K-12 teachers conducting remote teaching in Thailand during the pandemic: The strategies, challenges and future directions

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Abstract
This paper reports on a case study that examined the challenges faced and strategies adopted by Thai teachers when remote teaching during the COVID-19 pandemic. It further provides a comprehensive strategy for addressing the ongoing global pandemic in terms of education. We used a mixed methods design to collect both quantitative and qualitative data from K-12 Thai teachers (N = 235) and performed 42 semi-structured interviews. The results indicated that most Thai teachers have the necessary knowledge to design suitable content for remote teaching. However, they must further develop their administration and leadership skills. The main challenges and strategies for Thai teachers remain in the areas of student motivation, assessment, and classroom management. Furthermore, ranking from high to low, Thai teachers preferred face-to-face instruction, blended/hybrid instruction and hyflex among different instructional delivery modalities. We conclude the paper by discussing possible alternative instructional delivery modalities and their implications for K-12 remote learning and instruction.

Keywords
remote teaching, remote teaching challenges, remote teaching strategy, distance learning, K-12 education, case study, COVID-19

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Background

The COVID-19 pandemic has impacted all sectors of life, including education. During this time, a new norm for education came about in most countries, including Thailand. Thailand’s education policy during the early (Jan–June, 2020) and middle stages (July–November, 2020) of the pandemic was a nationwide adaptation of remote learning modalities, as well as the development of new instruction in the K-12 context. For kindergarten and primary school students (grades 1–6), the new pedagogical method was one-way communication with hands-on learning exercises and homework delivered through TV broadcasting. Secondary school students (grades 7–12) used two-way communication via different technological platforms, including the Thai digital education excellence platform, Google Classroom and Microsoft Teams. According to a previous study, Thai people are increasingly adopting online and mobile technology throughout the quarantine period. Although they had positive attitudes toward the use of these technologies, some experienced moderate to high levels of anxiety or stress (Chayomchai et al., 2020). Some higher education research also find a strong need for guidelines in online teaching when numerous constraints and challenges are encountered during the transition, such as gaps in online access, increased dropout risks, peer support and curriculum re-development issues (Wintachai et al., 2020).

During the pandemic, instructional delivery methods became a significant topic of discussion. Commonly used instructional delivery modalities in Thailand include face-to-face, online and blended delivery (both face-to-face and online instructional components), synchronous remote teaching, asynchronous remote teaching and synchronous hybrid learning (with some students in the classroom and other students learning synchronously online at home). Having experienced different types of instructional delivery modalities for their instruction, Thai teachers’ perspectives and preferences are critical to any transformation in education. However, very little research has been done on the challenges and strategies related to remote teaching in the Thai K-12 context, especially in the form of empirical investigations.

This case study therefore explores challenges faced and strategies applied by Thai K-12 teachers, as well as their perspectives on instructional delivery modalities for future instruction during the COVID-19 pandemic. It contributes to better understanding of challenges and opportunities in a disruptive situation such as the pandemic and illuminates teaching and learning preparation for any unexpected disruptive situations in the future.

Literature review

Remote teaching

The COVID-19 pandemic gave rise to a wide range of challenges in education, with 188 countries around the world shutting down their schools, thereby directly impacting the lives of almost 1.6 billion children and their families (Gouëdar et al., 2020). K-12 schools experienced the biggest disruption of education systems in history. To cope with the pandemic and the situation created in education, many countries adopted different ‘hybrid’ or blended modalities of education.

These modalities of teaching applied in the midst of the pandemic ranged from (a) fully online learning, (b) distance learning (printed materials, radio or TV), (c) hybrid/blended/hyflex learning, (d) synchronous hybrid learning and (e) face-to-face learning. Most of these teaching modalities can be categorised as ‘remote teaching’ (Hu, 2014). Among the remote instructional modalities (b–d), blended courses comprised between 30% and 79% of online content delivery (Allen et al., 2007), while a hybrid-flexible (hyflex) course is defined as a class that allows students to choose whether to
attend the class in the actual classroom with peers and instructor, or to learn online by themselves – synchronously or asynchronously. A hyflex modality can be considered a multimodal delivery solution (Beatty, 2019), while synchronous hybrid learning is a sub-category of hyflex courses that offers both on-site and remote options in which students can simultaneously participate in learning activities (Raes et al., 2020). In this study, K-12 educators across the country utilised different remote instruction, based on their situations and contexts.

