, organization of time and space, emotional problems, behavioral problems, etc.), they can accept these problems and learn to live with them. At the same time, however, they need to be shown that, although they have difficulties in some areas, there are areas where they succeed. This increases their self-awareness, self-acceptance and, in the long run, their self-confidence and self-confidence. The coping strategies follow each other and can be gradually developed. Their presence is a more important determinant of a child's success than school achievement, academic knowledge or high IQ. As these attributes evolve over time, it is important to begin building them as soon as possible. Children begin to internationalize them and later apply them directly to life.

The use of online technologies in education brings with it many positives also in the context of students with special educational needs. Parents struggling in the school system to adapt the curriculum to their children's individual needs often feel that time can be used more efficiently at school. Even teachers who have so far refused to teach online and create e-learning materials are forced to reconsider their approach due to situations. This makes it possible to adapt and individualize teaching to the needs of pupils and to remove barriers to learning. If e.g. a student with attention deficit disorder does not manage to take over the curriculum together with the class during school education, thanks to e-learning materials he / she can also return to it at home. Parents have an overview of what their child is taking over at school and can, if necessary, help him more effectively. Pupils with learning disabilities also have texts available in electronic form and can use special reading programs for dyslexics to read them. At the same time, the stress of time-limited tasks is erased and space is created for self-development, self-study and elaboration of various domestic projects. Children with ADHD often require more frequent breaks, shorter hours, and unlimited time tests. Pupils with learning disabilities often benefit from visual aids, assistive technologies and audiobooks. Online learning can be incredibly beneficial for many children with special needs.

At the same time, the current crisis situation forces us to think about the content of educational standards. It demands and adjusts the scope of educational standards to take into account the priority of the subject and the indicative burden of the student at a given level of education. The scope of the current content of education does not take into account the current situation, which may lead to inadequate demands on students and thus overload. At the same time, this can have more significant negative consequences for the backwardness of children with special educational needs. A more optimal solution seems to be a greater interconnection of the contents of related objects into functional units or areas. These areas will help students to perceive the connections between the various contents of education and at the same time create more space for learning through their own experience. Such an approach can support the development of competencies, the functional development of various literacies and thus support the perception of school education as learning for real life. In the curriculum, it is appropriate to create a mutual context and relationships between concepts that students have to learn. It is difficult for students with special educational needs to learn things that are not interrelated. At the same time, it is necessary to involve emotions in learning and teach students to accept and create feedback. In this way, the role of teachers may change in the future from the ordinary communication of information and knowledge to accompanying students in learning about the world and developing their abilities and positive qualities. Online education respects the individual pace of students and builds on existing skills and knowledge. It encourages student creativity through homework and home projects, while introducing new learning opportunities in a safe and supportive environment.

1.4 The role of school special educator

It is known that one of the great causes of a very difficult situation in Slovak education is the lack of innovative teachers - personalities. The exceptional ones that work in our schools should be given adequate space. They should become integrative forces in the educational process in schools. One of these “school important personalities” are school special educators. The position, work and success of a school special educator is still being formed, it is sometimes misinterpreted and underestimated. Although a special educator represents only a partial problem of

solving educational problems, it is necessary to pay increased attention to his role, increase his professional and social status and help his development and growth. School special educator participates in the teaching of pupils with special educational needs in individual classes according to a set timetable, which can be modified according to the current situation. A school special educator can work with a disabled student outside the classroom (if the student does not participate in a particular subject and instead includes teaching another (special) subject, if he prepares the student for the next lesson - repeats learned concepts, explains new concepts in advance, introduces new curriculum if it requires individual application of special methods and procedures). The school special educator not only provides professional service in the teaching process, but also monitors the psychological development of the student with special needs and social relationships in the classroom, teaches all students to understand and respect the differences that make people different from each other. Explain to all students the nature of disability so that they understand the conditions under which their disabled classmate can learn with them and participate in joint activities, trying to eliminate false ideas and prejudices about the personality traits and lives of people with disabilities in society. On the other hand, school special educator helps a student with special needs to adapt to the environment in a regular school. School special educator, in cooperation with the teacher creatively applies various methods to create good social relationships, a friendly atmosphere and class cohesion. He also establishes cooperation with the parents of the students with special needs. A prerequisite for good cooperation is mutual information about learning outcomes on the basis of personal meetings or written contact. Another of his task is to modify the classroom environment. He proposes the interior classroom design so that it is in accordance with the special educational needs of the pupils, but also supports a pleasant atmosphere. The class should be clean, safe, well lit, adequately decorated and colored.

1.5 Forms of work of the special educator in the distance education

The entire education system had to be urgently reorganized to adequately respond to the challenges related. This had impacted the learning opportunities of students especially those with special needs. And this also opens up space for school special educators, who can play the role of counselors, helpers or mediators in the whole process. They should continue to provide support for the removal of barriers to education. Based on previous findings, we formulate proposals for measures through which it would be possible to eliminate problems and thus ensure equal access to education even during the interruption of full-time education.

At the same time, during this period, the role of school special educator is changing. As they cannot work with children in presence, they still can strengthen the weakened functions of students with special educational needs, and can (and should) strengthen their coping strategies. The help and support of all participants in the educational process during the crisis must be systematic and regular. The following steps describe how it is possible to help students with special educational needs and their parents overcome an exceptional situation and what, within their competencies, can be implemented by a school special educator.

1. Regular communication with the parents of a pupils and students with special educational needs:

- Providing information and practical assistance.
- Providing emotional (understanding, hearing) support and focusing on opportunities and services.
- Communicating information from school management and teachers.
- Advising parents where it is possible to find information about the development of the crisis situation.
- Sharing useful links, websites, book resources, educational activities a focused in helping students with special educational needs.
- Creation of a regular online counseling system and webinars for parents of children with special educational needs.
- Creating suggestions and advices on how parents can support their children's education and how to create suitable learning conditions for them.

