MDC BULLETIN

Malaysian Dental Council

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President's message

Esteemed members of the dental profession, COVID-19 has totally changed the way humanity lives, interacts, carries out economic activities and raises future generations since the year 2020 and probably for the next few years. Dentistry too has had to slowly adapt to the new situation, and by 2021 dental treatment in government and private dental clinics has increased, as new inventions and innovations allowed most treatment to be carried out safely which has also boosted patient's confidence towards dental treatment.

Besides that, Government dental personnel were also mobilized to help curb the spread of the disease and were involved in swab taking, sampling, duty at the COVID-19 quarantine centers and hospitals, monitoring home surveillance, contact tracing as well as screening at international entry points.

The arrival of the vaccines in 2021 changed the course of the disease to a certain extent, and frontliners, including dental professionals and supporting staff, were among the first groups to receive the vaccine. Again dental personnel from the government and private sector stepped forward and were involved in the vaccination activities, helping in the race to achieve rapid vaccination of Malaysians and foreigners in the country.

The emergence of new variants of the virus, like the delta variant has challenged us again over the past few months causing the near choking of the healthcare systems and the loss of many lives. But with ever increasing vaccinations, the number of cases has begun to reduce, easing the hospital congestion to some extent. Vaccination has been shown to reduce the severity and the necessity for hospitalization of those who do contract COVID-19.

We are now on the path to offer a third/booster vaccine dose to frontline health personnel and other vulnerable people. I would like to thank the dental fraternity for playing their part in helping Malaysia through this difficult time, with the new norms, restrictions and SOPs, in the presence of an invisible enemy, and I pray for your continued good health and support.

TAN SRI DATO' SERI DR. NOOR HISHAM BIN ABDULLAH

From the EDITOR'S DESK

The Dental Act 2018 was given the Royal Assent and gazzetted in June 2018. The implementation of the Act was delayed pending the gazettement of the Dental Regulation which came about in 2021. With the implementation of the Dental Act 2018, the Dental Act 1971 will be repealed. Whilst most provisions of the Dental Act 2018 will be implemented on 1st January 2022, there are exceptions. This bulletin outlines the dates of implementation of the various provisions of the Dental Act 2018. This bulletin also highlights the preparations for the Professional Qualifying Examination (PQE), passing which will be a requirement for dental practitioners who graduate from dental institutions outside Malaysia and whose dental qualifications are of similar standing to that of local dental institutions, to enable them to register with the Malaysian Dental Council.

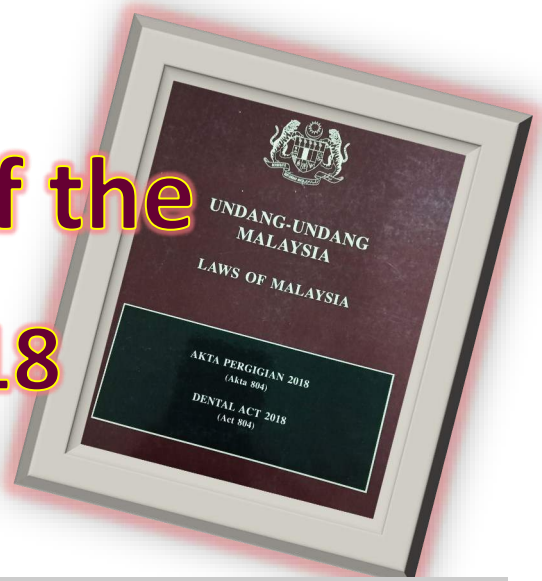
More than 18 months have passed, yet there is no end in sight of the Coronavirus pandemic. Nevertheless, we are greatly encouraged by the significantly lower number of active cases reported daily, most of which are mild to moderate in nature. This is due partly to the fact that almost the whole adult population has been fully vaccinated and moving on to the booster dose. As part of the national healthcare team, dental surgeons have contributed significantly to the success of the national vaccination programme. We feature them in this bulletin to acknowledge their contribution in this endeavour. Additional armamentarium has been introduced to overcome the pandemic that empowers an individual to conduct self-screening through oral saliva mucus testing for COVID-19.

The pandemic has impacted the provision of dental care both in the public and private sectors. It has also influenced the way students are taught and how they learn. The pandemic has necessitated new measures to be introduced to accommodate these, some of which are here to stay even when the pandemic is over.

The importance of dental charting, which is continuously updated cannot be emphasized strongly enough. It enables accurate up-to-date records to be kept, that can assist in patient management and in the identification of patients through their records. A write up on dental carting is included in this bulletin.

