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# Teachers' Perceptions of the Shift from the Classroom to Online Teaching

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## Abstract

In Thailand, social distancing due to the COVID-19 pandemic came into effect halfway through the university semester with teaching moving from the classroom to online. This was a completely new paradigm for most teachers. To understand the impact of the shift, a survey of all 52 English language teachers at one respected Thai university was conducted with two main focuses. First, teachers were asked to rate the seriousness of 17 potential problems at two time points, after the first week of online teaching and several weeks later. Second, teachers were asked to give comments about these problems and about the advantages and disadvantages of online teaching. Effect size differences between the two ratings were calculated. For the qualitative data, keyword analyses were used to identify patterns in the responses, and responses with similar content were grouped. The findings show that initially teachers rated many of the problems as serious, but that they quickly found solutions such as dividing lessons into a greater number of shorter units. However, problems remained with identifying suitable stimulating activities and marking student assignments. Teachers were ambivalent about the benefits of online teaching citing practical advantages but also highlighting difficulties in achieving some English language objectives and in gauging student reactions. Directions for dealing with the issues arising from these findings are given.

## Keywords

## 1 Introduction

The need for social distancing as a defence against the spread of the COVID-19 pandemic has caused a massive shift in education provision as educational institutions such as universities were forced to move from classroom learning to online learning with little warning. In Lamie's (2005) categories of educational innovation, this enforced shift to online learning is a power-coercive unplanned innovation, a category with one of the lowest likelihoods of being successful.

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Given that most universities worldwide have shifted to online learning and that the impacts of this shift are likely to be far-reaching with the possibility that online learning becomes the new norm, the fact that the shift was power-coercive and unplanned is worrying, even if it was the only option available for continuing education provision. It is important to understand what happened in the shift to online learning and why this happened to be able to identify directions for the future which could increase the likelihood of successful online learning and to identify those initiatives which have already provided success. This issue is especially important for a subject like English language which relies on teacher-student interaction to a greater extent than most other subjects at universities.

The suddenness of the shift to online learning means that the relevance of previous research investigating moves to online learning is unclear. Some of this research views the move to online learning through the lens of innovation theory which posits that characteristics inherent to an innovation influence the likelihood of its success. For example, Grgurovic (2014) examined how a blended learning innovation was implemented on the basis of certain characteristics of the innovation such as complexity and trialability, but in the case of the pandemic the shift to online learning was so sudden that trialing different versions of the innovation was impossible. Other research has examined students' reactions to online learning innovations (e.g. Caldwell, 2018; Herrando Rodrigo, 2017), but in this research online learning was presented as a supplement to, rather than a complete replacement of, classroom learning. Worryingly, some of the research which is most likely to be relevant to the COVID-19 situation highlights weaknesses with online learning. For instance, Baralt et al. (2016) suggest that online learning may be less effective than classroom learning as students are less engaged, and Tang (2019) argues that face-to-face learning is more effective than online learning for teaching pragmatics. With little to be learnt from previous research, conducting research into the impact of the shift to online learning because of the COVID-19 pandemic becomes paramount.

At the time of writing, there has been some research into the impact of the pandemic on education, mostly from China, the first country affected. Some of this research (e.g. Zhou et al., 2020) focuses on administrative organisation with few implications for teachers. Other research focuses on student readiness (e.g. Pastor, 2020) which, while interesting, is somewhat moot given that the shift to online learning is obligatory. One study which has clear implications for teachers is Bao (2020) who offers six strategies for teachers, such as dividing lessons into smaller units. The source of these strategies, however, is unclear.

There is therefore an urgent need for research into the impact of the sudden shift to online learning, ideally research which produces directions for future applications of online learning. Chapelle (2007) argues that there are two main ways of evaluating technological innovations in education: examining the impact on student performance, and investigating teacher judgments of the innovation. For the COVID-19 situation, the former is problematic since assessment practices have been forced to change along with teaching (for example, no traditional exams or in-class presentations could be organised), so there is no clear benchmark against which to compare any results. This study therefore examines teacher reactions to the imposed shift to online learning.

