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# Aligning the Polytechnic Provision of CET with SkillsFuture: Meeting Learners' and Employers' Needs

*Supplementary Bulletin:  
Changing attitudes about online continuing education and training in the Covid-19 Era*

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## 1. Background of Project

This supplementary bulletin reports some additional findings from the study, 'Aligning the Polytechnic's provision of CET with SkillsFuture: Meeting learners and employers' needs. This study captures the views of working-age Singaporeans about what constitutes accessible and effective continuing education and training (CET). It consists of three phases. In the first phase, 180 recent graduates from CET programmes and 40 employers were interviewed and surveyed. In the second phase, 860 Singaporean working-age adults responded to a survey known as the National Survey. In the third phase, online workshops and webinars for adult educators and CET lecturers were conducted to discuss the findings from the earlier phases.

In the first and second phases, from December 2018 to March 2020, we asked our informants about the accessibility and effectiveness of online learning, face-to-face learning, and a combination of both. All of this occurred prior to the circuit-breaker period brought about by the Covid-19 pandemic in 2020. The need for social distancing to reduce the spread of the virus caused many workplaces, community functions, and educational institutions to use online platforms to communicate. During this period, many, if not most, working age Singaporeans began or increased their use of online platforms such as Zoom and MS Teams. Hence, they became more familiar with the operation of these platforms.

With the increased use of this technology through work, family communication and possibly studies, it was speculated that working age Singaporeans' attitudes about online education may have changed. Other observations reinforced our speculations. During the online workshops and webinars in the third phase held between September to November 2020, many participating lecturers stated that their students seemed more open to online education than before. Thus, we decided to return to our participants from the first two phases with a supplementary survey to identify whether a greater familiarity with this technology led them to be more open about its use in CET.

In this survey, we provided participants with three multiple forced single choice questions, two of which (the first two) were the same as what we had given the National Survey participants and one open-ended question. The questions were:

1. Which mode of CET is most convenient for you (online, face-to-face, combination of online and face-to-face)?
2. Which mode of CET is most effective for you (online, face-to-face, combination of online and face-to-face)?
3. In your opinion, are you now more open to taking fully online courses as a result of the Covid-19 pandemic (yes, no, unsure)?
4. Please tell us more.

The responses provide accounts of views about online education and permit comparisons between these perspectives and those who completed the National Survey prior to the pandemic.

## 2. Convenience of online education

A total of 258 complete responses were received. We performed a Chi-square test of independence to assess the difference between the data gathered from October 2019 to March 2020 (denoted as 2019 henceforth) and those from December 2020 to January 2021 (denoted as 2020 henceforth) on the convenience and effectiveness of different modes of delivery of CET courses<sup>1</sup>. Regarding the reported convenience of the modes of engagement, there is a significant difference between the 2019 and 2020 data (see Table 1). The 2020 respondents are more likely to select online learning as a more convenient learning mode (a difference of 27.5%) than those in the National Survey in the second phase.

**Table 1: Findings from the Chi-square test of independence between the 2019 and 2020 group**

Mode of Delivery	n	Group	Online (%)	Face-to-face (%)	Combination (%)	Chi-square	p
Convenient mode	498	2019	22.1	17.9	60.0	61.067	.000***
	258	2020	49.2	7.8	43.0		
Effectiveness mode	498	2019	8.0	41.4	50.6	4.626	.099
	258	2020	12.0	35.3	52.7		

Note: \*\*\* denotes  $p < .001$

The 2020 respondents are also less likely to select 'face-to-face' and 'combination of both online and face-to-face' as convenient modes (a difference of 12.1% and 15.4%, respectively) (See Table 2). Regarding the effectiveness of these three modes, there are no statistically significant differences in views.

