
Country Report

**Borderless Classroom for Biology Teaching and Learning
in Malaysia during COVID-19 Pandemic Time with
Professional Learning Community (PLC)**

Siew Wai, KWAN*

SMK Vivekananda, Brickfields, Malaysia

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Despite the hectic which COVID-19 created since 2020, it indeed promoted great advancement in teaching and learning. Over the years, educators were working together in making lessons interesting and achievable by learners, especially those in rural areas. Somehow, due to many constraints like location, finance, transportation, accessibility and facilities, the effort seemed not rewarding as it was planned. In 2020 and 2021, schools were in lockdown, resulting in the mushroomed of virtual classes. In Malaysia, led by the Ministry of Education, followed by the District Education Departments, schools, educators and other partners, various materials for virtual classes were enhanced and developed. This seemed to facilitate a borderless classroom, especially for biology lessons. Biology teachers collaborated in conducting borderless classroom with Professional Learning Community (PLC). Biology students benefited through attending lessons guided by a few teachers which was totally different from the normal way of teaching and learning. Teachers too learned from each other through PLC to enhance their content knowledge and teaching methods. On top of that, individuals or organisations also reached out to teachers to assist in conducting virtual lesson. Joining hands of individuals and organisations from different levels, students were equipped with the knowledge and skills needed for biology. The limitations in reaching to more learners seemed broken. Further research is needed to develop a better model of virtual classroom and a feasible virtual assessment method. Perhaps, a hybrid form of classroom could be introduced in near future for biology lessons.

Key words: *biology, educational video, pedagogy, Professional Learning Community, teaching and learning*

***Dr. Siew Wai, Kwan**, Email: kwansiewwai@yahoo.com

INTRODUCTION

Due to the lockdown across the world after the striking of COVID-19, many schools were forced to go online overnight in 2020. Everyone from the Ministry of Education, educational Institutions, teachers, students and parents were forced to embrace online teaching and learning without a question (Breslin, 2021). Indirectly, those who were unable to adapt to the condition were “selected

out” in the education system (Datamonitor, 2009). This is what educators in Malaysia tried to overcome.

Despite the hectic which COVID-19 created since 2020, it indeed promoted great advancement in teaching and learning (Fiedler *et al.*, 2021). For many years, educators in Malaysia were working together in making lessons accessible by learners (Poon *et al.*, 2004) especially those in rural areas.

For example, some places in Malaysia are less accessible with no well-developed infrastructures. Due to many constraints like location, finance, and facilities, the effort of making lessons accessible to all learners did not seem rewarding as it was planned.

During the COVID-19 pandemic a digital leap pushing all educators and learners to go online and immediately conducting lessons online in various ways (Alakrash and Razak, 2021). The use of social media platforms in teaching and learning seemed dominating the education arena in this period. The urge to form a borderless classroom was raised. Virtual classroom seems catered to the urge.

PROFESSIONAL LEARNING COMMUNITY (PLC) IN ACTION

At the beginning, many problems arise about conducting and attending virtual classrooms. The problems vary from technical to facilities. Hence, the Malaysian Ministry of Education (MOE) initiated a move to call some teachers to work together in producing teaching materials for the virtual classrooms, hoping to make virtual classrooms more accessible and interesting for everyone. One of the ways in overcoming the problems was joining hands of teachers and organisations to conduct the online lessons. Hence, PLC from various levels, for example, MOE level, the Local Education Department level, and school level, simultaneously designed and conducted borderless classroom for Biology students. Soon a collaboration among the educators, parents, government and private sectors emerged during this period to ensure a high quality and accessible education in Malaysia (Wan Mohd Yunus *et al.*, 2021).

Action in MOE level

At the MOE level, activities carried out included enhancing the existing educational TV pro-

grammes. The TV programmes were designed according to the syllabus used in the national schools in Malaysia. Teachers were called to conduct lessons in the TV studio and the lessons were broadcasted live on a specific TV channel called DidikTV (initially it was called TV Pendidikan). After the live broadcasting, the lessons were uploaded to YouTube for students and teachers to access on their own paces. The TV programmes reached out to students regardless of location and time. Many students from rural areas benefited from the TV programmes. Figure 1 shows a situation at the studio while doing live broadcasting of a lesson. A few students were selected to follow the lesson, and the teacher was conducting the lesson by interacting with the students. Meanwhile, many more students all over Malaysia could follow the live lesson from YouTube.

Besides enhancing the existing educational TV programmes, MOE also gathered some Biology teachers to develop Biology modules for self-paced learning through PLC. A group of teachers worked together in producing modules for Biology learning and distributed them through social media for the students to do self-paced learning at their own locations. The modules include some notes and worksheets for teachers and students. After the modules were prepared, they were uploaded to Google Drive for the access of other teachers.