## 2 The context

For most universities in Thailand, the second semester of the academic year runs from January to May. The impact of the COVID-19 pandemic became apparent in March, halfway through the semester, when social distancing rules came into effect, meaning that all classroom teaching had to stop. In some ways, this makes for an ideal research situation. In the first eight weeks of the semester, teachers largely followed the traditional norms of classroom teaching with some minor online support. For the remaining seven weeks, teachers were forced to use online teaching, a period of time long enough for the impacts to be felt.

The specific research context for this study is King Mongkut's University of Technology Thonburi (KMUTT), a respected university in Bangkok where most undergraduate students study degrees in engineering, science and technology. These students need to take at least three English language courses, which comprise general English, English for academic purposes, and workplace English. Students take different courses depending on their proficiency and needs. Including part-time teachers, there were 52 teachers teaching English language courses at KMUTT in this semester. Before the sudden shift, these teachers had little experience with online teaching. While most had used some online tools as supplements to their classroom teaching, very few had taught whole courses online. The abruptness of the shift meant that there were no opportunities to provide training before the shift to online teaching.

## 3 Focus of the study

The fact that the enforced online learning lasted for seven weeks allows us to track how teachers altered their practices as they became used to the medium. Given the suddenness of the shift to online learning, we might expect that most teachers initially encountered numerous problems. As they became used to teaching online, however, we might expect that they searched for solutions to these problems. 17 areas of potential problems, such as time spent preparing lessons and ensuring students' understanding of the content (see Table 2 in the results section for the full list) were identified from an informal survey of teaching staff, and teachers were asked to rate the seriousness of these problems at two time points, after the first week of teaching online and after they had taught for several weeks. They were also asked to give detailed qualitative comments about each of these problems.

The mid-term shift from classroom to online teaching allows teachers to compare the two educational approaches. They were therefore asked for their perceptions of the benefits and drawbacks of each of the approaches and to suggest ways of reducing the disadvantages.

This study therefore answers three research questions:

1. How did teachers rate the seriousness of various problems when they initially started teaching online and after several weeks of experience of online teaching?
2. What were teachers' perceptions of these problems?
3. What advantages and disadvantages did teachers perceive as accruing to classroom teaching and online teaching?

## 4 Methodology

This section explains the data collection and analysis procedures, detailing the instrument used to collect the data and the various methods used to analyse the different types of data.

## 4.1 The questionnaire

All 52 English language teachers at KMUTT were asked to complete an online questionnaire. The questionnaire was presented as a Google form in two versions: Thai and English. The questionnaire was distributed to all teachers in the faculty, including social science teachers, so two versions were used and some English teachers chose to respond to the Thai version (their responses were translated into English before analysis). In this study, only the responses from English language teachers are analysed. The questionnaire comprised 3 main sections.

First, the teachers were asked to list all tools, apps and programs they used for teaching, for contacting students and for assessing students.

Second, the teachers were asked to rate the seriousness of the problems they encountered in 17

areas at two time points: when they first moved to online teaching and after several weeks of online teaching. Linear numeric scales were used with a scale of 0 to 3 where 0 represented no problems and 3 represented serious problems. For each problem area, the teachers were asked to give comments and suggest solutions.

Third, the teachers were asked to give their perceptions of the advantages and disadvantages of classroom and online teaching.

## 4.2 Data analysis

The three different sections of the questionnaire were analysed in different ways.

The tools teachers used for the various purposes were simply counted for frequency.

From the rating scales, mean ratings for each of the 17 problem areas were calculated at each time point. Since linear numeric scales were used, there are none of the validity problems associated with calculating means from Likert rating scales where the descriptors of the categories may not be equidistant (see Watson Todd, 2012). For each of the problem areas, the difference between the two means at the different time points was calculated using Cohen's $d$, an effect size statistic. The effect size values were interpreted following Cohen (1988) with thresholds of 0.2, 0.5 and 0.8 representing small, medium and large effect sizes.