In online learning, learner participation can be influenced by issues such as the technology used, the student’s content experience, student roles and instructional tasks and information overload (Vonderwell and Zachariah, 2005). This is shown by a large body of literature that has investigated teacher knowledge on the reciprocal relationship between the content (actual subject matter), the process and methods of teaching and learning, and flexible technology. The framework comprising these elements is called the technological pedagogical content knowledge framework (TPCK; Mishra and Koehler, 2006). The recent pandemic posed significant challenges in terms of the design of online learning activities with pedagogical content knowledge, as well as the need to adapt assessments to meet new requirements (Rapanta et al., 2020). Considering the use of information technology in educational practice, teachers might consider using online collaboration tools based on the task involved, including research, collaborative creation, communication, project management, resource management and presentation (Hu, 2014) as well as the online subject matter content tool. Another consideration relates to evaluation tools; there are different methods used for students’ assessments, within the following five categories: written assignments, online discussion, fieldwork, quizzes and exams and presentations. These assessments aim to ensure that data is collected to serve as evidence to inform assessment and judgements, as well as to provide students with adequate feedback (Kearns, 2012).

Challenges and the need for support

Aside from teachers’ understanding of how to construct pedagogical content, a technical system that works, interaction and communication, administration and leadership are some of the highlights. There are various aspects that influence how satisfied an institution – and its stakeholders, including students, teachers, parents and policymakers – is with its online teaching and learning environment (Bolliger and Wasilik, 2009; Greenhow et al., 2020). Another topic to consider is the ethical issue of distance learning strategies. The questions of how well technological, content, pedagogical and home-based learning support, as well as monitoring and evaluation, are being prepared, must be answered. For example, inequitable access to tools, materials and resources among students might affect student motivation and engagement (Code et al., 2020); therefore, we must ensure equity among face-to-face and online students who complete learning activities, as well as their right to access learning support to sustain immediate distance learning responses and reach long-term goals (Binnewies and Wang, 2019; UNESCO, 2020a). Our study also highlighted the factor of social support, which is key to both teacher and student well-being. Supportive teaching behaviours show good teaching and emphasises the well-being of students. There are several types of social support, including emotional support, self-esteem and self-efficacy support, network support, information support and tangible support with physical assistance (Lam, 2019). These can all be considered as strategies to help Thai teachers in their remote teaching.

This case study highlights lessons learnt during the COVID-19 pandemic, including the important challenges faced by K-12 teachers in Thailand and the strategies they used to overcome these challenges. This study also provides suggestions and recommendations for future remote teaching to better cope with emergency situations, particularly in developing countries. The findings
of this study could be useful to stakeholders such as policymakers, instructional designers and K-12 instructors to prepare for a new norm of teaching and learning.

**Methodology**

**Research questions and research design**

This case study was designed to examine the challenges faced and strategies applied by K-12 teachers in Thailand in remote teaching during the COVID-19 pandemic. We pose the following research questions:

1. **RQ 1:** What are the challenges Thai K-12 teachers faced when remote teaching during the COVID-19 pandemic?
2. **RQ 2:** Which strategies helped Thai K-12 teachers in their remote teaching during the COVID-19 pandemic?
3. **RQ 3:** What are Thai K-12 teachers’ preferences on delivery modalities in the ‘new normal’?

This study adopted a case study-mixed methods design (Guetterman and Fetters, 2018) in which explanatory sequential mixed methods (Creswell and Clark, 2011) are used. Two types of data were combined to provide new inferences and a more comprehensive understanding. During the first phase, quantitative data were collected using an online survey. Further, qualitative data were gathered through semi-structured interviews to clarify the earlier quantitative findings and provide a comprehensive explanation of the case within the context of Thai K-12 teachers. The survey and the interviews were completed during December 2020 and January 2021.