2. Communication and exchange of information (about pupils with special educational needs) with teachers:

- Preparing comprehensive starting points for the provision of educational activities for students during distance education.
- Providing teachers with support in adapting educational activities to the individual and special educational needs of pupils, in creating or modifying teaching materials, as well as in ensuring the availability of compensatory aids and tools.

- Helping teachers to reduce curriculum and adapt the content of education during school breaks.
- Consulting the forms and methods of assessment of students with special educational needs.
- Explaining to teachers the adjusted goals and content of education and the division of educational areas into main and complementary in relation to students with special educational needs.
- Organizing regular online chats or video conferencing calls aimed at sharing information and mutual methodological help and support.

3. Cooperation with school special educators from other schools and exchanging effective strategies and working procedures:

- Cooperation and mutual support of school special educators will enable to cope with difficult conditions for teaching during distance education.
- It is appropriate to include regular online chats or video-conference calls aimed at sharing information and mutual methodological help and support.
- Collecting examples of good practice and creating recommendations and procedures for working with students with special educational needs during emergencies.

4. Finding a suitable way to maintain personal contact with students with special educational needs.

- Mapping the possibilities and barriers of students with special educational needs in connection with online education.
- Providing sufficient time for adaptation.
- To support the socialization of students also in the distance form.
- Organizing group online chats and video calls with students with special educational needs.
- Creating a system and schedule of online interventions.

5. Creating an online set of educational materials for students with special educational needs:

- Creating tasks focused on developing digital skills.
- Adapting the curriculum that needs to be taken over to distance learning.
- Within the framework of existing electronic resources, select suitable learning materials for students with special educational needs.
- Creation of a set of worksheets, educational materials and proposals for activities classified according to individual special educational needs.
- Creating video lessons and webinars available online.
- Alert students well in advance of broadcast films and television programs intended for self-education.
- Offering students practical help during a crisis.
- Providing information that will lead to dealing with the impact of events.

6. Creating a program focused on strengthening and developing students' coping strategies:

- Encourage the ability to express one's own needs and concerns.
- Strengthening the feeling of security.
- Develop the ability to organize work and the ability to actively rest (alternating work and rest), effective use of time.
- Creating a list of suitable fiction and films (used to identify students with the main characters and look at their system of coping strategies).
- Develop critical thinking, teach students to face hoaxes and misinformation.
- Strengthen resilience, the ability to identify and accept one's own feelings and emotions, ventilate negative emotions and fear in an acceptable way.
- Support the ability to ask for help.
- Strengthen self-confidence and trust in others, hope and faith,
- Develop creativity and flexibility in appropriate ways.
- Encourage positive attunement and optimism.
- Identification of pupils' talents, skills, talents and individual interests.

- Development of financial literacy.

2. Conclusion

Our education system needs to change with these new conditions according to corona-crises consequences. Let us not lament on whether we are ill-prepared for this pandemic, but to look to creative solutions and collaborated efforts that are required to adapt and change the future. This is an opportunity to rebuild our education system. The transition to distance education has significantly affected the educational process of children with special educational needs. Under normal circumstances, these children are provided with various compensations in schools - from the adjustment of conditions, environment, content, methods and forms, through teaching aids to the presence of support staff. Based on our findings, as well as an overview of measures from other countries, we formulate proposals for measures through which these problems could be eliminated and thus ensure equal access to education even during the interruption of full-time education. This may have more significant negative consequences for the backwardness of the group of children who do not have adequate conditions for distance learning. Teachers do not have guidelines and instructions regarding the prioritization and reduction of the curriculum. At the same time, they lack recommended assignments that they could use for various forms of distance education. The available educational materials form a confusing set of resources and are not clearly linked to educational standards. Additional support is often needed for children without officially reported special educational needs. In addition, in the context of the crisis and quarantine measures, it can be assumed that more pupils will be at risk of deteriorating mental health. This could be a good time to engrave learning outside of the classroom and help children to explore areas that they are curious about. Curiosity is the source of creativity and critical thinking. Learning outside of the classroom would give children the freedom to explore things beyond their textbooks and build life skills and effective coping strategies.

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The Impact of COVID-19 beyond Health and Healthcare: A Focus on Football Events, Physical Activities, and Social Development in the CONCACAF Region

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Abstract

The ramifications of responding to SARS-CoV-2 outbreak extend well beyond the health response and consequently, having significant impact on a range of sectors including the ecosystem and the economy, as well as on religious and cultural concerns, football events and physical activities, and human well-being.

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Issues relating to livelihood, employments, food security, poverty, domestic violence, social networks and recreation warrant increased attention in relation to the growing effects of current public health measures to curb the rates of infection, and mitigate the spread and severity of COVID-19.

Keywords: Non pharmaceutical interventions, COVID-19, Football, CONCACAF, Social development

1.1 Introduction

The COVID-19 pandemic is a major global health threat that has created an unprecedented colossal disruption of lives and livelihoods since the outbreak began in Wuhan, China, December 2019. As of July8, 2020, there have been 12,051,566 cases, 6,970,295 recovered and 548,840 deaths confirmed worldwide. Global spread has been rapid, with 215 countries now having reported at least one case.

The last time the world responded to a global emerging disease epidemic of the scale of the current COVID-19 pandemic with no access to vaccines was the 1918-19 H1N1 influenza pandemic. In that pandemic, some communities, notably in the United States of America (USA), responded with a variety of non-pharmaceutical interventions (NPIs) - measures intended to reduce transmission by reducing contact rates in the general population [1]. Examples of the measures adopted during this time included closing schools, churches, bars and other social venues. Cities in which these interventions were implemented early in the epidemic were successful at reducing case numbers while the interventions remained in place and experienced lower mortality overall[1]. However, transmission rebounded once controls were lifted.