The qualitative data from the teachers' qualitative comments was initially treated as a set of corpora. First, all responses to all questions were collated into a single corpus of over 17,000 words (All responses corpus). Second, separate corpora were compiled from the responses to each question giving 20 sub-corpora (one for each of the 17 problem areas, one for the advantages of online learning, one for the disadvantages, and one for suggestions).

Keyword analyses were conducted for all corpora. A keyword analysis compares a target corpus (in this case, the All responses corpus and the 20 sub-corpora) against a benchmark corpus to identify words in the target corpus which appear with a higher proportional frequency than in the benchmark corpus. This higher relative frequency is termed keyness, "a quality words may have in a given text or set of texts, suggesting that they are important, they reflect what the text is really about" (Scott & Tribble 2006: 55-56). Highly-ranked keywords, then, are likely to indicate the aboutness of the target corpus and highlight the main concerns of the writers, in this case, the teachers.

Conducting a keyword analysis involves three main stages. First, a frequency threshold for words to be considered key needs to be set, so that a word appearing only once in the target corpus (and never in the benchmark corpus) is not identified as key. For this study, the minimum frequency was set at 4 for the All responses corpus, and 3 for the sub-corpora (frequencies that removed words appearing in fewer than 5% of responses). Second, a benchmark corpus needs to be identified. There are three main possibilities here (Pojanapunya & Watson Todd, 2018):

- a general corpus such as the British National Corpus (BNC),
- a corpus comparable to the target corpus but differing in at least one characteristic (for example, a conference presentation and the resulting paper differ in medium)
- where the target corpus is a sub-corpus of a larger data set, a corpus comprising the rest of the data.

In this study, the second option is not available, so the first and third were used. Third, a statistic for calculating keyness is applied. Since we would like to identify the general aboutness of the target corpus (in this case, the main concerns of the teachers), a commonly used significance statistic called log likelihood (LL) was selected (see Rayson & Garside, 2000). LL compares the relative frequencies of each word in the two corpora to provide a single number. The higher the LL value, the more significant the word is to the target corpus. Typically, a threshold LL value is set to determine whether words should

be considered keywords, and this threshold may vary as LL values are influenced by the size of the corpora. In this study, LL threshold values were set to represent about 10% of the word types with greater than minimum frequencies. The data analysis procedures used for the All responses corpus and for the 20 sub-corpora are different.

The All responses corpus was compared against the BNC using KeyBNC (Graham, 2014) producing keywords reflecting how the concerns of the teachers differed from those of general English usage. Given that LL values are influenced by the size of the corpus (and the BNC is large), a high LL threshold of 80 was set for considering words to be key. The resulting keywords were categorised into three categories: words associated with education, words associated with online technology, and other words. It should be noted that the results especially for words associated with online technology should be treated with caution, since the BNC was constructed in the 1980s when online technology was rarely used, and such words may be over-represented as keywords in comparisons against the BNC (Watson Todd, 2013). To avoid this, words associated with online technology can also be compared to a more recent general corpus, such as the Corpus of Contemporary American English, to check that the LL values are still high enough for the words to be counted as keywords. Given the nature of the questions the teachers were answering, we should expect numerous keywords concerning education and online technology, while the remaining words may tell us about more specific teacher concerns.

The sub-corpora were each compared against the BNC using KeyBNC as well with an LL threshold of 13 given the smaller corpus sizes. Keywords not appearing in the All responses keyword analysis were focused on to identify concerns specific to each question. In addition, each sub-corpus was compared against all of the combined other sub-corpora using AntConc 3.5.8 (Anthony, 2019). With a much smaller benchmark corpus in these analyses, the LL threshold was set at 6.5 and salient keywords identified to highlight teacher concerns.

The keywords identified from the various analyses were used to identify patterns in the teacher responses and to highlight their main concerns. These were then used to select quotations to illustrate the teachers' concerns.

## 5 Results

In this section, the results from the analysis of the three sections of the questionnaire, tools used, ratings of the seriousness of the problems, and the qualitative comments, are presented.