**Survey instrument and interview**

The instrument used for quantitative data collection was a self-reported questionnaire comprising four sections: (1) Demographic Information, (2) Students’ Readiness, (3) Remote Teaching Challenges and Strategies and (4) Remote Teaching Self-Report. Students’ Readiness had four items surveying student’s technologies, Internet access and quality, ability to use technologies and self-regulated remote learning. Remote Teaching Challenges and Strategies comprised early and current pandemic challenges, needs for support and uses of technological tools. The nine items in the remote teaching self-report section evaluated the early and current pandemic challenges, needs for support and uses of technological tools. The nine items in the remote teaching self-report section evaluated the early and current pandemic challenges, including learning pedagogy, students’ assessment, online content delivery and presentation, learning media, providing students’ feedback, communication, learning time management, remote class management and students’ motivation. Another 14 items related to need for support address needs for community support, instruction support and emotional support. Considering the use of technological tools, eight items focussed on the frequency of using online tools for remote teaching, including research, collaboration, communication, learning management, resource management, presentation, evaluation and specific content delivery. Additionally, a checklist was used to survey the graded assessments used. Concerning the teacher remote teaching, the self-reported questionnaire comprised 23 items, including the 11 TPCK items (pedagogical, content and technological), five interaction and communications items, three administration and leadership items and four ethical issues items. The TPCK scale was adapted from the short assessment instrument for technological pedagogical content knowledge (TPACK.xs) (Schmid et al., 2020) to suit a remote
teaching setting. The administration and leadership items were adapted from (Online Learning Consortium, 2014). Others items were developed by the authors. The remote teaching self-report was evaluated by three experts using an item objective congruence index.

A survey invitation was posted on a public Facebook community group of Thai teachers – with an estimated 14,800 members – via Google Forms, an online survey tool. After participants accepted the invitation, information sessions about the research project were conducted. All participants provided informed consent to take part in research by completing the anonymous online questionnaire Table 1.

In terms of the data analysis, the first phase quantitative data were analysed using IBM® SPSS® Statistics 24 software, including descriptive statistics (percentage, mean and standard deviation [SD]) to answer all the research questions. For the qualitative research section, 40 in-service teachers were purposively selected for face-to-face interviews. All teachers were asked to answer five semi-structured interview questions via phone or online meeting tools, and for permission to audio record the interview. The qualitative data were collected and analysed through a manual text coding process using NVivo software to help either explain or validate the initial quantitative findings. The sample questions were: What is the most challenging thing about online teaching during the COVID-19 outbreak? Any suggestions or strategies that you think can actually be applied? What is the impact of COVID-19 on teaching and learning at K-12 level in your opinion?

Results

First, we must understand the participants’ characteristics to provide a general picture of their background and experience.

Research participants

We used quota sampling to select 235 participants from four regions in Thailand; participants were all K-12 Thai teachers of different ages and with various years of teaching experience, who taught remotely (including hyflex) during the early and current pandemic periods. According to the survey results shown in Table 2, approximately 46.8% of teachers were aged 30–40, 30.6% were aged 26–30, 13.2% were aged 41%–50% and 3.4% were older than 50. A large percentage of participants (41.3%) was defined as ‘mid-career’ in terms of experience, 34.9% were ‘early career’ and another

| Survey category | No. of items | Item format | Ranges |
|-----------------|--------------|-------------|--------|
| Demographic     | 6            | Multiple answers |          |
| Students’ readiness | 4         | Likert Scale (1–5) | ‘Strongly disagree’ to ‘strongly agree’ |
| Early and current pandemic challenges | 9 | Likert Scale (1–5) | ‘Not a challenge at all’ to ‘a major and serious challenge’ |
| Needs of support | 14         | Likert Scale (1–5) | ‘Not at all’ to ‘need very strongly’ |
| Uses of technological tools | 8 | Likert Scale (1–5) | ‘Never use’ to ‘always use’ |
| Teacher remote teaching self-report | 23 | Likert Scale (1–5) | ‘Strongly disagree’ to ‘strongly agree’ |
| Total items     | 64          |             |        |
15.7% of teachers were in their probation period; 8.1% were ‘senior’. Participants were required to select their primary level of teaching if they were teaching at different levels – such as teaching at both higher-secondary and lower-secondary schools. More than half (63%) were higher-secondary school teachers, nearly half (47.2%) were lower-secondary school teachers; smaller percentages were higher-primary school teachers (16.2%), while 14.55% were lower-primary school teachers; only 3.8% were kindergarten teachers.