Whilst our understanding of infectious diseases and their prevention is now very different compared to in 1918, most of the countries across the world face the same challenge today with COVID-19, a virus with comparable lethality to H1N1 influenza in 1918. Two fundamental strategies are possible [2]:

(a) Suppression. Here the aim is to reduce the reproduction number (the average number of secondary cases each case generates), R, to below 1 and hence to reduce case numbers to low levels or (as for SARS or Ebola) eliminate human-to-human transmission. The main challenge of this approach is that NPIs (and drugs, if available) need to be maintained – at least intermittently - for as long as the virus is circulating in the human population, or until a vaccine becomes available. In the case of COVID-19, it will be at least a 12-18 months before a vaccine is available [3]. Furthermore, there is no guarantee that initial vaccines will have high efficacy.

(b) Mitigation. Here the aim is to use NPIs (and vaccines or drugs, if available) not to interrupt transmission completely, but to reduce the health impact of an epidemic, akin to the strategy adopted by some US cities in 1918, and by the world more generally in the 1957, 1968 and 2009 influenza pandemics. In the 2009 pandemic, for instance, early supplies of vaccine were targeted at individuals with pre-existing medical conditions which put them at risk of more severe disease [4]. In this scenario, population immunity builds up through the epidemic, leading to an eventual rapid decline in case numbers and transmission dropping to low levels.

The strategies differ in whether they aim to reduce the reproduction number, R, to below 1 (suppression) – and thus cause case numbers to decline – or to merely slow spread by reducing R, but not to below 1 (mitigation).

It is important to note that given SARS-CoV-2 is a newly emergent virus, much remains to be understood about its transmission. In addition, the impact of many of the NPIs detailed below depends critically on how people respond to their introduction, which varies between countries and even communities. Last, it is highly likely that there would be significant spontaneous changes in population behavior even in the absence of government-mandated interventions.

Non-pharmaceutical Interventions (NPIs)

In the wake of SARS-CoV-2 outbreak, many countries' government and health agencies were tasked with the responsibility to implement strategies to slow the spread of COVID-19. Below are the five different non-pharmaceutical interventions (NPIs) implemented individually and in combination (Table 1). Two of the interventions (case isolation and voluntary home quarantine) are triggered by the onset of symptoms and are implemented the next day. The other four NPIs (physical distancing of population over 70 years, physical distancing of the entire population, stopping mass gatherings and closure of schools and universities, football clubs and

academies) are decisions made at the government level. To flatten the curve, mitigation strategies were implemented for two months, other than physical distancing of population over the age of 70 which is assumed to remain in place for at least one month longer. Suppression strategies are assumed to be in place for at least four months or longer.

Table1. Summary of Non pharmaceutical interventions implemented

Label	Policy	Description
CI	Case isolation in the home	Symptomatic cases stay at home for at least ten days, reducing non-household contacts for at least 80% for this period. Household contacts remain unchanged.
HQ	Voluntary home quarantine	Following identification of a symptomatic case in the household, all household members remain at home for 14 days. Household contact rates double during this quarantine period, contacts in the community reduce by about 80%.
PDO	Physical distancing of population over 70 years of age	Reduce contacts by about 50% in workplaces, increase household contacts by about 20% and reduce other contacts by about 80%.
PD	Physical distancing of entire population	All households reduce contact outside household, school or workplace by about 80%.
SUCA	Closure of schools and universities, football clubs and academies	Closures of all schools, about 10% of universities remain open. Closures of all academies, about 10% of clubs remain open. Household contact rates for student families increase by about 60% during closure. Contacts outside household in the community reduce by 80% during closure.
SMG	Stopping mass gathering	Mass gathering of fifty (50) persons and below; reduce contact by about 60% in the community
		Mass gathering of two (2) persons; reduce contact by about 90% in the community.

To ensure effectiveness of mitigation strategies against the spread and severity of SARS-CoV-2 outbreak, all the above mentioned non-pharmaceutical interventions were implemented individually or in combination, globally.

1.2 Discussion

The global impact of COVID-19 has been profound, and the public health threat it represents is the most serious seen in a respiratory virus since the 1918 H1N1 influenza pandemic. In the absence of a COVID-19 vaccine, a number of public health measures - so-called non-pharmaceutical interventions (NPIs) – aimed at reducing contact rates in the population and thereby reducing transmission of the virus, have been implemented. The effectiveness of any one intervention in isolation is likely to be limited, requiring multiple interventions to be combined to have a substantial impact on transmission. As previously noted, two fundamental strategies implemented by nations' government health agencies to varying degree worldwide include: (a) mitigation, which focuses on slowing but not necessarily stopping epidemic spread – reducing peak healthcare demand while protecting those most at risk of

severe disease from infection, and (b) suppression, which aim to reverse epidemic growth, reducing case numbers to low levels and maintaining that situation indefinitely.

Football as a sport is a major contributor to economic and social development. Its role is well recognized by governments, including in the Political Declaration of the 2030 Agenda, which reflects on "the contribution sports make to the empowerment of women and of young people, individuals and communities, as well as to health, education and social inclusion objectives." Since its onset, the COVID-19 pandemic has spread to almost all countries of the world. Social and physical distancing measures, lockdowns of businesses, schools and overall social life, which have become commonplace to curtail the spread of the disease, have also disrupted many regular aspects of life, including football events and physical activity. The COVID-19 pandemic has caused significant disruption to association football calendar across the world, mirroring its impact across all sports. Across the world and to varying degrees, leagues and competitions have been cancelled or postponed. The 2020 Summer Olympics and Paralympics were rescheduled to 2021.

The effects of COVID-19 continue to flow through the world's health, educational, financial, and commercial institutions, and the sports ecosystem is no different. Matches and competitions are being cancelled or postponed, disrupting governing bodies, organizers, teams and athletes -as well as the non-stop live sports content we have come to expect. The closure of education institutions around the world due to COVID-19 has also impacted the sports education sector, which is comprised of a broad range of stakeholders, including national ministries and local authorities, public and private education institutions, sports organizations and athletes, NGOs and the business community, teachers, scholars and coaches, parents and, first and foremost, the -mostly young- learners.