### 5.1 Tools used

To provide a context for the other results, the most frequently used tools for four main teaching functions were identified. These are shown in Table 1 based simply on a frequency count of each tool.

Table 1

*Tools Used in Online Teaching*

| Teaching function | 3 most commonly used tools |
| --- | --- |
| Contacting students | Line, Facebook, LEB2 |
| Synchronous teaching | Zoom, Line Video, Microsoft Teams |
| Asynchronous teaching | Line, LEB2, Facebook |
| Assessment | Google Forms, LEB2, Google Classroom |

In Table 1, LEB2 is the university's own learning management system. As can be seen, despite online teaching being new to most of them, the teachers appear to be choosing tools appropriate for the purpose.

Although there is, perhaps, nothing surprising about the tools used, the only previous list of online tools used during the COVID-19 pandemic focuses on tools unique to the Chinese context (Huang et al., 2020) so a list of tools more likely to be used in non-Chinese contexts provides a useful contextualisation.

## 5.2 Teacher ratings of seriousness of problems

As noted above, teachers were asked to rate the seriousness of problems in 17 areas at two time points, in the first week of online teaching and after several weeks. The results are shown in Table 2.

Table 2

*Teachers' Ratings of the Seriousness of Problems*

| Problem | First week of online teaching | | After several weeks | | Change in ratings | |
|---|---|---|---|---|---|---|
| | Mean rating | Interpretation | Mean rating | Interpretation | Cohen's d | Interpretation |
| Problem 1: Time spent checking assignments | 1.43 | Low | 1.30 | Low | 0.13 | No difference |
| Problem 2: Time spent communicating with students | 1.46 | Low | 1.25 | Low | 0.19 | No difference |
| Problem 3: Suitability of activities | 1.44 | Low | 1.17 | Low | 0.29 | Small difference |
| Problem 4: Students understanding content | 1.26 | Low | 1.04 | Low | 0.25 | Small difference |
| Problem 5: Responses from students | 1.21 | Low | 0.93 | Low | 0.30 | Small difference |
| Problem 6: Preparing stimulating activities | 1.13 | Low | 0.88 | Low | 0.29 | Small difference |
| Problem 7: Time spent teaching | 1.38 | Low | 0.86 | Low | 0.58 | Medium difference |
| Problem 8: Time spent preparing | 1.57 | Medium | 0.85 | Low | 0.85 | Large difference |
| Problem 9: Clarity of methods and evaluation | 1.25 | Low | 0.85 | Low | 0.42 | Small difference |
| Problem 10: Arranging online exams | 1.01 | Low | 0.73 | None | 0.29 | Small difference |
| Problem 11: Students submitting assignments | 0.85 | Low | 0.71 | None | 0.16 | No difference |
| Problem 12: Ability to use programs or platforms | 1.30 | Low | 0.68 | None | 0.65 | Medium difference |
| Problem 13: Student absence | 0.94 | Low | 0.68 | None | 0.29 | Small difference |
| Problem 14: Certainty about platform to use | 1.32 | Low | 0.59 | None | 0.79 | Medium difference |
| Problem 15: Issues with Internet bandwidth | 0.62 | None | 0.59 | None | 0.04 | No difference |
| Problem 16: Computer or device issues | 0.74 | None | 0.50 | None | 0.26 | Small difference |
| Problem 17: Contacting students | 0.33 | None | 0.16 | None | 0.29 | Small difference |

Note: Problems are sequenced by the seriousness of the area after several weeks.

Table 2 shows that none of the problems had a mean rating of high seriousness at either time point, implying that, even at the beginning, a majority of teachers did not rate any problem as serious. It should be noted that these are mean ratings, and so even a problem with a low seriousness mean rating may have been rated as highly serious by a few teachers. For development purposes, all individual ratings were scanned and appropriate support offered to teachers who had given a high seriousness rating for any problem.