Of the 235 participants, 42 were purposively selected for the virtual interviews. The majority of these virtual interviewees were from Thailand’s central region (n = 32), with others from the south (n = 8) and north (n = 3); their ages were in the range 26–30 (n = 9) and 30–40 (n = 33); there were kindergarten teachers (n = 2), lower-primary school teachers (n = 6) and secondary school teachers (n = 34). In the following section, we report the findings of the semi-structured interviews to blend the quantitative data from the self-report questionnaire with the qualitative data from the interviews in an explanatory sequential mixed-method design to provide a comprehensive picture.

**Challenges Thai K-12 teachers faced**

The quantitative statistical results reveal the challenges identified through the survey. Table 2 presents the teachers’ remote teaching skills according to their needs for support. The data indicated that teachers’ overall remote teaching skills were moderate (M = 3.38, SD = 0.46). Teachers have the most knowledge in designing content for remote teaching (M = 3.53, SD = 0.55), while they reported their poorest skills to be administration and leadership (M = 3.29, SD = 0.61). The teachers’ overall needs for support is high (M = 3.84, SD = 0.71). The data also revealed that the greatest demand was for instructional support (M = 4.05, SD = 0.77), followed by emotional support (M = 3.91, SD = 0.90) and community support (M = 3.56, SD = 0.77). The results from the interviews corroborate the survey results, in which teachers report a strong need for instruction support related to online learning and a teaching management programme, teachers’ technological readiness and teachers’ ability to deal with materials and learning resources. Moreover, parental cooperation is strongly needed. Parents’ supervision and guiding their children to be self-directed learners are very important.

| Skills and needs                        | N  | M     | SD  |
|----------------------------------------|----|-------|-----|
| Pedagogical                            | 235| 3.37  | 0.50|
| Content                                | 235| 3.53  | 0.55|
| Technological                          | 235| 3.35  | 0.54|
| Interaction and communications          | 235| 3.37  | 0.56|
| Administration and leadership          | 235| 3.29  | 0.61|
| Ethical issues in remote teaching       | 235| 3.37  | 0.54|
| Overall teachers’ remote teaching skills| 235| 3.38  | 0.46|
| Needs of community support             | 235| 3.56  | 0.77|
| Needs of instruction support            | 235| 4.05  | 0.77|
| Needs of emotional support              | 235| 3.91  | 0.90|
| Overall teachers’ needs of support      | 235| 3.84  | 0.71|

Notes: M = median; SD = standard deviation.
To determine what challenges teachers experienced in the early and middle (Jan–Nov, 2020) and current (December 2020–January 2021) periods of the pandemic, we compared challenges regarding both times (Table 3). There was a significant decrease in the learning pedagogy, students’ assessment, online content delivery and presentation, learning media, providing students’ feedback, communications and learning time management variables in the current pandemic period, compared with the early pandemic ($p < 0.05$). However, no significant relationship was identified between remote class management and student motivation, implying that these two variables remain the primary issues faced by teachers. The results clarified that the top three issues remain student motivation (M = 3.86, 3.79, SD = 0.96, 0.93), student assessment (M = 3.80, 3.60, SD = 0.95, 0.99) and class management (M = 3.64, 3.48, SD = 0.97, 0.97).

Next, we present the quantitative results together with a discussion of the qualitative findings that either confirm or disconfirm the statistical results. Concerning students’ assessment, one participant expressed their concern about learning assessments and evaluations, asking questions such as ‘how to do it, how to be able to measure well and the learners can actually learn?’ Some of them suggested using:

‘...assessment with only one effective task per unit’ and the use of ‘authentic assessment to measure learning outcomes based on real situations’.