DATO' PROF DR. ISHAK BIN ABDUL RAZAK

Implementation of the DENTAL ACT 2018



	Provision	Date of Implementation 1 Jan 2022
1.	Implementation of Dental Act 2018	√
2.	Election of Council Members	√
3.	Establishment of the Dental Therapists Board	√
4.	Establishment of Dental Qualifying Committee	√
5.	Institution of the Professional Qualifying Examination	√
6.	Establishment of Dental Specialists' Evaluation Committee	√
7.	Registration of Dental Specialists	√
8.	Institution of Conditional Registration	√
9.	Registration of Dental Therapists	√
10.	Registration of Post-Basic Dental Therapists	√
11.	Enforcement of CPD points & Professional Indemnity for renewal of APC and TPC	1 Jan 2025
12.	Composition of Body Corporate	√
13.	Establishment of Complaints Committee	√
14.	Formation of PICs	√
15.	Enforcement of New Disciplinary Punishments under MDC	√
16.	Formation of Disciplinary Committees	√
17.	Enforcement of Disciplinary Punishments under DTB	√
18.	Implementation of Enforcement Provisions	√
19.	Implementation of Provisions for Compulsory Service	√
20.	Enforcement of fines and penalties	√
21.	Implementation of New Fees	√
22.	Implementation of First Schedule	√
23.	Implementation of Second Schedule	√

Introduction

The long-awaited date has finally been decided. The Dental Act 2018 will come into operation on 1 January 2022 except for paragraphs 37(4)(a) on the requirement for continuous professional development points, 37(4)(b) evidence of Professional Indemnity Cover and 40(1)(b) on the requirements for temporary practising certificate application which will only come into operation on 1 January 2025.

The Dental Act 1971 will be repealed when the Dental Act 2018 comes into operation. Its long title states:

An Act to provide for the establishment of the Malaysian Dental Council and the Malaysian Dental Therapists Board, to provide for the registration of dental surgeon and dental therapist, to regulate the practice of dentistry and for related matters.

It is evident from the preamble above that there will be significant changes in the regulatory processes of the Council and the new Board as the provisions in the new Act seek to strengthen and expand the current regulatory framework governing the dental profession.

Malaysian Dental Council

Under the new Act, there are provisions which bring changes to the composition of the Council. There will be equal distribution of appointed and elected Council members representing the public and private sector. Acknowledging the increased numbers of dental practitioners in Peninsular Malaysia, the total number of elected Council members will be eight compared to six Council members in the previous Act. The members of the dissolved Council under the repealed Act shall cease to hold office six months after the date that the Act comes into operation. Hence, nominations for Council members should start almost immediately after the Dental Act 2018 comes into operation.

Malaysian Dental Therapist Board

As stated in the long title, a Malaysian Dental Therapist Board will be established under this Act. The Board will have the function to register, issue certificates, regulate any examinations for registration, regulate the standards of practice and the ethics and professional conduct of dental therapists. All Board members are appointed by the Minister. The Board will be established after the eligible persons are registered as dental therapists and have valid annual practising certificates.

The Council and the Board will be guided in their procedures by the First Schedule which states the Supplementary Provisions Relating to the Council and the Board.

Registration as a Dental Surgeon

For the purpose of registration as a dental surgeon, a Malaysian citizen must either be certified by the Dental Qualifying Committee to have fulfilled the requirements of the Professional Qualifying Examination if he holds a qualification granted by an accredited local training institution, or to have passed the Professional Qualifying Examination for those who hold a qualification from a training institution where the standard of dental training and examination meets the standard specified by the Council. The Dental Qualifying Committee will be established immediately after the Dental Act 2018 comes into operation and the Professional Qualifying Examination will be conducted the same year.

Registration as a Dental Specialist

A registered dental surgeon with specialist qualifications will be required to register as a specialist in order to legally profess his specialized area of practice. Hence, standards and criteria will be set to recognise credentials and post graduate qualifications before registering specialists.

This is important for the purpose of monitoring the standard of specialist dental practice in the country, which is all the more important in view of the growing dental specialties in the healthcare industry. The standard and criteria will be developed by the Dental Specialists Evaluation Committee with the assistance of twelve (12) Dental Specialty Sub-Committees. The registration of dental specialists will commence in the first quarter of 2022, after the Council has specified the post-graduate specialist qualifications and the Dental Specialists' Evaluation Committee has been established.

Conditional Registration

Any person who holds a qualification granted by an accredited local training institution, has been certified to have fulfilled the requirements of the Professional Qualifying Examination and proves to be a fit and proper person, may apply for conditional registration, where the registration is required to fulfil conditions for registration or employment outside Malaysia. This registration will be implemented when Dental Act 2018 comes into operation.

Registration as a Dental Therapist & Post Basic Dental Therapist

A Malaysian citizen may apply to register as a dental therapist if he holds qualifications listed in the Second Schedule and as a post-basic dental therapist if he holds qualifications listed in the Third Schedule. The registration will commence on 1 January 2022.