Despite the lack of mean ratings of high seriousness, Table 2 does show that many teachers initially encountered several different types of problems, most notably the amount of time they needed to spend preparing for online lessons. As they gained more experience in teaching online, the seriousness of all problems was reduced with the largest reductions being for those problems initially identified as the most serious. This trend bodes well for the future if, as seems likely, online teaching becomes, at least, part of a new norm in education.

Even though the general pattern is a reduction in the perceived seriousness of the problems, there are still causes for concern. Some problems may still require attention to ensure the success of future online teaching, most notably, the time spent checking assignments, the suitability of activities (perhaps especially stimulating activities), and the time spent contacting students. These issues warrant special attention in analysing the qualitative data.

## 5.3 Overall patterns in the teachers' comments

To gain insights into the overall concerns of the teachers, the All responses corpus was compared against the BNC. Of the 44 keywords with an LL value of greater than 80, 21 concern educational issues (e.g. *students* (LL = 2,258), *teaching* (LL = 638), *learning* (LL = 275), *classroom* (LL = 263), *exam* (LL = 238)), and 14 concern online technology (e.g. *online* (LL = 1,437), *Google* (LL = 804), *LEB2* (LL = 748), *Facebook* (LL = 675), *Zoom* (LL = 632)). The overall focus on the use of online technology in education is to be expected, even if the LL values for online technology are overstated. Of the remaining 9 keywords, some highlight the style of the responses (e.g. *therefore* (LL = 93), *can* (LL = 91)) and some concern problems (e.g. *problem* (LL = 182)). The two remaining content keywords are *time* (LL = 187) and *adjust* (LL = 125). These suggest that the shift to online teaching requires changes from teachers and that their workload may be heavier, points worth remembering as we analyse the data for the individual problems. As one teacher says, illustrating the groups of keywords, "It takes time to adjust to the teaching and learning style online".

## 5.4 Teachers' comments on specific problems

The 17 areas of problems which were rated as shown in Table 2 provide the basis for the teachers' qualitative comments. Table 2 shows that some areas were not rated as problems initially and thus had little room for improvement (e.g. Problem 17: Contacting students). Some areas were initially viewed as problems but became far less problematic as teachers gained experience, and thus appear to have been solved (e.g. Problem 7: Time spent teaching). Some areas were initially problematic and, although their ratings improved, remained somewhat problematic (e.g. Problem 1: Time spent checking assignments). These three categories summarised in Table 3 provide the framework for discussing the teachers' comments on the problems.

Table 3

*Categories of Problem Areas in Online Teaching*

| Areas which were not really problems | Areas where teachers solved initial problems | Areas which remain as problems |
|---|---|---|
| Problem 10: Arranging online exams | Problem 5: Responses from students | Problem 1: Time spent checking assignments |
| Problem 11: Students submitting assignments | Problem 7: Time spent teaching | Problem 2: Time spent communicating with students |
| Problem 13: Student absence | Problem 8: Time spent preparing | |
| Problem 15: Issues with Internet bandwidth | Problem 9: Clarity of methods and evaluation | Problem 3: Suitability of activities |
| Problem 16: Computer or device issues | Problem 12: Ability to use programs or platforms | Problem 4: Students understanding content |
| Problem 17: Contacting students | Problem 14: Certainty about platform to use | Problem 6: Preparing stimulating activities |

The first category of problems is those which proved not to be really problematic. In some cases, these turned out not to be problematic because of proactive plans by the university, such as providing suitable devices for teachers lacking the equipment. If other contexts are similar to KMUTT, it is reassuring that not all potential problems prove troublesome.

The second category is those areas which initially proved problematic but which were resolved fairly quickly. Given that most teachers were unfamiliar with online teaching, the initial problems were to be expected. The fact that these problems were solved by most teachers fairly quickly is due to two factors.

