

# Challenges of Teachers Amidst Sustained Global Health Crisis

Marvin B. Herrera<sup>1</sup>, Dennis G. Caballes<sup>2</sup>

<sup>1</sup>E. Rodriguez Vocational High School, Manila, Philippines  
Email: [marvinherrera331@gmail.com](mailto:marvinherrera331@gmail.com),

<sup>2</sup>The National Teachers College, Manila, Philippines  
Email: [dg.caballes@ntc.edu.ph](mailto:dg.caballes@ntc.edu.ph)

Received: 10 May 2022; Received in revised form: 02 Jun 2022; Accepted: 08 Jun 2022

©2022 The Author(s). Published by TheShillonga. This is an open access article under the CC BY license  
(<https://creativecommons.org/licenses/by/4.0/>)

## Abstract

*Teachers around the globe encountered challenges during the onset of the pandemic. This study, therefore, aimed to identify the challenges faced by the teachers in the Division of Manila amidst sustained global health crisis. This study employed quantitative and qualitative research designs to determine the challenges encountered by the teachers. There were 61 teacher respondents for the survey questionnaire and six head teachers for the online interview. The results showed that teachers encountered several challenges on classroom management, training, resources, technical skills, and communication, and were vouched by the head teachers who shared their perspectives on the aforementioned challenges. While teachers were at their best to deliver the lessons despite various challenges, they needed instructional and administrative supports during this trying time where the situation is entirely new to everyone.*

**Keywords**— *teachers, challenges, pandemic, teaching, learning.*

## I. INTRODUCTION

The declaration of COVID-19 as a pandemic by the World Health Organization had impacted education in an unprecedented manner affecting more than 107 countries. According to UNESCO (2020), this declaration caused the abrupt migration of face-to-face classes to online spaces that affected about half of the global student population; thus, resulting to 1.2 billion children being withdrawn from the classroom (Caballes and Santos, 2020). Undeniably, transition period caused an urgent requirement for teachers to gain understanding and competencies in using digital virtual platforms to teach their students. The transition, however, was smooth for some schools but was rough for others, especially to those from developing countries with limited infrastructure (Barrot et al. 2021). In the Philippines, ICT infrastructure improvement is still one of the major concerns of the government even before the onset of the pandemic. In this trying time where ICT becomes the backbone of operations among businesses, schools, and the larger public, infrastructure landscape remains problematic, heavily affecting the education sector. It was further exemplified by Ghavifekr et al. (2016) who stated that significant challenges in the adoption of e-learning system

in the developing countries were poor internet connection and lack of development in ICT infrastructure.

With these growing concerns on education and the battle to learning continuity, education sector settles to push through with online learning and modular modalities. Within the context of COVID-19 pandemic, remote teaching was set as the primary learning delivery to bridge education amidst the global health crisis. On the other hand, remote teaching alarmed and raised several concerns from educators stemming largely on policy, pedagogy, logistics, socioeconomic factors, technology, and psychological concerns (Donitsa-Schmidt and Ramot, 2020; Khalil et al., 2020; Varea and González-Calvo, 2020).

There are various studies on the positive effects of technology in learning delivery, but they vary upon the readiness of the country and its educational system. Online classrooms with no in-person face-to-face interactions truly are far different from the traditional ones. Khlaif et al. (2021) noted that it was crucial during these times to assess and engage students in the learning process. Consequently, teachers are challenged to manage the classroom and to deliver learning instructions toward the desired learning outcome. Aljaber (2018) exemplified that

technology in instruction results to poor communication between learners and teachers, and inadequate ICT integration competence. Moreover, poor infrastructure and limited digital competence were identified as the major barriers that affect technology integration (Tosuntaş et al., 2019).