**Table 2: Percentage differences between the responses in 2019 and 2020 in terms of convenience and effectiveness of online provisions. Only for the convenient mode was the difference significant.**

Variables	Values	% of responses		
		2019	2020	Difference
Convenient mode	Online	21.7	49.2	+27.5
	Face-to-Face	19.9	7.8	-12.1
	Combination	58.4	43.0	-15.4
Effectiveness mode	Online	8.4	12.0	+3.6
	Face-to-Face	39.9	35.3	-4.6
	Combination	51.7	52.7	+1.0

The 2020 respondents were asked if they were now more open to fully online courses because of what they had experienced during the lock down. An overwhelming 72.1% of the respondents responded with "yes" (See Table 3). A

<sup>1</sup> One limitation of using this analysis was regarding the sampling. The sample we used for 2020 was partially drawn from the 2019 sample and partly from our database on employers supportive of CET programmes and graduates from CET programmes. Using a more random sampling method would have increased the validity of the Chi-square test.



smaller percentage of 12.4% and 15.5% responded with “no” and “unsure,” respectively (See Table 3). Together, the findings suggest that beliefs in the convenience of online education has increased. Likely, this change arises from more opportunities to experience online engagements because of the Covid-19 pandemic. To further understand this response and challenges working-age adults may face with the increased use of online education, we also examined the respondents’ open comments.

**Table 3: Openness to fully online courses, indicating strong support.**

Variable	Values	N	%
Open to fully online courses	Yes	186	72.1
	No	32	12.4
	Unsure	40	15.5

### 3. Comments and Concerns about Fully Online Courses

While the quantitative data show a significant increase in support for the convenience of online educational provisions, it also reveals concerns about its effectiveness as a mode of education. Comments provided by 145 of the 258 respondents were analysed to understand their concerns about fully online courses. These comments provided insights as to why online education is perceived to be less effective than face to face or a combination of on-line and face-to-face modes. We have categorised the comments into seven themes, as elaborated below.

#### 3.1 No choice but to adapt to a new normal

Firstly, there were statements of resignation that because of the ongoing Covid-19 pandemic, there was a need to adapt to online education to reduce the spread of the virus. Even though it may not be the learners’ preferred method, they were willing to engage with this socially distanced mode of education. A couple of respondents used the phrase “no choice” to describe how they preferred face-to-face or blended learning modes, but were willing to embrace the “new normal” of fully online education out of necessity:

**“No choice. Because of Covid-19, all classes have limited capacity and is always fully subscribed. So, the next best thing is to go online.”** (197)

**“One has to be realistic about the current state of affairs and be prepared to be flexible. Though face-to-face teaching is still the best method, in my opinion, as it also allows for easy interactions with fellow students, education has to go on even during a pandemic. Lifelong learning means no stopping for Covid-19, and that requires us to pivot to online learning.”** (72)

Hence, some respondents indicated online education as being inevitable and even necessary in the current situation.

#### 3.2 Time-saving and Flexibility

Many respondents reported appreciating the time saving that online courses afforded them. Online education meant that respondents did not have to spend time and money travelling to locations away from their homes, and it also gave them flexibility in managing their time:

**“Online courses provide me convenience and time savings in that I don’t have to prepare and travel to a physical classroom, and I can still manage my family life.”** (117)

**“I did one training course fully online at own pace. I find it effective as it does not interrupt with my current work (and) I did not need to apply for leave.”** (159)

Some respondents reported they preferred asynchronous educational provisions or learning at the learners’ convenience through the provision of study materials, pre-recorded lectures, and online assignments and evaluations, as it allows them to manage the pace of their engagement:

**“Online courses are more on-demand and can easily be accessible if you have the necessary technological equipment. You can do it anywhere and anytime which permits.”** (99)

**“If there are recordings of the lesson, then it can be replayed.”** (65)

These responses indicate that for working-age Singaporeans, ease of access and flexibility in managing time is important. With many of them managing multiple responsibilities across work and family, any approach that can help alleviate their studying load is clearly welcomed.