First, many teachers had a healthy attitude towards seeking support where needed and experimenting with different approaches. This can be seen from some of the keywords identified from the teachers' comments for these six problem areas. For example, keywords for Problem 8: Time spent preparing include *try* and *adjust*, for Problem 14: Certainty about platform to use, *try* and *training*, and for Problem 12: Ability to use programs, *expertise* and *staff*. From the teachers' comments, they were willing to "experiment, adjust, adapt, learn to solve problems yourself", and they sought advice from numerous sources: "understand, train, and ask for advice and help from students, fellow teachers and IT unit staff". The teachers' willingness to learn from their students ("Initially, I experimented with many types, but later I received feedback from the students that only one platform should be used for familiarity") is interesting in that a key feature of Thai culture is the high power distance (Buriyameathagul, 2013) which typically precludes seniors (i.e. teachers) from learning from juniors (i.e. students).

Second, the teachers' experiments and adjustments led them to find new ways of teaching. Relevant keywords include *content* (Problem 8: Time spent preparing), *divide* (Problem 7: Time spent teaching), and *chat* and *interactive* (Problem 5: Responses from students). Sample quotations illustrating how these words were used by the teachers include "organize the content to be more concise", "divide teaching topics into sub-topics", and "this type of chat has more interaction". The following comment shows how a teacher identified a problem and found a solution.

> "At first when I started online teaching almost no students interacted in the group. Everyone just listened and waited for the answers to the exercises. There was no speaking practice. After that, I adjusted the method to focus on activities that forced the students to participate more, such as sending them exercises to check their understanding. On the Google form I only gave them a limited time. But I also adjusted the way students responded from speaking to writing in the chat so there was more interaction during teaching" (Problem 5: Responses from students)

Other initiatives the teachers took to adapt their teaching included "reorganise the content to be more concise and explain less to get to the point faster", "divide the teaching from 2 sessions into 4 sessions to give the students more time to prepare" (similar to the suggestion of Bao, 2020), and "each student is assigned to answer 1 or 2 questions each lesson". For these problem areas, teachers' willingness to experiment and to learn from others led them to solutions to reduce the seriousness of the problems.

The third category of problems is those that proved to be initially problematic and which still remain at least somewhat problematic. These fall into three sub-categories. First, for Problem 2: Time spent communicating with students (keywords are *communicate*, *via, groups, times*), teachers appear resigned to treating this as an unsolvable problem. We have seen that contacting students (Problem 17) is not perceived as problematic in itself; the main issue is simply the amount of time required for contacting the students as different students use different tools and teachers need to be proactive in following up on students who are not communicating: "Every day I have to check my e-mail, Edmodo and MS Teams and then I have to check on the few students I have not heard from so that they can be on track with their work". Differences in lifestyle can also be a source of frustration: "Students contact me during all times of day and night (but not after midnight). I have asked students to contact me during normal work hours." The teachers seem to have accepted this as a necessary annoyance in online teaching and no teachers suggested solutions.

Second, the most serious remaining problem after several weeks of teaching online was Problem 1: Time spent checking assignments (the keywords are *checking*, *assignments*, *examination*, *aching*, *eyes*). Although some teachers acknowledged that this was also a problem for classroom teaching, others, who may normally have asked students to submit hard copies, identified problematic aspects specific to online marking: "It takes a lot of time to inspect the work and creates health and eye problems. The bright light from the computer monitor hurts the eyes from the long time and sitting for a long time, aching back, aching everything". Other teachers who had an increased marking load due to the greater number of exercises they were giving students suggested solutions: "Checking and responding to every single assignment was done and proved to be impractical. To deal with this, for some tasks, a performance checklist was provided, and the students were asked to do peer evaluation." Even with such innovations, the time needed for marking remains an issue (although this has always been a common complaint of teachers).