Although many teachers believed that technology could brace them through remote teaching, they cannot fully embed it in instruction for various reasons. Zaharah et al. (2020) noted that teachers are having difficulties in handling online applications added to the challenges ranging from ICT skills, poor access to the internet, and scarcity of resources and materials. Teachers were placed in an arena totally Greek to most of them. It can be recognized that teachers are knowledgeable using PowerPoint and other offline applications prior the onset of pandemic; however, educational experts continue to evaluate the extent of technological teaching tools integration in pedagogical practices (Guillén-Gámez et al., 2018; Nikolopoulou & Gialamas, 2016). Accordingly, it is recommended to undergo professional training on technology integration in teaching (Guillén-Gámez et al., 2020). Nambiar (2020) also stipulated that student perceived online classes to lack of quality, forcing the teachers to give their best shot in the middle of the challenges and demands expected from them.

Undeniably, teachers, amidst the sustained global health crisis, are facing several challenges due to the abrupt and rapid changes and adjustments in the educational system (Pentang et al. 2022). These abrupt changes in the educational system concern mainly in learning delivery, access to internet connection, trainings to cope up with the changes, communication, and resources. Tosun et al. (2021) noted that teachers have lack of experience on the current situation in education. Despite teachers' inexperience, they are still expected to deliver the lessons using the readily applicable and available teaching and learning pedagogies (Pentang, 2021).

There were numerous studies over the recent years concerning teaching and learning during pandemic (Caballes and Abenes, 2020; Caballes and Andino, 2020; Caballes and Capinig, 2020, Caballes and Chua, 2020; Caballes and Delos Reyes, 2022; Caballes and Doblada, 2021; Caballes and Florungco. 2020; Caballes and Hou, 2020; Caballes and Marino, 2020; Caballes et al., 2020) but little was done concerning the challenges encountered by teachers. This prompted the researchers to undertake an investigation concerning the challenges experienced by the teachers in the Division of Manila amidst the sustained global health crisis. Specifically, the research sought answers to the following questions:

1. What were the challenges experienced by the teachers amidst sustained global health crisis?
2. Was there a significant relationship between the challenges faced by the teachers amidst sustained global health crisis?
3. What were the perspectives of school leaders on the challenges experienced by the teachers amidst sustained global health crisis?

Further, this hypothesis was tested in the study:

There was no significant relationship between the challenges faced by the teachers amidst sustained global health crisis.

## II. METHODOLOGY

### 2.1 Research Design

The study employed a mixed quantitative and qualitative research design to determine the challenges experienced by the teachers in the Division of Manila amidst sustained global health crisis. It was necessary to conduct a descriptive investigation to record the challenges and employ qualitative approach to gather the perceptions of the school leaders on the challenges encountered by the teachers.

### 2.2 Respondents and Sampling Method

Participants were teachers in the Division of Manila. Employing nonprobability sampling, there were 61 participants who responded favorably to the request of the researchers to answer the survey questionnaire. Furthermore, there were six head teachers who participated in an online interview.

### 2.3 Instrument

The study was concerned on the challenges of teachers amidst sustained global health crisis. The respondents were sent a survey questionnaire to be accomplished to determine the challenges they faced. Later, an online interview was conducted among head teachers to cross examine the result of the survey.

*Construction and Validation.* The researchers constructed a self-made survey questionnaire. Afterwards, they sought the help of experts in the field of education to evaluate and validate the instrument and to make sure that it will provide valid and reliable result. The interview questions were also validated prior administration.

### 2.4 Data Gathering Procedure

Preceding the data gathering, the researchers had conducted reliability testing. A survey questionnaire was sent to 30 teachers. The survey consisted of 12 items and the value for Cronbach's Alpha for the survey was  $\alpha = .71$ .

In addition, a normality test was also conducted using Kolmogorov-Smirnov Test for Normality which revealed that the variables follow normal distribution in the population.

Data were gathered using survey questionnaire that allowed the participants to identify the challenges they faced amidst sustained global health crisis. The responses were encoded and processed using SPSS V.25. The following treatments were employed: mean, standard deviation, and correlations. On the other hand, thematic analysis was done to analyze the responses in the interview.

### III. RESULTS AND DISCUSSION

#### 3.1 Challenges Encountered by the Teachers

The survey questionnaire was answered by 61 respondents. The responses were summarized in tables and are as follows.