Regarding learning time and remote classroom management, some participants stated that:

*When ‘context and environments are not conducive to student learning / time and place constraints’ which ‘classroom management efficiency is reduced’, ‘difficulty controlling class’ teachers need to ‘design teaching methods and media to suit the content and context of learners according to the time constraints’.*

The qualitative data also suggested that students lack motivation in learning due to factors that include learning engagement, interaction and responsibility in learning. Some participants

| Challenges                                      | Early pandemic (2020) | Current pandemic (2021) | t-test |
|-------------------------------------------------|-----------------------|-------------------------|-------|
|                                                 | M        | SD       | M        | SD       |       |
| Learning pedagogy                              | 3.59     | 0.89     | 3.38     | 0.93     | 0.01*  |
| Students’ assessment                           | 3.80     | 0.95     | 3.60     | 0.99     | 0.00** |
| Online content delivery and presentation        | 3.48     | 0.91     | 3.25     | 0.97     | 0.00** |
| Learning media                                 | 3.38     | 0.95     | 3.21     | 0.95     | 0.00** |
| Providing students’ feedback                   | 3.60     | 0.88     | 3.41     | 0.93     | 0.00** |
| Communications                                 | 3.51     | 0.97     | 3.42     | 0.98     | 0.01*  |
| Learning time management                       | 3.44     | 0.97     | 3.22     | 1.01     | 0.00** |
| Remote class management                        | 3.64     | 0.97     | 3.48     | 0.97     | 0.14   |
| Students’ motivation                           | 3.86     | 0.96     | 3.79     | 0.93     | 0.22   |

*p < .05, **p < .01.
mentioned difficulties related to students’ readiness and interest, as well as students’ discipline and duties in remote instruction. One of them suggested the need to enhance:

‘…interaction with learners during learning management, for example, students do not turn on the camera, students do not answer questions, etc.’ thorough ‘communication between teachers, parents, students...’

Strategies that helped Thai K-12 teachers in remote teaching

To address the challenges, we also asked teachers to report on students’ remote teaching readiness; this included their capacity to access technologies to complete remote learning tasks (such as smartphone, laptop, desktop computer or tablet), stable Internet connections, their ability to use technologies and self-regulated remote learning. We found two factors to be major concerns. Students’ self-regulated remote learning had the lowest score (M = 2.76, SD = 1.01), followed by stable Internet connections (M = 3.11, SD = 1.14). The results of the survey are summarised in Table 4.

Another concern regarding the pedagogical perspective is students’ assessment. The survey reported the highest form of assessment used in remote teaching to be tests, quizzes or exams (69.8%) and the lowest to be fieldwork (9.4%). A group of teachers coped with finding a suitable modality for teaching assessment. Table 5

Other challenges

Challenges in designing remote teaching activities also included the pedagogy of teaching remotely and the design of learning outcomes. The teaching modalities that work well or did not work well were identified in the survey. As shown in Table 6, communication tools were found to play a prominent role among different types of online tools (M = 4.33, SD = 0.87), while collaboration tools and specific content delivery tools seem to be used less in remote teaching (M = 2.88, 2.48, SD = 1.15,1.15). Information technology in educational practices is a vital aspect in designing remote instruction, as this section explains. Many interviewees emphasised the importance of selecting meaningful learning materials to ensure that students comprehend the information entirely in their remote learning surroundings. Teachers recommended employing approaches such as adapting trending apps and using short clip videos with a single consistent platform.

### Table 4. Means and SDs of students’ remote learning readiness.

| Readiness factors                          | N    | M    | SD  |
|--------------------------------------------|------|------|-----|
| Technologies                               | 235  | 3.78 | 0.96|
| Stable internet connections                | 235  | 3.11 | 1.14|
| Capable of using technologies              | 235  | 3.47 | 1.03|
| Self-regulated remote learning             | 235  | 2.76 | 1.01|
| Overall students’ remote teaching readiness| 235  | 3.38 | 0.46|
Preferences for delivery modalities

Our survey also asked teachers to review all the delivery modalities of teaching during the pandemic in different periods of time; early (Jan–June 20), second stage (July–Nov 20) and current (Dec 20–Jan 21). During the early period of the pandemic, there were various modalities of teaching, including 28.1% fully online, 11.5% distance learning, and 46.8% blended/hybrid. When the situation became more under control due to the government ‘flattening the curve’ (July, 2020), many schools responded to the immediate challenge of reopening. There were an increasing number of schools who decided to go back to the on-site modality (43.4%), while many schools were still choosing the blended/hybrid modality (43.8%). After a new wave of COVID-19 in Thailand from mid-December 2020 to January 2021, most schools switched to fully online teaching (58.3%), the highest record of fully teaching online among the three periods of the pandemic. Interestingly, the results (Table 7) indicated that blended/hybrid teaching was the most popular among the five modalities during the three periods, as described in the literature review (46.8%, 43.8% and 34%, respectively). The distance learning modality (television and e-mail) was only popular at the start of the pandemic (11.5%), while the hyflex modality was popular in the middle period. The choices between fully online and on-site depended upon the situation of the pandemic.