The final sub-category is, worryingly, the three problem areas most directly associated with student learning: Problem 3: Suitability of activities, Problem 4: Students understanding content, and Problem 6: Preparing stimulating activities. The keywords for these three areas include *activities*, *understand*, *stimulating*, *interaction*, *give*, *opportunities*, *exercises*, *body* and *presentations*. The teachers find that "stimulating the students during the online session is troublesome", and that their usual evaluation practice of "checking understanding from observing behavior in doing activities is more difficult". They are also aware of the need to "find new ways to increase interaction in the classroom", especially as the students "are in their home environment and surrounded by distractions - family, pets, TV, gaming". In trying to promote student learning, some of the teachers are aware that simply converting their planned classroom teaching into an online format is not sufficient:

> "I need to prepare additional teaching materials for online learning as the primary textbook is not enough and it is not conducive to being taught online. I have included some content improvements and additional activities but I still focus on teaching according to the outcomes of the course" (Problem 3: Suitability of activities)

One proposed solution is to "check knowledge and understanding through weekly exercises", but the teachers acknowledge that such an approach also has a downside in that "focusing on students doing more practice exercises instead of discussion in the classroom" is associated with transmission rather than transformation education. Some of the problems are specific to English language teaching: "some aspects of the ability to present something cannot be measured from online presentations such as body

language". With the semester drawing to an end and with two months to prepare for the next semester which is very likely to also involve online teaching, providing stimulating suitable activities and promoting student understanding are areas requiring work during the break.

## 5.5 Advantages, disadvantages and suggestions

In the literature (e.g. Reinders & White, 2010), a variety of advantages for online teaching, which can be categorised as organisational or pedagogical, have been suggested. In the teachers' comments, some organisational advantages were given (with the keywords *flexibility*, *anywhere* and *independent*) but no pedagogical advantages were identified. Instead, the most frequently cited advantages are practical (with the keywords *traveling*, *convenient*, *save*, *time*, *commute*). Although we have seen that online teaching may require more time than classroom teaching, this may be offset by travel time: "avoiding the commute to KMUTT potentially saves hours per day". Similarly, although the move to online teaching may involve expenses for teachers ("I used my own money to solve my immediate problems with the Internet"), these may be recouped ("online teaching saves on traveling expenses and dressing costs").

While the practical advantages are unequivocal, teachers are more ambivalent about the organisational advantages. Online teaching may provide the benefits of "flexible time for students to learn anywhere and possible teaching flexibility that may be needed in the future", but, in contrast, "some teachers and students benefit from a structured classroom and the flexibility of an online classroom may be counter-productive and daunting". Similarly, teachers have different experiences with student responsibility and participation. On the one hand, "students dare to inquire about things they do not understand"; on the other, "students are reluctant to respond to lessons either in writing or via video responses".

The disadvantages teachers identify (keywords include *difficult*, *cannot*, *devices*, *see* and *unstable*) fall into three categories. First are technical issues. Although the teachers' ratings for technical issues suggested there were no problems, they were mentioned as disadvantages: "low-income people who have no or limited access to the Internet will get left behind" and there is a "heavy reliance on technology which can be detrimental -- less privacy, inability for large groups to participate due to bandwidth/software limitations". Second are the organisational problems of not being fully aware of what students are doing: "not really seeing each other makes it difficult to predict the emotional situation" and "if we were studying in the classroom, we would be able to walk to the students to see what they are doing, to ask, to see what they have written, but online, we cannot do anything". Lastly, some teachers have strong views about the appropriacy of online teaching for English language teaching: "the disadvantage is that students can't practice speaking in pairs" and "face-to-face learning is far superior to online learning in all instances ESPECIALLY ORAL COMMUNICATION COURSES".

Finally, the teachers give advice and suggestions (keywords include *should* and *must*) with each teacher making different recommendations. Suggestions include replacing exams with continuous assessment, keeping the number of students per class to a manageable number, asking students to publish their work in online forums, and inviting guest speakers to give online lectures. This lack of consistency in the teachers' recommendations implies that there are no one-size-fits-all solutions for online teaching, but also suggests that there is a wide variety of possible approaches which, if shared, could lead to each teacher having a broad repertoire of solutions available for improving their online teaching in the future.

# 6 Discussion

The sudden shift to online teaching because of the COVID-19 pandemic was a power-coercive unplanned innovation which supposedly has a low likelihood of success. However, although in the first week of working online the teachers encountered several serious problems, many of these were largely solved within a few weeks, suggesting that the innovation was more successful than might have been expected.