Figure 1: Recording at DidikTV studio for Biology subject
Source: <https://www.youtube.com/watch?v=9ALKJW-HLbU&t=674s>

This development of modules with PLC reduced the workload of teachers in preparing material for the virtual classes. At the same time enabled students from rural areas to conduct self-pace learning with minimal help from teachers. Figure 2 shows examples of the modules developed.

Action in district level

In terms of district level, district education departments called out the biology teachers from each district to conduct online tuition for students within the same district. Hence, teachers from various areas of the district collaborated in conducting online tuition. Figure 3 shows a screen shot of online tuition recorded and uploaded to YouTube. The lessons conducted were broadcasted live, whereas the recording of the lessons was uploaded to YouTube for further reference by teachers and students all over Malaysia.

Action in school level

Meanwhile, some biology teachers from the Kuala Lumpur regions work out another PLC activity. A combined biology class was planned and designed to cater the needs of the students at the Kuala Lumpur regions. Through this combined

biology class, teachers from four schools at Kuala Lumpur were collaborating and working together to conduct lessons for their students. Figure 4 shows a screen shot of a lesson being conducted online. The combined class provide opportunities for interactions among teachers and students. This improved the Biology content knowledge and skills among the teachers and students. In addition, the combine class contributed to engaging the teachers in given lessons during the pandemic, at the same time providing a borderless classroom for the students. The effort of having activity like this contributed to the development of teachers' experience in teaching and learning as what reported by Othman *et al.* (2020).

With the PLC collaboration at the ministry, district and school levels, Biology teachers and students were exposed to a borderless platform in knowledge sharing and development. Students and teachers at rural places in Malaysia could access to the materials through the internet or social media and conduct lessons or self-pace learning without actual classes.

Below is a diagram to show the summary of the stages in human menstrual cycle.

a Based on the above diagram, name the structures A, B, C and D. [4m]

A :

B :

C :

D :

b Explain the relationship between the breakdown of the endometrium on the first four days of a menstrual cycle with the concentration of progesterone. [2m]

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BAB 17 STRUKTUR DAN FUNGSI DAUN

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Struktur Daun

Sudut Guru
Pokok Baobab Yang dijumpai di Afrika dapat menyimpan 1,000 hingga 100,000 liter air dalam batangnya yang bengkak.

Organ Utama Pertukaran Gas
Stoma ialah liang-liang kecil yang terbentuk antara dua sel pengawal. Sel pengawal berbentuk kacang dan mempunyai dinding sel yang tidak sama tebal. Sel pengawal berbeza daripada sel epidermis lain kerana sel pengawal mempunyai kloroplast dan menjalankan fotosintesis.

Mekanisme Pembukaan Stoma

Figure 2: Examples of modules developed for self-pace learning

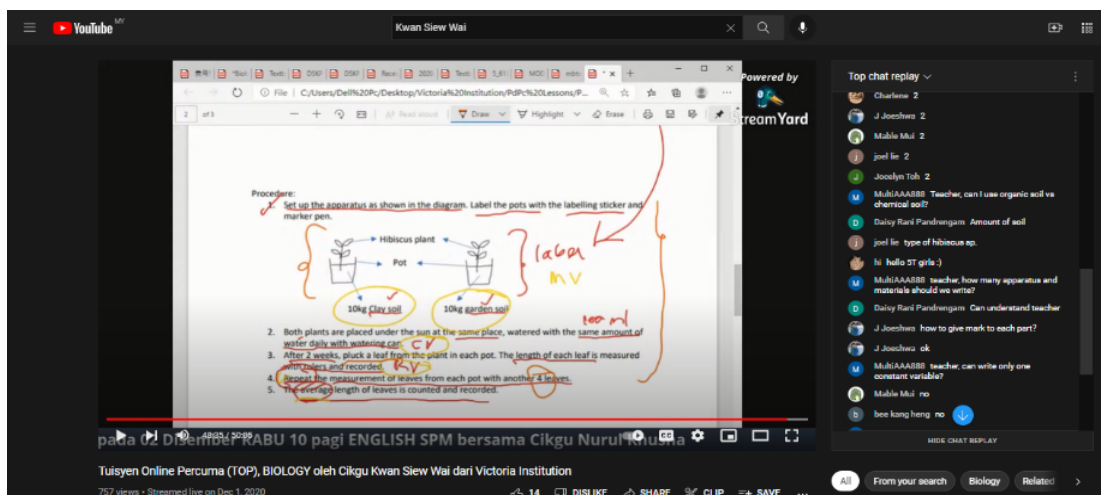


Figure 3: Online tuition for Biology subject organised by a district education department
 Source: <https://www.youtube.com/watch?v=SPRJpCkN25s&t=2529s>