As the world begins to recover from COVID-19, there will be significant issues to be addressed to ensure the safety of sporting events at all levels and the well-being of sporting organizations. In the short term, these will include the adaptation of events to ensure the safety of athletes, fans, and vendors, among others. In the medium term, in the face of an anticipated global recession, there may also be a need to take measures to support participation in sporting organizations, particularly for youth sports.

The impact of COVID-19 on football calendar, CONCACAF, North America

On 12 March 2020, the CONCACAF Champions League was suspended with immediate effect [5]. CONCACAF announced that all competitions have been suspended. The CONCACAF council took these decisions with the welfare of everyone involved in mind, and in light of developing travel restrictions and public health guidance. The following CONCACAF competitions were suspended 2020 Scotiabank CONCACAF Champions League, 2020 CONCACAF Men's Olympic Qualifiers, First Round of the CONCACAF 2021 Gold Cup Qualifiers (due to be played in the March 2020 FIFA Window), and 2020 CONCACAF Caribbean Club Shield.

The same day, Major League Soccer was suspended for 30 days [6].

Also on 12 March, the National Women's Soccer League (NWSL), whose season was not scheduled to start until 18 April, canceled its preseason matches, [7] and also imposed a moratorium on team training that initially ran through 22 March[8].

On 19 March, Major League Soccer's suspension was extended to a target return date of 10 May [9]. On 14 April, MLS announced that it was "extremely unlikely based on the guidance of federal and local public health authorities" that they would meet this target, and stated that "our goal remains to play as many games as possible, and while we currently have enough dates to play the entire season, we recognize at this time that it may become difficult to do so"[10].

The day after MLS was initially postponed; all CONCACAF competitions scheduled for the next month were suspended [11].

The 2019–20 Major Arena Soccer League season was terminated early, effective 12 March [12].

The USL Championship suspended the 2020 season on 12 March, for at least 30 days [13].

The National Independent Soccer Association suspended the spring portion of its 2019–20 season on 12 March for at least 30 days [14]. On 27 April, following a second suspension of play, NISA announced it would cancel the rest of its 2020 Spring season [15][16].

Match week 10 of Liga MX, Women's Liga MX, and Ascenso MX took place but as of 15 March, club owners and league executives had then taken a decision to postpone all Mexican football activity until further notice [17]. As of 22 May, Mexican football executives announce the termination of the remainder of the current Clausura 2020 championship [18].

On 10 June, Major League Soccer announced a return to action on 8 July with a mini-tournament at Walt Disney World in Florida, with all matches counting towards the regular season standings.

The impact of COVID-19 on physical activity and wellbeing

The global outbreak of COVID-19 has resulted in closure of gyms, stadiums, pools, dance and fitness studios, physiotherapy centers, parks and playgrounds. Many individuals are therefore not able to actively participate in their regular individual or group sporting or physical activities outside of their homes. Under such conditions, many tend to be less physically active, have longer screen time, irregular sleep patterns as well as worse diets, resulting in weight gain and loss of physical fitness. Low-income families are especially vulnerable to negative effects of stay at home rules as they tend to have sub-standard accommodations and more confined spaces, making it difficult to engage in physical exercise.

The WHO recommends 150 minutes of moderate-intensity or 75 minutes of vigorous-intensity physical activity per week. The benefits of such periodic exercise are proven very helpful, especially in times of anxiety, crisis and fear. There are concerns therefore that, in the context of the pandemic, lack of access to regular sporting or exercise routines may result in challenges to the immune system, physical health, including by leading to the commencement of or exacerbating existing diseases that have their roots in a sedentary lifestyle. Lack of access to exercise and physical activity can also have mental health impacts, which can compound stress or anxiety that many will experience in the face of isolation from normal social life. Possible loss of family or friends from the virus and impact of the virus on one's economic wellbeing and access to nutrition will exacerbate these effects.

For many, exercising at home without any equipment and limited space can still be possible. For those whose home life can involve long periods of sitting, there may be options to be more active during the day, for example by stretching, doing housework, climbing stairs or dancing to music. In addition, particularly for those who have internet access, there are many free resources on how to stay active during the pandemic. Physical fitness games, for example, can be appealing to people of all ages and be used in small spaces. Another important aspect of maintaining physical fitness is strength training which does not require large spaces but helps maintain muscle strength, which is especially important for older persons or persons with physical disabilities.

The global community has adapted rapidly by creating online content tailored to different people; from free tutorials on social media, to stretching, meditation, yoga and dance classes in which the whole family can participate. Educational institutions are providing online learning resources for students to follow at home. Many fitness studios are offering reduced rate subscriptions to apps and online video and audio classes of varying lengths that change daily. There are countless live fitness demonstrations available on social media platforms. Many of these classes do not require special equipment and some feature everyday household objects instead of weights.

Such online offerings can serve to increase access to instructors or classes that would otherwise be inaccessible. However, access to such resources is far from universal, as not everyone has access to digital technologies. For individuals in poorer communities and in many developing countries, access to broadband internet is often problematic or non-existent. The digital divide has thus not only an impact on distance banking, learning or communication, but also on benefitting from accessing virtual sport opportunities. Young people are particularly affected by social and physical distancing, considering sport is commonly used as a tool to foster cooperation and sportsmanship, promote respectful competition, and learn to manage conflict. Without sport, many young people are losing the support system that such participation provided. Currently some organizations, and schools have begun using virtual training as a method for leagues, coaches and young people to remain engaged in sport activities while remaining in their homes.

The impact of COVID-19 on sporting events and the implication for social development

To safeguard the health of athletes and others involved, most major sporting events at international, regional and national levels have been cancelled or postponed – from marathons to football tournaments, athletics championships

to basketball games, handball to ice hockey, rugby, cricket, sailing, skiing, weightlifting to wrestling and more. The global value of the sports industry is estimated at US$756 billion annually. In the face of COVID-19, many millions of jobs are therefore at risk globally, not only for sports professionals but also for those in related retail and sporting services industries connected with leagues and events, which include travel, tourism, infrastructure, transportation, catering and media broadcasting, among others. Professional athletes rescheduled their training, while trying to stay fit at home, and they risk losing professional sponsors who may not support them as initially agreed.