Table 1: Descriptive (Classroom Management)

Statement	Mean	SD	Adjectival Rating	Interpretation
I had difficulty engaging students in the learning process.	2.79	0.78	Agree	Challenging
I had difficulty monitoring students' progress.	2.70	0.82	Agree	Challenging
I had difficulty managing instructional time effectively.	2.74	0.84	Agree	Challenging
Overall	2.74	0.73	Agree	Challenging

Table 1 shows challenges of teachers on classroom management. It can be gleaned that they had difficulty engaging students in the learning process, monitoring students' progress, and managing instructional time effectively with the means of 2.79, 2.70 and 2.74, and standard deviations of 0.78, 0.82 and 0.84, respectively.

Table 2: Descriptive (Training)

Statement	Mean	SD	Adjectival Rating	Interpretation
I received less to no training/workshop.	2.07	0.73	Disagree	Somewhat Challenging
I received less supervision from my immediate head(s).	2.34	0.81	Disagree	Somewhat Challenging
Overall	2.20	0.71	Disagree	Somewhat Challenging

Table 2 exhibits challenges of the respondents on receiving training. It shows that receiving training and supervision from immediate head(s) were somewhat challenging for teachers with an overall mean of 2.20 and SD of 0.71.

Table 3: Descriptive (Resources)

Statement	Mean	SD	Adjectival Rating	Interpretation
I lacked the necessary ICT-related devices for online modality.	2.48	0.85	Disagree	Somewhat Challenging
I lacked stable internet connection at home.	2.62	0.92	Agree	Challenging
Overall	2.55	0.78	Agree	Challenging

Table 3 shows challenges experienced of the respondents on access to resources. It exhibits that respondents disagreed that they lacked the necessary ICT-related devices for online modality with a mean of 2.48 and SD of 0.85. On the other hand, they agreed that they lacked stable internet connection at home with a mean of 2.55 and SD of 0.92. With an overall mean of 2.55 and SD of 0.92, teachers agreed that they lacked resources during the sustained global health crisis with an interpretation of challenging.

Table 4: Descriptive (Technical Skills)

Statement	Mean	SD	Adjectival Rating	Interpretation
1. I have limited technological experience.	2.46	0.85	Disagree	Somewhat Challenging
2. I have limited knowledge in technology integration in instruction.	2.39	0.92	Disagree	Somewhat Challenging
Overall	2.43	0.74	Disagree	Somewhat Challenging

Table 4 exhibits challenges of the respondents in terms of technical skills. With an overall mean of 2.43 and SD of 0.74, teachers disagreed that they have limited technological experience and knowledge in integrating technology in instruction with an interpretation of somewhat challenging.

Table 5: Descriptive (Communication)

Statement	Mean	SD	Adjectival Rating	Interpretation
I experienced receiving insufficient feedback from my immediate head(s).	2.31	0.72	Disagree	Challenging
I experienced less student-teacher interaction.	2.82	0.77	Agree	Challenging
I experienced uneasiness meeting my colleagues and students in an online space.	2.25	0.78	Disagree	Somewhat Challenging
Overall	2.46	0.60	Agree	Challenging

Table 5 presents descriptive on communication. It exhibits that the respondents disagreed that they experienced receiving insufficient feedback from their

immediate head(s), and that they experienced uneasiness meeting their colleagues and students in an online space with means of 2.31 and 2.25, and SDs of 0.72 and 0.78, respectively. On the other hand, teachers agreed that they experienced less student-teacher interaction with the mean of 2.82 and SD of 0.77.

Table 6: Summary of the Challenges Experienced by the Teachers

Statement	Mean	SD	Adjectival Rating	Interpretation
Classroom Management	2.74	0.73	Agree	Challenging
Training	2.20	0.71	Disagree	Somewhat Challenging
Resources	2.55	0.78	Agree	Challenging
Technical Skills	2.43	0.74	Disagree	Somewhat Challenging
Communication	2.46	0.60	Disagree	Somewhat Challenging

Table 6 exhibits the summary of the challenges experienced by teachers amidst sustained global health crisis. It can be gleaned that teachers agreed that classroom management and resources were challenging during those times with means of 2.74 and 2.55, and SDs of 0.73 and 0.78, respectively. Meanwhile, training, technical skills, and communication were somewhat challenging for teachers with means of 2.20, 2.43 and 2.46, and SDs of 0.71, 0.74, and 0.60.