Interestingly, the data on teacher’s preference suggested that most teachers seem to prefer teaching face-to-face (on-site; 57.9%) when the pandemic ends. However, blended/hybrid (online+F2F) and hyflex (online and F2F synchronously) ranked second and third (19.6%, 19.5%) consecutively. Rather than simply listing, there was a stronger link between the points being stated as some participants said:

| Table 5. Frequency of graded assessments used in remote teaching. |
|---------------------------------------------------------------|
| **Graded assessment format**                                | **N** | **%** |
| Students’ presentation                                      | 98    | 41.7  |
| Test/quiz/exam                                               | 164   | 69.8  |
| Fieldwork                                                    | 22    | 9.4   |
| Online discussion                                            | 152   | 64.7  |
| Written assignment (worksheet/exercise)                     | 119   | 50.6  |

| Table 6. Means and SDs of online tools used in remote teaching. |
|---------------------------------------------------------------|
| **Online tools**                                              | **N** | **M** | **SD** |
| Research and search                                          | 235   | 3.48  | 1.15   |
| Collaboration                                                | 235   | 2.88  | 1.15   |
| Communication                                                | 235   | 4.33  | 0.87   |
| Learning management                                          | 235   | 3.63  | 1.24   |
| Resource management                                          | 235   | 3.68  | 1.17   |
| Presentation                                                 | 235   | 3.17  | 1.18   |
| Evaluation                                                   | 235   | 3.63  | 1.15   |
| Specific content delivery                                    | 235   | 2.48  | 1.15   |
‘...uncertainty in the next academic year that you will be taught in a normal classroom or need to continue teaching online’. Some agreed on the on-site modality: ‘The understanding that arises from on-site teaching is more effective including measurement and evaluation, more efficient and convenient than online’. Some other participants, however, felt that online learning could be beneficial, which included ‘developing self-efficacy in learning management’, ‘students can learn anytime, anywhere’, ‘reduce barriers, restrictions on location and time’. Some participants first proposed the hyflex modality: ‘students have good study flexibility in hyflex learning’, ‘teachers and learners expand the world of teaching and learning more’, ‘causing them to learn new teaching styles and technologies’.

However, there are some concerns regarding the utilising of new modality of teaching and learning:

‘...is the current curriculum development suitable for online teaching’, the lack of guidelines from the policy maker’, ‘the education policy maker should have long-term planning for the situation and inform those involved and have time to prepare’. Some addressed the health situation ‘...excessive physical condition or use of the eyesight on the computer’. However, there are many positive opinions: for example, ‘...the use of new technology programmes for teachers and learners’, ‘teachers and students prepare for the way of learning in the future world which is not limited to being in the classroom’, ‘development of teaching materials and teaching methods’, ‘collaboration between parents and teachers to continually develop children during the COVID period’.

### Table 7. Frequency of models of teaching during pandemic.

| Models of Teaching | Fully online | Distance learning (television/Mail) | Blended/hybrid (Online+F2F) | Hyflex (online and F2F synchronously) | On-site (F2F) |
|-------------------|-------------|-----------------------------------|-----------------------------|---------------------------------------|---------------|
| n                 | %           | n                                 | %                           | n                                     | %             |
| Early Stage       |             |                                   |                             |                                       |               |
| (Jan–June 20)     | 66          | 28.1                              | 27                          | 110                                   | 46.8          |
| Second Stage      |             |                                   |                             |                                       |               |
| (July–Nov 20)     | 29          | 12.3                              | 7                           | 103                                   | 43.8          |
| Second Stage      |             |                                   |                             |                                       |               |
| (Dec 20–Present)  | 137         | 58.3                              | 17                          | 80                                    | 34.0          |