In addition to economic repercussions, the cancellation of games also impacts many social benefits of global and regional sport events, which can cement social cohesion, contribute to the social and emotional excitement of fans, as well as their identification with athletes leading to greater physical activity of individuals. Sport has long been considered a valuable tool for fostering communication and building bridges between communities and generations. Through sport, various social groups are able to play a more central role towards social transformation and development, particularly in divided societies. Within this context, sport is used as a tool for creating learning opportunities and accessing often marginal or at-risk populations.

1.3 Conclusion and Recommendations

The COVID-19 pandemic has had and will continue to have very considerable effects on the sporting world as well as on the social, physical and mental well-being of people around the world [19]. The following recommendations seek to both supports the safe re-opening of sporting events and tournaments following the pandemic, as well as to maximize the benefits that sport and physical activity can bring in the age of COVID-19 and beyond.

1. Governments and intergovernmental organizations and public health agencies would continue to provide sports federations, clubs and organizations around the world with accurate guidance related to safety, health, labor and other international standards and protocols that would apply to future sport events and related safe working conditions. This would allow all stakeholders to work cooperatively as a team with the objective to address the current challenges and to facilitate future sports events that are safe and enjoyable for all.

2. The sport ecosystem, comprising of producers, broadcasters, fans, businesses, owners and players among others, need to find new and innovative solutions to mitigate the negative effects of COVID19 on the world of sport. Such ways include full online streaming access to live football matches to engage fans in order to ensure safe sport events in the stadium with limited in-person attendance while maintaining the workforce, creating new operating models and venue strategies.

3. Governments should work collaboratively with health and care services, schools and civil society organizations representing various social groups to support physical activity at home. Enhancing access to online resources to facilitate sport activities where available should be a key goal in order to maintain social and physical distancing. However, low-tech and no-tech solutions must also be sought for those who currently lack access to the internet. Creating a flexible but consistent daily routine including physical exercise every day to help with stress and restlessness is advisable.

4. Sport education is a powerful means to foster physical fitness, mental well-being, as well as social attitudes and behavior while the movements of the populations are restricted. All levels of government and the sporting community, including the sporting education community, should disseminate WHO and other guidance on individual and collective measures to counter the pandemic. Athletes, while deeply affected by the pandemic, remain key influencers to ensure that – especially young – audiences understand risks and respect guidance.

Acknowledgements

I am forever grateful to Jesus Christ: my Cornerstone, for sharing in His love and light. JESUS, thank you!!

My immense gratitude goes to Andre Victor, Linsen, Jonathan Raphael, Priscilla James, Brian Roberts, Brandon Remie, Darren Delsol, Kyle Delsol, Ethan Doctrove, Fitzgerald Doctrove, Mauricio Burton, Nickolson Charles, Myron Joseph, Stefan Blaize, Stefen Blaize, Shane Cockrane, Dante Williams, Kendell Lawrence, Fermin Adelson, Nas Bazile, Jake Phillips, Sherwin Sutherland, Micah Timothy, Joshua Timothy, Zendel Abraham, Ishmael Abraham, Brandel Richards, Kody McDonald, Judah Vidal, Herman Jacques, Maurice James, Allan Severin, Al James, Priscilla Deji, Victory Idiake, Paul Akpomiemie, Leo Harvey, Jude Ekeng, Oliseh Uwadone, Maurice Agu, Lewis Ngige, Bolutife Fawole, Justin Okafor, Ayodeji Oluwagbenga, Jonathan Moses, Divine Ikpeme, Mfon Osom, Kari Dumdibabari, for your extraordinary effort that forged the birth of Club Loubiere United, when it seems very unlikely. I would like to thank Glenda Castle (Loubiere Village Council), Michael Pendengue (Youth Division) and all Loubiere community youths and residents for your support and demonstrated unity spirit during the formative years of Club Loubiere United. My respect goes to all members of Club Loubiere United, for being model of discipline at all DFF organized football competitions. Respect!!

My profound gratitude goes to Glen Etienne (President, Dominica Football Federation, DFF) for access to relevant professional managers training opportunities during my service years as the pioneer Head Coach, Club Loubiere United. Also, I would like to thank Jerome Bardouille (Technical Director, DFF), Rajesh Latchoo (Head Coach, Senior Men, DFF), Wayne George (Women's Coordinator, DFF), Alganan Degallerie (General Secretary, DFF), Joffre Faustin (Youth Development Officer, DFF), all staff and members of the football house Dominica Football Federation, for your tremendous support and encouragement during my service years at Club Loubiere United.

I am overwhelmed with all humbleness to express my sincere appreciation to Elder Frankly Francis, Elder Bernard Henry, Pastor Desmond Etienne, Sister Barbara Hill, Sister Samantha Francis, Sister Lee-Ann, and all members of Calvary Baptist Tabernacles, Loubiere-Wallhouse, for your spiritual and physical support to me, especially during the developmental stages of YALI-Caribbean. I love you all!! My high regards goes to all members of YALI-Caribbean, for being reliable partners of Club Loubiere United and trusted friends of the Dominica Football Federation. I would like to thank Hazel Bruno (Dominica Olympics Committee), for your listening ears, positive attitude, and healthy communication over the years. My sincere appreciation goes to Rohan Thomas (CW PRESCOD), for the opportunity to serve as the football coach, Sion Hill Academy, Saint Vincent and the Grenadines.

My profound gratitude goes to Kevin Phillips and Rochelle Morgan (National Public Library, SVG), for your technical support that ensured the successful completion of my research paper. My heartfelt appreciation goes to Nicolai Lewandowski (ISI Sports Academi, Denmark), for your good works and our friendship correspondence.