Table 7: Relationship Between Classroom Management and Training

Variables	Pearson Correlation	Sig. Value	Interpretation	Decision
Classroom Management and Training	0.130*	0.317	Not Significant	Accept

$\alpha=.05$  Level of Significance

Table 7 presents correlation between classroom management and training. It shows that the computed Pearson r value 0.130 is lesser than the significant value 0.317 at 0.05 level of significance; therefore, there is no significant relationship between classroom management and training. It also implies that the null hypothesis is

accepted. This finding proves that teachers need to undergo professional training on technology integration in teaching (Guillén-Gámez et al., 2020). These trainings can help manage their classroom well as they abruptly proceeded in this new learning modality amidst sustained global health crisis. It was clearly a challenge for them to come up with strategies and techniques applicable in the new normal setup.

Table 8: Relationship Between Classroom Management and Resources

Variables	Pearson Correlation	Sig. Value	Interpretation	Decision
Classroom Management * Resources	0.369	0.003	Significant	Reject

α=.05 Level of Significance

Table 8 presents correlation between classroom management and resources. It shows that the computed Pearson r value 0.369 is greater than the significant value 0.003 at 0.05 level of significance; therefore, there is significant relationship between classroom management and resources. It further implies that the null hypothesis is rejected. Zabarah et al. (2020) noted that teachers are having difficulties in handling online applications added to the challenges ranging from ICT skills, poor access to the internet, and scarcity of resources and materials. The respondents agreed that it was hard for them to access materials online as the division did not have online repository of resources and materials.

Table 9: Relationship Between Classroom Management and Technical Skills

Variables	Pearson Correlation	Sig. Value	Interpretation	Decision
Classroom Management * Technical Skills	0.298	0.020	Significant	Reject

α=.05 Level of Significance

Table 9 presents correlation between classroom management and technical skills. It shows that the computed Pearson r value 0.298 is greater than the significant value 0.020 at 0.05 level of significance;

therefore, there is significant relationship between classroom management and technical skills. It further implies that the null hypothesis is rejected. Despite being adept in integrating technology in instruction, the respondents agreed to have major problem in internet connectivity. Barrot et al. (2020) mentioned that the transition to online learning can be rough to developing countries with limited ICT infrastructure. It was also evident in the study of Tosuntas et al. (2019) who exemplified that poor infrastructure and limited digital competence were identified as the major barriers that affect technology integration.

Table 10: Relationship Between Classroom Management and Communication

Variables	Pearson Correlation	Sig. Value	Interpretation	Decision
Classroom Management * Communication	0.193	0.136	Not Significant	Accept

α=.05 Level of Significance

Table 10 presents correlation between classroom management and communication. It shows that the computed Pearson r value 0.193 is lesser than the significant value .0.136 at 0.05 level of significance; therefore, there is no significant relationship between classroom management and communication. It further implies that the null hypothesis is accepted. The respondents agreed that it was a challenge for them to communicate especially with their students in the current learning setup. It is noted by Aljaber (2018) who mentioned that technology in instruction results to poor communication between learners and teachers, and inadequate ICT integration competence.

### 3.2 Perception of School Leaders

There were six head teachers who underwent online interview on their perspectives on teachers' responses concerning classroom management, training, resources, technical skills, and communication. Through thematic analysis, their responses were coded, and the themes are as follows.

#### Theme 1. Quality of Teaching and Learning.

Due to the abrupt transfer of classes from face-to-face to online spaces, teachers were forced to recalibrate themselves to respond to the demands of the new normal setup in education. Despite of teachers being knowledgeable in using technology in education, it was still a challenge for them to fully handle online classes. As mentioned by Khlaif et al. (2021), it is crucial at this time



to assess and engage students in the learning process. As revealed by the teachers' response in the questionnaire, they agreed that they are challenged in engaging and monitoring students' progress. It was further pointed out by the head teachers that teachers are still in the process of adapting pedagogies aligned in the new normal learning delivery.