#### 3.3 Focus

Other respondents reported not being able to focus on their studies as their homes are not conducive places to engage in educational activities. For others, extensive screen time was a problem and they suggested that lecturers provide regular short breaks across on-line sessions. Generally, many seem to imply that it is easier for them to focus during face-to-face classes than online educational provisions. Tendencies to procrastinate at home and the existence of home-based distractions prevented them from paying attention.

**“I would prefer talking face to face as it is more beneficial to pick up. Some people like myself don’t find our homes conducive to study in or take classes.”** (207)

**“It will be good to give regular intermediate breaks. i.e., a 5 minutes break for every 45 minutes of lesson.”** (232)

**“While online classes offer us flexibility and comfort to attend classes from home, it can sometimes cause us to procrastinate as well.”** (104)



**“Online is easier but distraction from home might cause participants to be unable to concentrate.” (16)**

For other learners who like to multi-task, rather than finding online learning less effective owing to distractions, they found it more beneficial as they could multitask to enhance their learning.

**“Online learning allows me to multi-task at the same time.” (232)**

**“I can use 2-3 multiple devices to view notes and search for additional info while listening to lectures and participating in group discussions.” (355)**

Related to issues of engagement is motivation. Some respondents reported that having to be physically present at a specific location and time with other people is a strong motivation for them to participate in CET courses.

**“Perhaps I’m from an old school of thought. But traveling all the way (and) making an effort to get an education the harder way will make you more determined and not lazy. These days you are not even required to show your face online. There is more of listening, and you are on your own.” (91)**

So, for these respondents, having dedicated sessions and face to face opportunities to engage with others was important and led them to conclude that, whilst convenient, online education provisions are not always effective.

### 3.4 Lecturers’ Skills

Another related comment was that for online learning to work, teachers must be adequately trained and able to engage students through the effective use of online learning tools:

**“Yes, during this period of Covid-19, have been taking online classes via zoom from [an institution]. Most of the sessions were really really boring. I never ever feel disengaged in learning face-to-face and virtual, but the trainers were not very competent in engaging learners. The lack of learning activities is another contributing factor to why some learners could fall asleep during class. I would strongly encourage active learning and engaging skills for trainers who conduct virtual training.” (61)**

**“Online training is dependent on the trainer’s ability to hold participants’ attention while going through the course materials. Presentation slides cannot be too complicated or small as most online participants are viewing via laptop screens. Unlike classroom where are seen on projected screen... Online viewing of tiny words or presentation slide limited by laptop screen size is one peeve of online learning.” (187)**

These responses suggest the need to consider ways of engaging students and managing participation appropriate for online education. That is, online teaching should be more than a means of transmitting knowledge through presentation. Rather, understandings about

and means of how students can most effectively engage with these kinds of technologically mediated online provisions are required.

### 3.5 Interactions

Many respondents reported that they greatly valued the interactions with lecturers and peers in face-to-face classes which are not available through online education. Some stated that interacting with peers online is more difficult when they have yet to meet them face-to-face. While discussions during synchronous interactions occur through the use of break out groups, some respondents claimed that such interactions over video conferencing are not as rich and productive as compared to physical meetings.

**“Group projects in longer duration courses can be a real chore due to different personalities you meet in the course and random/pseudo-random assignment of group mates without icebreaking in person.” (85)**

**“Also, there is a lack of interactions among participants who can easily hide behind the scene without saying a word. We do not learn from others, neither do we share with others in the same learning platform. Often, it is one-way traffic from lecturer to participants.” (46)**

For learners who prefer “the human touch,” immediate feedback, and personal interactions with instructors and peers; synchronous learning experiences would be preferred over asynchronous ones. Interestingly, many respondents’ concerns were about quality of interactions. All this suggests that the kinds of educational interactions afforded through online provisions are not optimal for all kinds of learning and learners because not all kinds of interactions are suitable for all learning outcomes or students, as suggested in the following theme.