I cannot express enough gratitude to Dr. Anzhelika Ivasenko MD, PhD, for your ever reliable and timely financial support during my difficult times.

My deep appreciation goes to John Omidoyin and Eunice Omidoyin, PhD (my parents), and my siblings for your support and care. Thank you all!!

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Measures of Industry 4.0 on Manufacturing Industries Located in the European Union in Times of COVID 19

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Abstract

The Corona crisis is foremost a human tragedy. With on-going development of restrictions economical impact can be seen in every industrialized country. Next to a sharp decrease in demand there is also lack of supply due to availability of staff or closed borders. Whereas some industries can work remotely several industries are not able to work without physical appearance. Especially companies in the field of production have limited possibilities to switch to remote production without employees. Even high technologized and automated production facilities, as they can be found in automotive are not operationally functionable without employees on-site. The aim of this paper is to review current hurdles of manufacturing enterprises based on available surveys and to find preventive measures for similar (future) crisis out of the Industry 4.0 toolbox.

Keywords: manufacturing, shoopfloor, Industry 4.0, automation, Eurpean manufacturing,

1. INTRODUCTION

Covid 19 and the impact of all aspects of daily life are currently challenging industry on a global level. Next to decreasing demand lack of supply is becoming obvious. Especially in countries with restrictive government orders (March 19: Italy, Spain) companies are not allowed even though material and workforce would be available. Other industries are blocked from production due to diminishing demand. Furthermore, the fear of getting infected is immanent. It is obviously that all suggested measures in this paper cannot be implemented on short notice, nevertheless those could be understood as preventive measure for future pandemics. The paper focuses on European industries with manufacturing background.

1.1. Structure

In this paper the impacts on manufacturing industry is reviews based on available surveys. If differences between industries can be seen those will be pointed out specifically. Afterwards most common practices of Industry 4.0 are reviewed. In the third chapter a possible linkage of both focusses is done. Thereof following topics are tackled:

- Definition of reviewed industries and specific characteristics
- Impact of Covid on specific industries
- Most common Industry 4.0 practices

- Review and summary

1.2. Data sources

Statistical data is taken from available sources of the European Union or affiliated institutions.

2. Definition of reviewed industries and specific characteristics

In this chapter a definition of the reviewed industries is given. Furthermore, specific characteristics are defined.

According to the 2018 evaluation of Eurostat Industry (production of goods, mining, energy) is counting for the second largest contribution to GDP after service provision. 19.7% of GDP came out of industrial activities, whereas 5.2% were dedicated by constriction activities and 1.7% by agricultural production. The vast majority of GDP is based on services (72.6%). Even though there are slight differences in relative figures between the members of the European Union industrial activities are the second important contributor to GDP.1

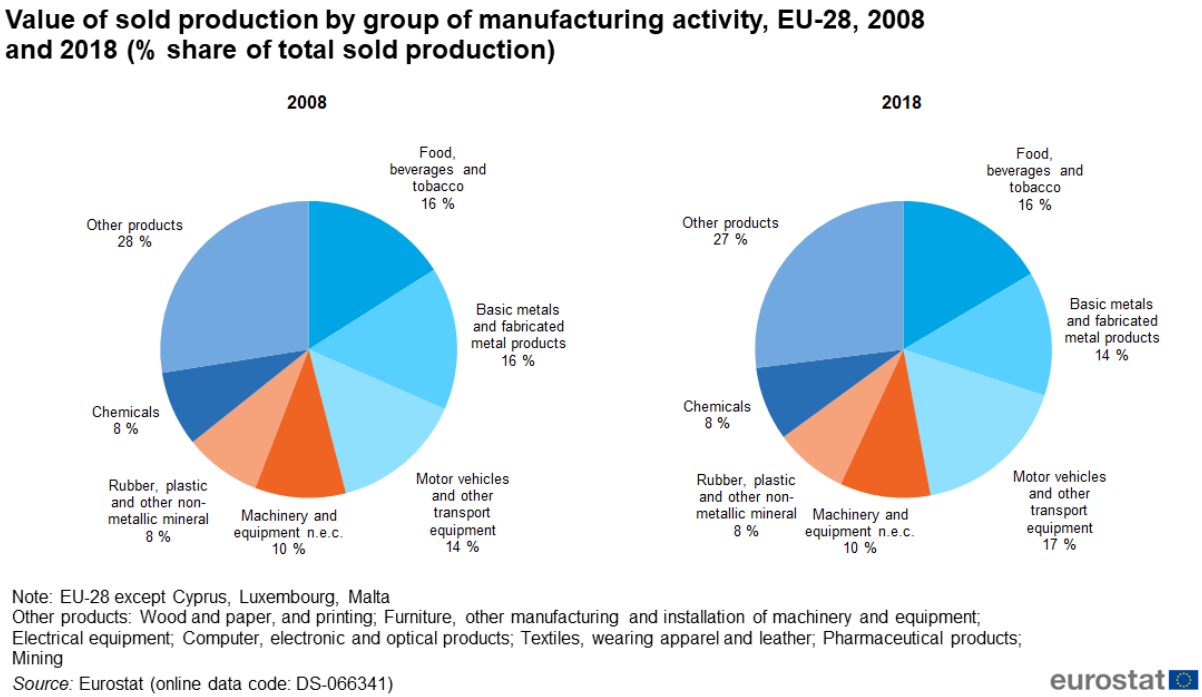

Fig. 1. Value of sold production [2]

According the Eurostat 2018 census the following industries are the most significant in the European Union, therefore their challenges (“other products” not taken into account, due to high variety business fields):

1. Motor vehicles and other transport equipment (17%)

2. Food beverages and tobacco (16%)

[1] cf. Eurostat 2018 [online]
[2] cf. Eurostat (2019) [online]

3. Basic metals and fabricated metal products (14%)

4. Machinery and equipment (14%)

Taking into account the technological and the interdependence between #1, #3 and #4 those industry fields will be covered in this paper. Furthermore, consumables as food, beverages or tobacco are considered as not as vulnerable as the before mentioned when it comes to economic downturns.