**Theme 2. Adequacy of Seminars and Trainings.** The Department of Education implemented the DepEd Order No. 12 series of 2020 which formulated the new learning delivery modalities as stated in the Learning Continuity Plan (LCP) for the SY 2020-2021 until new memo is created (Guiamalon et al., 2021). Online and modular learnings were in effect, forcing teachers to attend seminars and training as the new learning modalities were foreign to them. Bagood (2020) stated that teachers as frontliners in education have undergone various seminars and training to be more equipped in delivering instructions amidst the sustained global health crisis. The seminars and training were not only given for professional growth but to also prepare teachers for unexpected circumstances ahead. Teachers admitted that they were given trainings to help them cope up with the demand of education in the new normal. Further, this was supported by the head teachers who mentioned that there was a plethora of school-based and national-level trainings in the Division of Manila. Thus, teachers were equipped with things they need to know to deliver instruction.

**Theme 3. Stability of Internet Connection.** Philippines, being a developing country, has an underdeveloped ICT infrastructure which mainly affects the stability of internet connection. Ghavifekr et al. (2016) mentioned that significant challenges in the adoption of e-learning system in the developing countries were poor internet connection and lack of development in ICT infrastructure. These were confirmed by the teachers based on their responses in the survey questionnaire. One of their major concerns is the stability of internet connection which was the backbone of learning delivery amidst sustained global health crisis. The head teachers also mentioned that while there were efforts to provide data and allowance for internet connection, the problem was the internet itself. They agreed that internet connection in the Philippines was not mostly reliable. Teachers pay considerable amount for the internet connection with speed slower than required to deliver learning.

**Theme 4. Technology in Education.** Immense advancements in technology have not only penetrated the industries but also the field of education at a trailblazing pace in recent years. Given the significance of technology in our daily lives, attempting to keep away education from it would be unimaginable. The use of technology in

education was heightened when the pandemic started. As schools transferred face-to-face classes to online spaces, there was the need to use and integrate technology in education. Mc Carthy (2018) mentioned that educators can deepen transfer of learning by making the most of classroom technology. Guillén-Gámez et al. (2020), on the other hand, claimed that it takes to have professional training to integrate technology in teaching. Teachers competently agreed that they have adequate knowledge in integrating technology in education as it was not new to them. Further, 21<sup>st</sup> century educators are long expected to use technology in instruction; thus, requiring their classes to integrate ICT even before the onset of the pandemic. In addition, head teachers noticed that teachers attend graduate classes which afford them the knowledge to successfully integrate technology in education. Also, national and local government units supported the teachers with the needed materials in teaching.

On the other hand, Tosuntas et al. (2019) exemplified that poor infrastructure and limited digital competence were identified as the major barriers that affect technology integration. It is therefore an imperative to improve the country's ICT infrastructure to achieve this goal of successfully integrating technology in education. Indeed, technology in education promised substantial result of successful transfer of learning amidst the sustained global health crisis.

**Theme 5. Student-teacher Interaction.** One of the main problems teachers faced during the sustained global health crisis was on communication. Since not everyone has access to high-speed internet connectivity, teachers had difficulty communicating with their students their feedbacks and progress reports. This was affirmed by Aljaber (2018) who noted that technology in instruction results to poor communication between learners and teachers. Teachers in the Division of Manila agreed that they found trouble in terms of student-teacher interaction. Despite the efforts made by the teachers, problem in teacher-student interaction was evident as they could not establish good rapport in the first place. Head teachers affirmed this and identified students in the new normal to be passive and poor communicators.

Indeed, distance matters in terms of communication, and gadgets and technology do not simply solve that problem in education. While the help of technology is acknowledged in the current learning setup, it cannot be denied that problem in communication is still apparent.

#### IV. CONCLUSIONS AND RECOMMENDATIONS

The findings of the study revealed that teachers encountered several challenges during the sustained global health crisis. The pandemic brought a lot of problems and education sector was not an exemption. The result of this body will help the agencies concerning education to strengthen their campaign to armor teachers with their needs during disruption of classes such as this pandemic. Despite the efforts extended by the concerned people and agencies, teachers still greatly suffered.