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**Discussion**

Based on the survey results and interview data, the current study found that most teachers already have the knowledge required to design pedagogical teaching content in remote teaching. However, they must improve their administration and leadership skills to be prepared to teach in the future. Teachers were also shown to have high support needs, with instruction support being the most important, followed by emotional support and community support. This finding demonstrates the stakeholders’ strong support and teamwork. This is echoed by research from Indonesia that highlights the need for support and collaboration from all stakeholders, including government, schools, teachers, parents and the community (*Rasmitadila et al., 2020*). Psychosocial support is necessary in teachers’ professional relationships during crisis response to generate good...
relationships among teachers, learners and caregivers (UNESCO, 2020b). Previous research reports better teacher–student relationships when teachers provided emotional regulation and relationship management as part of emotional and social support (Aldrup et al., 2020). It can be seen that, during the challenging times of the pandemic, teachers’ social and emotional competence and well-being might be the key to healthy teacher–student relationships, effective classroom management and effective social–emotional learning implementation (Schonert-Reichl, 2017); this aspect should be considered in future teacher development. In other words, it is vital to enhance both teacher and student well-being, to increase social–emotional competence and to augment resilience to learning difficulties and challenges before, during and after crises (Collie and Perry, 2019).

Considering teaching practices from the early and current stages of the pandemic, it was found that the top three challenges teachers faced amidst the pandemic were student motivation, student assessments and class management. Other challenges included learning pedagogy, online content delivery and presentation, learning media, providing students’ feedback, communications and learning time management. We addressed certain lessons learnt from the early and current pandemic periods in each challenge to assist us in understanding the big picture (Figure 1).

The results of this study match those observed in earlier studies in terms of learners having their own learning purposes, needs and learning styles, due to their different educational and social backgrounds. Therefore, instructors and course designers must ensure the support of diverse learners to create a digital culture (Toprak et al., 2010). The findings observed in this study are also consistent with an international setting. Findings from China report that China’s elementary and secondary schools faced setbacks when preparing and organising online teaching programmes. In the face of a new pedagogical modality transition, frontline instructors have a high degree of psychological adaptation (Song et al., 2020). In Norway, Langford and Damşa (2020) report that their teaching methods changed significantly, with technological challenges and pedagogical insecurity presenting as the main issues when setting up online teaching. To meet teaching and learning goals, UNESCO, 2020a suggests that teachers assess the learning outcomes, manage remote instruction, adjust formative assessment, prepare teachers for pedagogical shifts, support disadvantaged groups, boost the technological capacities, ensure equity and inclusion and protect learners’ privacy and data security and support teachers for distance learning.

Figure 1. Bar chart of teachers’ preference on delivery modalities.
Factors related to students were also identified as major challenges in remote learning. We asked teachers to report on their students’ readiness to learn remotely, including their access to the necessary technologies (smartphone, laptop, desktop computer or tablet), stable Internet connections, their ability to use technologies and self-regulated remote learning to complete remote learning tasks. We identified two significant concerns: students’ self-regulated remote learning received the lowest score, followed by unstable Internet connections.

Our findings on self-regulated learning are in alignment with Churiyah et al.’s (2020) work. This work finds that students who scored low in self-regulated learning were less able to regulate their distance learning activities at home. A previous study also reports that the academic factors in similar learning goals and achievement gaps would impact online self-regulated learning activities (Wang, 2021). To develop self-regulated learning in online learning environments, Carter et al. (2020) state that students must consider how they learn online, be provided with pacing support, must be monitored for engagement, and must receive family support. Another possible explanation of the results might be an issue related to ethics in learning. When teachers conduct distance teaching and online teaching, online teaching environments amplify the ethical issues faced by instructors and students (Anderson and Simpson, 2007). The schema on ethical issues lead to a matter of equity and diversity, surveillance and consent, and identity and confidentiality to strengthen the resilience of education. Equity issues include students with disabilities or special needs, students at greater risk of severe illness, mental health support, food insecurity and child nutrition, lack of access to Internet/technology such as availability of computers, laptops or tablets, greater risk of severe illness and language barriers (Di Pietro, 2020; Li et al., 2020). Hence, a system is still needed to enable equitable and sustainable development, which is one of the key drivers of sustainable development in an inclusive society (United Nations, 2020).