Challenges of beforementioned industry in the Covid 19 crisis
The following chapter is summarizing most common challenges. The data is based on data collected by consultant agencies and is considered as a guideline but not scientifical proven[34]

A distinction of losses of revenues has to be made:

- Losses due to decreasing demand

Those losses occur from changed customer behavior. Especially automotive related companies see a sharp downturn in demand during March. This effect backfires into the related (and often remarkably close managed) supply chain.

- Losses due to unavailability of supply

Supply chain issues arose from closed borders. Especially essential countries for supply of parts were cut off the European market in an exceedingly early stage of the crisis.

- Cash crisis

Whereas most OEM and Tier1 are operating with solid cash reserves Tier 2 suppliers are facing high working capital demand. This is caused by pre-financing production and long payment targets. Furthermore a cancellation of already delivered but not yet paid orders are jeopardizing liquidity of sub tiers. This cash crisis is enhanced by costs which cannot be cut on short notice (e.g. personnel costs, payback of machinery or equipment, inventory).

- Productivity crisis

As the output was adapted by decreasing demand profitability suffered. Production systems are operated on a lower throughput than they were planned for Furthermore optimized batches and several economy of scales effects cannot be used. At the same time shift models had to be adapted for minimizing social contacts between the production teams.

As a result, the following key performance indicators can be taken as an evaluation measure for the several layers of the crisis:

- Productivity (planned production hours vs. needed production hours)
- Inventory (Work in progress / Finished goods inventory / Raw material)
- Schedule adherence (Customer need date vs. Shipping date)
- Missing line items per order

[3] cf. Mc Kinsey (2020) [online]
[4] cf. PWC (2020) [online]

3. Industry 4.0

The following chapter is reviewing generic Industry 4.0 (I4.0) approaches and which generic requirements they fulfill.

3.1. Potentials of I 4.0

Industry 4.0 offers some potential for companies and their employees. These are among others:[5]

- Individualization of customer requirements

This means that it is possible for the customer to obtain products that have been designed to meet his individual wishes. This results in a production lot size of "1" and, as a consequence, increased planning effort and new sources of error.

- Flexibility

Flexibility is achieved, among other things, through the use of easily modifiable modules (systems, machines) but also through generative manufacturing processes. Improved information and communication systems should ensure faster and more flexible reactions at the organizational level.

- Optimized decision making

Decisions in the sense of Industry 4.0 are made on the basis of a broad and, above all, accessible database. This accelerates decisions and reduces uncertainties in the decision-making process.

- Resource productivity and efficiency

Reduced decision-making time increases resource productivity and efficiency through reduced downtime or wrong decisions due to missing data.[6]

- Value creation potentials through new services

In the context of Industry 4.0, there is the possibility of new business models, but also the chance of evolutionary expansion of existing business branches. The former refers in particular to the introduction of new technologies (e.g. generic manufacturing processes or services in the area of cloud computing). Existing business lines could grow by linking different technology drivers.[7]

In summary, this results in the economic objective of securing the long-term competitiveness of high-wage locations. This is achieved by enabling and supporting individualized production of the respective customer requirements. In addition, the use of appropriate technologies is intended to increase flexibility and security while simultaneously reducing the use of resources. Further essential goals are also the reduction (avoidance) of downtimes. For the employees involved, the operability of devices or plants is increased. These goals are achieved by linking the real environment with the virtual world.[8] On the one hand, information is exchanged more quickly, on the other hand, the targeted evaluation of data prevents possible problems or failures. On a technological level, this means that sensors are used to collect data in the real world. This data is then evaluated, stored and made available to involved participants. In general, a broad (partly worldwide available) database is used for decision making. The derivation of possible measures is done either automatically via the control of corresponding actuators. In addition, specific measures can

[5] cf. Kagermann (2014), p 20
[6] cf. Fay (2013), p. 3
[7] cf. Barbian et al. (2016), p. 29
[8] cf. Köhler-Schute (2015), p. 26

be communicated to employees via human-machine interfaces. The methods and technologies used for this are not new, but Industry 4.0 is characterized by the linked usage of these methods.[9]

3.2. Dimensions of I 4.0

Industry 4.0 focuses on three essential dimensions:

- Horizontal integration across value chains

This is considered as the linking of internal company value-added steps with external partners. This means an exchange of information takes place between the company and its suppliers and customers in all directions. This ensures more efficient control and coordination of all value-added steps.[10]

- Vertical integration via automation hierarchies

This means the design of networked chains of hierarchy. That implies that sensors and actuators are linked to the control, management and planning technology. This allows to react to fluctuations in the process, furthermore (depending on the intelligence of the IT system behind it) self-optimization measures can be taken without external intervention.[11]

- Consistency of data across value chains

This dimension describes the necessity of continuous and up-to-date product data which must be accessible to all involved departments during development and also during the program runtime. On the one hand, this serves for better planning in advance, on the other hand it ensures that all necessary information is available for all involved parties.[12]

In summary, it can be said that the availability of networked data, the analysis of this data and the derivation or design of value-adding measures based on the existing data are the central mechanisms of Industry 4.0.