Three issues underlie this successful identification of solutions. First, the teachers' willingness to experiment, to seek advice and to adjust their approach meant that their abilities in online teaching developed quickly. Second, a wide range of people offered potential solutions, including the teachers' colleagues, the IT staff and, perhaps most interestingly, the students. Third, the administration was sympathetic and non-judgmental, and tried to provide support for improvement. For instance, the survey results that are the data source for this article were also used to identify teachers needing help in specific problem areas.

The solutions identified in this study include organisational innovations such as breaking lessons into smaller units, interactional innovations such as asking students to respond in writing rather than spoken language, and monitoring innovations such as using numerous exercises to check understanding.

Despite the fact that the level of success was greater than might have been expected, there is still much to be done. Some of the solutions solve immediate problems but may have negative impacts in the long term. For instance, the frequent use of exercises may promote a transmission view of education, since it is relatively easy to set up closed-ended exercises, such as multiple-choice quizzes online, which may be used at the expense of more critical discursive approaches more suited to tertiary education. There are still three problem areas which remain unresolved:

- time spent communicating with students,
- time spent checking assignments, and
- the need for stimulating activities that allow checking of understanding.

It should also be noted that the teachers perceived online teaching to be particularly challenging for English language teaching, especially for speaking objectives, a perception that requires further research.

The current semester is a unique situation. In the future, online teaching will not be as unfamiliar to teachers as it was when initiated in this semester. As one teacher said, "I think we just need to go through this crisis period of online teaching, get the semester over with, and then consider what can be done differently going forward". This future is likely to include at least an element of online teaching. With the future requirements for social distancing uncertain, the next semester may require blended learning or even a full semester of online teaching. A new norm in education has emerged.

With online teaching continuing and some problems unresolved, further work is required. At KMUTT, we plan to hold sharing sessions for teachers to learn from each other's experiences when the semester ends in a couple of weeks (at the time of writing). At least eight other research projects are being conducted into the impacts of online teaching this semester, including student surveys, investigations of teacher decision making, and research into how student engagement and interaction is affected by different online tools. The lessons learnt from this research as well as research conducted elsewhere should guide future decisions about implementing online teaching.

Perhaps the most worrying issue with online teaching becoming the new norm in education is the lack of perceived pedagogical advantages. In this study, the advantages accruing to online teaching that were identified concerned practical and organisational issues. While these are important, the lack of pedagogical benefits linked to student learning is a concern. With online teaching the new norm, serious efforts to ensure that such teaching benefits student learning are needed. A useful model to guide such efforts is Puentedura's (2006) four levels of technology use in education, which are:

1. Substitution (where technology is a direct tool substitute for classroom teaching with no functional change)
2. Augmentation (where technology is a direct tool substitute but with functional improvements)
3. Modification (where technology allows significant task redesign)
4. Redefinition (where technology allows for the creation of previously inconceivable tasks)

The suddenness of the shift to online teaching because of the pandemic meant that many teachers were simply trying to survive. Mostly, they simply converted what had been planned for the classroom into an online format, a case of substitution. Given the context, this is completely understandable. However, for online teaching to be beneficial in the future, simply repackaging the same content and activities from the classroom to online is not enough and higher levels of technology use need to be applied. In the long run, more stimulating online activities are needed (an unresolved problem according to this study) and these are likely to be at the levels of modification and redefinition where creativity in activity design is required. These may involve applications of natural language processing, reimagining the goals of language teaching such as languaging curricula which focus on supporting students to use all of their available resources (including technological resources) to do things with English, or repurposing non-educational online applications for educational use as was done with using collaborative wiki tools for writing tasks (e.g. Mak & Conaim, 2008).

The COVID-19 pandemic has caused a massive shift in education with the creation of new educational norms. The suddenness of its impact on teachers led to numerous problems but many of these proved solvable. With online teaching continuing in the future, further developments are required if student learning is not to be adversely affected in the long run. While most view the pandemic negatively (and its terrible effects should not be understated), the pandemic also provides opportunities for creative developments that could benefit education in the long run.

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