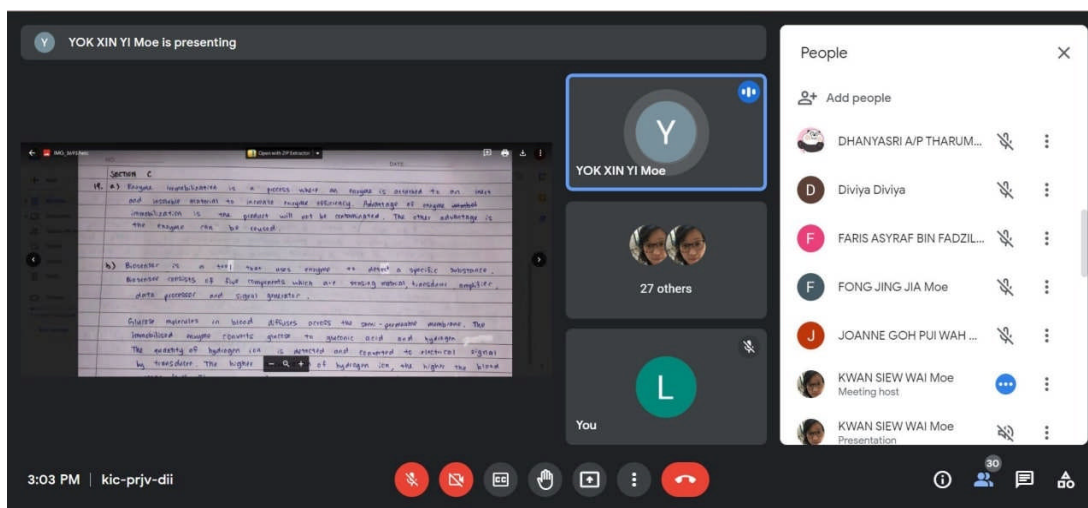


Figure 4: Combined biology class conducted by four teachers from different schools at Kuala Lumpur

CHALLENGES FACED

After two years of virtual classes, there are some challenges faced by teachers and students. For example, teachers and students as yet having a problem in accessing to the virtual classes or an online material due to interrupted internet connection or lack of devices to access to the internet. Similar challenge was also found in the research at Austria (Trültzsh-Wijnen and Trültzsh-Wijnen, 2020). Hence, many parties came in to help overcoming this problem. Government bodies, private

companies and religious organisations help in donating mobile phones and laptops for students. Telecommunication companies gave discount to data packages or provide free data for students attending virtual classes. With these helps (from various sectors), virtual classes were commenced successfully to every corner of Malaysia. This was how borderless classroom established in Malaysia. More study of how to improve and enhance the implementation of the virtual classes in the future for better performance is needed.

REFERENCES

- Alakrash, H. M., and Razak, N. A. (2021) Education and the fourth industrial revolution: Lessons from COVID-19. *Computers, Materials and Continua* **70**(1): 951–962.
<https://doi.org/10.4324/9781003121343>
- Breslin, T. (2021) *Lesson from Lockdown: The Educational Legacy of COVID-19*. Routledge.
<https://doi.org/10.4324/9781003121343>
- Datamonitor (2009) *Malaysia: Country Analysis Report - In-Depth PESTLE Insights, (September)*, pp. 1-81.
<https://doi.org/10.4324/9781003121343>
- Fiedler, S. T., Thomas, H., and Bogner, F. X. (2021) COVID-19 and Lockdown Schooling: How Digital Learning Environments Influence Sematic Structure and Sustainability Knowledge. *Discover Sustainability* **2**: No. 32.
<https://doi.org/10.1007/s43621-021-00041-y>
- Hassan, R., Ahmad, J. and Boon, Y. (2019) Instructional leadership practice and professional learning community in the southern zone of Malaysia. *Universal Journal of Educational Research* **7**(12A): 42–50.
<https://doi.org/10.13189/ujer.2019.071906>
- Othman, S., Jamian, A. R., Sabil, A. M., Said, R. R. and Omar, R. (2020) Professional learning community (PLC): Approach to enhance students' achievement in language learning at public university, Malaysia. *Universal Journal of Educational Research* **8**(1A), 8–15.
<https://doi.org/10.13189/ujer.2020.081302>
- Poon, W. C., Low, K. L. T. and Yong, D. G. F. (2004) A study of Web-based learning (WBL) environment in Malaysia. *International Journal of Educational Management* **18**(6): 374–385.
<https://doi.org/10.1108/09513540410554031>
- Trültzsh-Wijnen, C. W. and Trültzsh-Wijnen, S. (2020). *Remote Schooling During The COVID-19 Lockdown in Austria (Spring 2020)*. KiDi-CoTi National Report.
<https://doi.org/10.25598/KiDiCoTi-AT-2020-1>
- Wan Mohd Yunus, W. M. A., Badri, S. K. Z., Panatik, S. A. and Mukhtar, F. (2021) The Unprecedented Movement Control Order (Lockdown) and Factors Associated with the Negative Emotional Symptoms, Happiness, and Work-Life Balance of Malaysian University Students during the Coronavirus Disease (COVID-19) Pandemic. *Frontiers in Psychiatry* **11** (February): 566221.
<https://doi.org/10.3389/fpsy.2020.566221>