3.3. Methods in the field of I4.0

In the context of the term industry 4.0 several industrial fields are understood. The introduction of cloud computing and all associated applications represents an essential technological characteristic. One of the goals is the continuous introduction of the Internet Protocol Version 6 (IPv6) instead of closed (internal company) networks. The use of apps to synchronize or exchange information about apps is an equally decisive approach. Another major challenge in the technology field of cloud computing is dealing with Big Data. This means that companies are increasingly faced with the challenge of processing large, complex and often unstructured data volumes. Here it is necessary to implement technologies and strategies for dealing with these resources. The processing of real-time data for optimization or for use in decision making is also a major challenge.[13]

A second prominent field of technology is the implementation of embedded systems in an industrial environment. In this context, embedded systems are also referred to as cyber physical systems (CPS). This refers to the use of intelligent products (smart products). Furthermore, sensors and actuators have to be networked with each other. That means that standards are created and maintained in this connection. In addition, machines must be linked with each other. Leading to the subsequent result that plants can exchange relevant product or process data with each other. This

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[9] cf. Kagermann et al. (2013), p. 59
[10] cf. Köhler-Schute (2015), p. 19
[11] cf. Köhler-Schute (2015), p. 20
[12] cf. Köhler-Schute (2015), p. 20
[13] cf. Bauer et al. (2014), p. 21

also has to happen based on a standardized interface. Machine2Machine means that the data is transferred to a central point, where it is aggregated and subsequently made available to relevant stakeholders, or they can access it.[14]

The third technology focus is characterized by the term Smart Factory. Smart Factory considers the interfaces and communication within a factory between employee, machine and product. To implement a Smart Factory, the creation of a corresponding CPS (or in the production context CPPS – cyber physical production system) is necessary. This basis is extended by the idea of interaction of different objects, machines and humans. Social Machines describes here that machines exchange their operating states independently. Another term in this field of technology is Plug&Produce. This is based on the common term "Plug & Play" and describes in this context that systems, devices or machines adapt their parameters to the next product independently. Low-cost automation is regarded as an essential success factor for the successful implementation of the Smart Factory. This means that the costs resulting from the necessary automation should be kept as low as possible. The digital twin is understood as the acquisition and management of relevant control parameters or data across the entire production system. In order for humans to be able to act in the best possible way in their role as active decision-makers and optimizers, the interfaces between data, systems, products and employees must be designed accordingly. This means that appropriately prepared information (necessary for decision or action) is transmitted to the employee in a targeted manner.[15]

3.4. Basic concepts

In the following section, relevant basic terms are explained in the context of Industry 4.0 or the previously described key topics.

- IoT

Internet of Things describes the connection of physical objects in an Internet-like structure. The Internet of Things pursues the goal of closing information gaps between the real and virtual world and deriving actions from the acquired and shared data. The focus here is on the unambiguous identification and networking of different devices or everyday objects. This means that states or state information about a thing or an object is captured and distributed accordingly. The information obtained in this way can be used to directly relate to the thing or participant. However, the benefit for the network can be increased if the information provided is used to derive possible measures for participants. In order to make the information usable for all participants, requirements for participants have to be standardized. Furthermore, it is necessary to define and adhere to corresponding guidelines in the area of data protection. For the implementation and above all to attract and retain participants, an appropriate infrastructure is necessary (sensors, actuators, network connection). The resulting costs must be compared to the achievable benefits and evaluated accordingly. Industry 4.0 can be seen as a derivation of the IoT concept in the industrial context.[16]

- CPS / CPSS

Cyber-physical systems are systems in which mechanical, electrical and electronic components are linked to corresponding processes by means of appropriate software and associated sensor technology. If the cyber-physical system is considered in the context of production, it is called a cyber-physical production system. The consideration here does not automatically include the entire production but can also be limited to individual sections or plants. Generically expressed, cyber-physical systems are characterized by a connection between the real world (physically) and information-processed (cyber) systems and objects.

However, CPS is also characterized by the fact that the individual participants are networked and exchange corresponding information with each other. The employees are strongly supported by the appropriate provision of information or can make necessary decisions on a broad data basis.[17]

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[14] cf. Kagermann et al. (2013), p. 17
[15] cf. Emmrich et al. (2015), p. 14
[16] cf. Köhler-Schute (2015), p. 21
[17] cf. Cronin (2010), p. 9

- Smart Products

Smart Products are physical objects that have a unique digital signature. In addition, item-specific information is collected. This information is either stored directly on the physical object by means of appropriate electronics, or can be clearly assigned to the object by means of the digital signature. An essential requirement for Smart Products is that they have a standardized communication interface. In addition, Smart Products can in some cases record and transmit data.[18]

- Smart Factory

This keyword describes the vision of an intelligent factory. It is characterized by fewer disturbances, faster decision-making and increased efficiency. This is promoted by a targeted and promoted exchange of information between product, employees and production facilities. In summary, it can be stated that the Smart Factory promotes concepts for the creation of a value-added-oriented process chain by integrating product, equipment and employees. It is the declared goal to create the available resources through transparent and optimized decisions and management, including all available data in real time. Smart Factory is a part of the Internet of Things.[19]

4. Summary

A highly linked value chain (vertical as well as horizontal) enables the operating company to control and adjust the production throughput without loss of information. Especially changed customer demand and the resulting production program can be communicated over the whole value change without delay. Therefore inventory, especially finished goods inventory can be prevented.

Also, demand can be adjusted faster as a result of automated updates of needed throughput. Preventing excess inventory leads to a saving in cash needed.

Furthermore, work orders which are affected by non-availability of needed material or items will be started later or with (if possible) alternative material. Based on that inventory in production (work in progress) is kept on a lower level as without the relevant information.

Productivity, which is basically measured in production hours needed in comparison to production hours scheduled can be optimized by recognizing missing items or work force. Several scenarios are possible:

- Usage of alternative materials or resources

- Postponing the workorder until all needed items / resources are available

As a critical note in these opportunities the lead time for implementation as well as the investment needed have to be mentioned. I4.0 measures have to be considered as a sustainable method for providing information and possible mitigation for unforeseen situations (as they are likely during supply/demand crisis).

Subject for deeper analyses and research could be an analysis about generic profitability of I 4.0 related investments compared to the short-term usage during crisis. Furthermore possible

[18] cf. Kagermann et al. (2013), p.23
[19] cf. Bauernhansl et al. (2014), p. 18

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ISBN 978-80-88203-18-6

Czech Institute of Academic Education z.s.