The majority of the teachers in this study would continue to teach in the face-to-face (On-Site) format, according to the findings. Blended/hybrid (Online+F2F) and hyflex (Online and F2F simultaneously) are placed second and third, respectively, among all delivery modalities (19.6% and 19.5%). Teachers responded to this paradigm by using a variety of teaching and learning resources that are aligned with national curricula and delivered via online platforms, television or radio programmes or print-based home learning.

The results of Thai teachers seem to be consistent with findings from different countries, such as Turkey, where synchronous lessons are viewed as beneficial with a positive social interaction, motivating atmosphere and opportunities to ask questions in real time (Fiş Erümit, 2020). Previous research also shows that during the pandemic, reduced-schedule practices were generally perceived to be less feasible than within-school practices for K-12 schools (Uscher-Pines et al., 2020). Chinese primary and secondary schools, however, might be different. It has been found that teachers are willing to incorporate and normalise online teaching in their daily teaching practice, once the pandemic is over (Yang, 2020). While many teachers agreed that the uncertain situation might prevent the schools from fully operating in a face-to-face configuration again, this research discussed the possibility of a new modality.

As seen from the empirical results, blended/hybrid and hyflex teaching seem to be a choice for the ‘next normal’ among students in K-12 learning. The terms ‘mixed-mode learning’, ‘blended learning’, and ‘hybrid learning’—which is a combination of online and face-to-face teaching—have arisen. We have also seen the forced move to online learning as a catalyst for creating a new, more effective hybrid modality of education in the future (Kaden, 2020). For example, we found the synchronous hybrid teaching is arisen during the period, in which two settings are equipped with educational technology. This is called hyflex teaching, which refers to courses that are designed for online as well as face-to-face modes (hybrid), and allows students to complete the course in either or both of these modes (flexible; Binnewies and Wang, 2019; Raes et al., 2020). Hereby, the new
delivery modalities for completing learning activities in future is starting to be revealed. During the trying period of the ongoing pandemic, instructors who have acknowledged being in survival mode require quick access to tutorials, best practices, and professional development (Prokes and Housel, 2021). In terms of adjustments, the World Bank (2020) described five major actions: acting on the short and medium-term, mobilising widely used (mobile first), setting up a one-stop shop of resources, curating existing content and gathering feedback, and communicating and providing guidance.

This study revealed the challenges and strategies faced by K-12 teachers, based on data collected during December 2020 and January 2021, while the global COVID-19 outbreak was still ongoing. More research is needed to better understand these challenges deeply and extensively, and to thereby provide more viable implications for enhancing the effects of remote online teaching for our students. Our research findings and discussions above may shed light on this research path, with some insights to explore in the future of teaching and learning.

Conclusion and recommendations

This paper discussed the challenges and strategies that Thai teachers faced when remote teaching during the COVID-19 pandemic, using a case study. We found that teachers and students should continuously receive strong support to both serve rapid adjustment and to sustain a remote learning modality. As Gouëdard et al. (2020) reveal, that emergency strategy should be reliant on teachers’ capacity for change. Teachers must be responsible for making adjustments in teaching and learning in terms of timeframes, tools, and available resources. For example, teachers must be able to use multimodal approaches (Mishra et al., 2020), information and communication technologies, and tools with digital teacher competencies (König et al., 2020). There are, however, still challenges in many aspects, including learning pedagogy, students’ assessment, online content delivery and presentation, learning media, students’ feedback, communications, learning time, and remote class management. There are also some student-related factors, such as equity in technologies, stable Internet connections, capability of using technologies, and self-regulated remote learning. Taking action from here on, we need to ensure the inclusion and equity of all COVID-19 education responses to every school, in accordance with Sustainable Development Goals (SDG-Education 2030 Steering Committee, 2020). This will be key to a significantly effective support strategy in times of need. Our results also provide insightful data on how K-12 education should be. Although the study revealed teachers’ preferences in delivery modalities after the pandemic, we cannot avoid considering other modalities in future and the ‘next normal’ of learning. Many questions have arisen as a result of this study that must be investigated further. In a broad sense, research must establish methods for all stakeholders, other than instructors. Future practice might be interested in new delivery modalities that suit possible next normal learning.

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