This study enables to obtain concrete scenarios of teachers during the sustained global health crisis. Thus, this study suggests that education sectors shall seek means to extend further help to the frontliners of education delivery. It is also recommended that the government shall have contingency plan to be implemented in times like this. Since education does not stop amidst disruption, it is imperative to put education on top priority as it affects all other sectors when not given due importance.

#### ACKNOWLEDGEMENTS

The researchers are grateful to the teachers and head teachers who willingly participated in the study for without their help, this study would not come to fruition.

#### CONFLICT OF INTEREST AND FUNDING

The researchers have no contending interest in conducting the study. Further, the study was funded personally by the researchers.

#### REFERENCES

- [1] Aljaber, A. (2018). E-Learning policy in Saudi Arabia: Challenges and successes. *Research in Comparative and International Education*, 13(1), 176–194. <https://doi.org/10.1177/1745499918764147>
- [2] Bagood, J. B. (2020). Teaching-learning modality under the new normal. Philippine Information Agency. <https://pia.gov.ph/features/articles/1055584>
- [3] Barrot, J.S., Llenares, I.I. & del Rosario, L.S. Students' online learning challenges during the pandemic and how they cope with them: The case of the Philippines. *Educ Inf Technol* 26, 7321–7338 (2021). <https://doi.org/10.1007/s10639-021-10589-x>
- [4] Caballes, D. G., & Abenes, F. M. D. (2020). Readiness of tertiary students in flexible learning approach. *CiiT International Journal of Automation and Autonomous System*, 12(3), 62-69.
- [5] Caballes, D. G., & Andino, I. H. (2020). Determining the challenges encountered by Lian district principals in supervision: input for a proposed action plan. *CiiT International Journal of Digital Image and Processing*, 12(3), 37-41.
- [6] Caballes, D. G., & Capinig, R. A. V. (2020). DepEd commons: sustaining students' learning in physical science. *CiiT International Journal of Data Mining and Knowledge Engineering*, 12(3), 55-60.
- [7] Caballes, D. G., & Chua, K. M. (2020). Challenges and opportunities in emergency remote teaching on secondary biological science during ECQ implementation due to COVID-19 pandemic. *CiiT International Journal of Software Engineering and Technology*, 12(4), 63-68.
- [8] Caballes, D. G., & Delos Reyes, F. J. F. (2022). A narrative on students' satisfaction in Fully online and modular learning. *International Journal of Scientific and Research Publications*, 12(1), 235-239.
- [9] Caballes, D. G., & Doblada, J. C. L. (2021). Relationship of teachers' technology skills and selected profile: basis for redesigning training for online distance learning modality. *Instabright International Journal of Multidisciplinary Research*, 3(1), 17-22.
- [10] Caballes, D. G., & Florungco, J. K. E. (2020). A study on the mental fatigue factors and stress management of teachers in the times of pandemic. *CiiT International Journal of Data Mining and Knowledge Engineering*, 12(10-12), 151-155.
- [11] Caballes, D. G., & Hou, L. (2020). Experiences of online learning curriculum development during COVID-19. *CiiT International Journal of Digital Image Processing*, 12(7-9), 75-84.
- [12] Caballes, D. G., & Marino, N. T. (2020). Online teaching-learning readiness of Dela Paz National High School. *CiiT International Journal of Artificial Intelligent Systems and Machine Learning*, 12(3), 45-54.
- [13] Caballes, D. G., & Santos, M. R. F. (2021). Exploring the effectiveness of learning activities in physics using indigenous materials during pandemic. *International Journal of Research Publications*, 80(1), 177-187.
- [14] Donitsa-Schmidt, S., & Ramot, R. (2020). Opportunities and challenges: Teacher education in Israel in the Covid-19 pandemic. *Journal of Education for Teaching*, 46(4), 586–595.
- [15] Ghavifekr, S., Kunjappan, T., Ramasamy, L., & Anthony, A. (2016). Teaching and learning with ICT tools: Issues and challenges from teachers' perceptions. *Malaysian Online Journal of Educational Technology*, 4(2), 38-57. <https://files.eric.ed.gov/fulltext/EJ1096028.pdf>
- [16] Guillén-Gámez, F. D., Mayorga-Fernández, M. J., & Álvarez-García, F. J. (2018). A study on the actual use of digital competence in the practicum of education degree. *Technology, Knowledge and Learning*, 25, 667–684. <https://doi.org/10.1007/s10758-018-9390-z>
- [17] Guillén-Gámez, F. D., Mayorga-Fernández, M. J., Bravo-Agapito, J., & Escribano-Ortiz, D. (2020). Analysis of teachers' pedagogical digital competence: Identification of factors predicting their acquisition. *Technology, Knowledge and Learning*, 1–18. <https://doi.org/10.1007/s10758-019-09432-7>