### 3.6 Type of Course

Some respondents claimed that not all courses and contents are suitable for online education, particularly those that are “hands-on” or practical in nature. These include those with laboratory work, development of precise procedural skill, or learning of physical skills like unarmed combat for security officers. These respondents claimed that courses addressing conceptual development may be more suited for online-learning, whereas more hands-on courses are not:

**“Depending on the nature of the course. For knowledge-based or theory-based courses, online course is good and most convenient. For skill-based courses, face-to-face is the most effective method.” (126)**

**“Practical competency cannot be achieved by online training only.” (36)**

One participant suggested that a careful review was necessary to determine whether a particular course was suitable to be fully online or not:

**“... some courses or modules can be effectively delivered via online means. For example, topics that are easy to grasp and understand. However, more advanced modules and hands-on heavy subjects may still be more well suited for a face-to-face class. A careful review is needed to ensure effective teaching and learning can take place while providing the best for varying age groups.” (195)**

Whilst the imperative of Covid-19 led to a universal provision of online education, the emerging question now is whether these kinds of provision are broadly applicable or should be used more selectively, and not when the development of practical procedural skills, interactional competencies, and where close guidance is necessary.

### 3.7 Technology Issues

Some respondents raised issues that arise because of technology. For example, some reported that having the right computer equipment and stable Internet, which not everyone has, is necessary for online education. Others, referred to the learning required to effectively use various learning platforms while some had to overcome their fear of technology:

**“As a senior and not so IT savvy, doing an online course will pose some challenges for us. Firstly, we must have a strong wifi connection network at home. Secondly, we must learn how to use Zoom, TEAMS, and Google Meet effectively. Navigating through any of this software may pose some difficulties.” (46)**

**“Had been taking courses (self-sponsored or complimentary) online during the Covid-19, and I have slowly adapted to this new mode of learning and showed less resistance to it. I have also overcome most of the fear of using technology in my learning.” (247)**

**“CET related Courses need a classroom teaching, which will be more effective as many students above 50s still struggle with technology. Even though they're putting in a lot of effort but time has to be given to them to learn and understand the subject matter.” (298)**

Some courses require one to have more than one computer screens, which not every Singaporean has access:

**“Some courses cannot be taught online because of the nature of the content. For example, learning software. 2 screens are needed. One with the software being taught, and the other the instructional slides or instructor whiteboard.” (133)**

Perhaps unsurprisingly, there are issues associated with quality of internet access, equipment requirements, and familiarity with software to engage effectively in online education provisions.

## 4. Conclusions and Implications

These supplementary findings indicate the respondents gauged the possibilities and limitations of online education. They appreciated the convenience it provides to working age learners. But they make the case that more needs to be done to increase the effectiveness of online learning. While face-to-face or blended learning is still preferred, many are prepared to adapt to this new way of accessing CET. Some implications and suggestions based on our findings include:

- A need for awareness of a diversity of readiness to adapt to online education and learning. Those from the lower-income groups who may not have time, conducive learning spaces at home, stable internet connection, and/or computers find it more challenging to learn online. One of our respondents who works as a cleaner said, “There isn't time for me to do anything except to clean and rest.” (225) There is a need to look out for such individuals who easily slip through the gaps.
- Older Singaporeans unfamiliar with using electronic technology might also struggle to adapt. They would first need some necessary computer skills. Some may not type fast enough, and lecturers need to consider this when creating online assessments involving typing and make concessions for such learners.
- An effective teacher ‘in person’ may not be an effective online teacher. Teachers and trainers need the knowledge and skills to teach effectively online and become familiar with the various tools available to help learners achieve the intended learning outcomes and goals.
- Courses need to be appraised as to their suitability to be offered fully online and adaptations of the curriculum and pedagogy required. Institutions need to be aware of the limitations of online learning and the challenges of converting a course into an online version. Additionally, careful planning is needed in designing fully online courses, including considerations about students’ readiness and experiences.
- Some respondents had asked about subsidies and requested course fees be lowered for fully online courses. More affordable courses would mean greater accessibility to CET for all people, particularly those for whom cost was previously an issue.