- [18] Guiamalon, T. S., Alon, S. A. S., & Camsa, S. U. (2021). Teachers issues and concerns on the use of modular learning modality. *International E-Journal of Advances in Social Sciences*, 7(20), 457-469. <http://dx.doi.org/10.46529/socioint.202115>
- [19] Khalil, R., Mansour, A. E., Fadda, W. A., Almisnid, K., Aldamegh, M., Al-Nafeesah, A., & Al-Wutayd, O. (2020). The sudden transition to synchronized online learning during the COVID-19 pandemic in Saudi Arabia: A qualitative study exploring medical students' perspectives. *BMC Medical Education*, 20(1), 1-10
- [20] Khlaif, Z.N., Salha, S. & Kouraichi, B. Emergency remote learning during COVID-19 crisis: Students' engagement. *Educ Inf Technol* 26, 7033-7055 (2021). <https://doi.org/10.1007/s10639-021-10566-4>
- [21] McCarthy, J. (2019). Tech Integration in Blended Learning. [online] Edutopia. Available at: <https://www.edutopia.org/article/tech-integration-blended-learning> [Accessed 26 May 2022]
- [22] Nambiar (2020). The impact of online learning during COVID-19: students' and teachers' perspective. *International Journal of Indian Psychology*, 8(2), 783-793. DIP:18.01.094/20200802, DOI:10.25215/0802.094
- [23] Nikolopoulou, K., & Gialamas, V. (2016). Barriers to ICT use in high schools: Greek teachers' perceptions. *Journal of Computers in Education*, 3(1), 59-75. <https://doi.org/10.1007/s40692-015-0052-z>
- [24] Pentang, Jupeth & Agayon, Aina & Agayon, Angel. (2022). Teachers in The New Normal: Challenges and Coping Mechanisms in Secondary Schools. *Journal of Humanities and Education Development*. 4. 10.22161/jhed.4.1.8.
- [25] Skulmowski A., Rey G. D. (2020) COVID-19 as an Accelerator for Digitalization at a German University: Establishing Hybrid Campuses in Times of Crisis. *Human Behavior and Emerging Technologies*, vol. 2, no 3, pp. 212-216
- [26] Tosun, N., Mihci, C., Bayzan, S. (2021). Challenges encountered by in-service K12 teachers at the beginning of the Covid-19 pandemic period: The case of Turkey. *Participatory Educational Research*, 8(4), 359-384. <http://dx.doi.org/10.17275/per.21.95.8.4>
- [27] Tosuntaş, Ş. B., Çubukçu, Z., & İnci, T. (2019). A holistic view to barriers to technology integration in education. *Turkish Online Journal of Qualitative Inquiry*, 10(4), 439-461. <https://doi.org/10.17569/tojqi.613969>
- [28] United Nations Educational, Scientific, and Cultural Organization (UNESCO). (2020). COVID-19 educational disruption and response. <https://en.unesco.org/themes/education-emergencies/coronavirus-school-closures>
- [29] Varea, V., & González-Calvo, G. (2020). Touchless classes and absent bodies: Teaching physical education in times of Covid-19. *Sport, Education and Society*, 1-15.
- [30] Zaharah, Kirilova, G., & Windarti, A. (2020). Impact of Corona virus outbreak towards teaching and learning activities in Indonesia. *SALAM: Jurnal Sosial dan Budaya Syar-i*, 7(3), 269-282. <https://doi.org/10.15408/sjsbs.v7i3.15104>