Enforcement of CPD points & Professional Indemnity for renewal of APC

A prerequisite that is to be imposed for the application of practising certificate is the need for practitioners to participate in continuing professional development (CPD) activities and attain points. CPD is best defined as a range of learning activities, through which the dental professionals maintain and develop their skills and knowledge throughout their career, to ensure that they retain their capacity to practice safely and effectively and to provide quality care within their evolving scope of practice. The main purpose of CPD is to ensure that patients and the public receive quality and up-to-date dental care.

In addition to CPD, professional indemnity cover is also a prerequisite imposed for the application of a practising certificate. Professional indemnity ensures that patients will receive adequate financial compensation for any harm or loss suffered during the course of treatment, and that practitioners would be protected from the financial consequences of a negligence suit. It will also ensure that practitioners are aware of their own limitations in dental practice and thus not go beyond their professional capability in treating patients to the point of causing harm.

The requirement for CPD points and professional indemnity will only be implemented on 1 January 2025.

By

Dr.Sofiah Bt Mat Ripen

Secretary

Malaysian Dental Council

IMPORTANCE OF DENTAL CHARTING IN MEDICOLEGAL INVESTIGATIONS

" The dead cannot cry out for justice; it is a duty of the living to do so for them"

(Lois McMaster Bujold)

This quote puts the onus of ensuring justice for the dead on us, the living ones; and justice cannot prevail without the body being properly identified. Early and definitive identification of human remains is paramount, regardless of the circumstances surrounding the death. In suspicious deaths, forensic investigation cannot proceed until an identity has been established, indicating that the person has truly deceased. For a fresh body, the visual identification process is done by a close family members, or friends, but for disfigured or mutilated remains, identification can only be achieved via scientific methods, namely: fingerprints, dental records and deoxyribonucleic acid (DNA).

All three scientific methods require data from both when the person was living (ante-mortem) and after death (post-mortem) for a respective comparison to be made, which, if sufficient matching points are available, a positive identification can be achieved. Fingerprint data is available from the *Jabatan Pendaftaran Negara* for Malaysian citizens whereas for DNA, a sample can be obtained from the parents or siblings of the deceased. However, dental data is a bit tricky as it requires both ante-mortem dental records as well as information on the dental clinic which deceased visited while alive.

Dental records are official documents that record all diagnostic information, clinical notes, treatment performed and patient-related communication that occur in the dental office, including instructions for home care and consent to treatment[1]. A well-kept and maintained dental record, can not only serve as the best defence that a dental practitioner could use in case any litigation issue arises, but it could also indirectly help in making the identification process easier and faster, which will subsequently lead to the body being released to the grieving family sooner.

DENTAL CHARTING

Dental identification requires full information on every single tooth present in the mouth both when alive and after death, which could only be achieved through complete dental charting.

These ante-mortem and post-mortem dental chartings serve as the foundation of the identification process, before a more detailed and comprehensive comparison is made. This data would then be inserted into the ante-mortem and post-mortem odontology forms published by Interpol[2].

Dental charting is one of the requirements in a dental record, where it provides an overview of the status of the patient's oral health. It has long been included in many dental guidelines in developed countries, such as the United States, Britain, Australia and Singapore[1,3,4,5]. However, dental charting was never referred to specifically in This leads to incomplete dental records and any of the relevant acts and guidelines in our country[6,7].

This leads to incomplete dental records and lack of compliance among dental practitioners, and is found to be the reason why so many forensic cases cannot be identified dentally. A well-known example was the MH17 incidents in 2014, in which out of 43 Malaysian passengers, only 38 of them had some form of dental records, of which 69.8% were from private clinics, 14% from government clinics, while the rest had both types.

However, only 5 passengers had complete dental charting done, while the rest of the victims had either no dental charting or very minimal information on their teeth, which did not help the identification process at all.

One study done by M. F. Khamis[8] in 2001 found that only 45% of the survey respondents considered the forensic value of the dental records maintained in their clinic. This shows that nothing much had changed within the next 14 years in regards to the standard of dental records in Malaysia.

All this incompetency and lack of compliance in maintaining a complete dental record leads to a delay in the deceased being released to the family, as they have to wait for DNA confirmation, which could take months to obtain results. This unnecessary waiting period adds to the anxiety and stress of the grieving family, which could be avoided if a complete dental record is available. On top of this, the forensic legal investigation and legal claims for the deceased's wealth cannot proceed until an official death certificate is issued, thus adding to the family's woes. Furthermore, our dental records can be exported to anywhere in the world, to help in identifying any dead person if needed, which could be a national embarrassment when they are reviewed by foreign odontologists.

With the new Dental Act 2018, a new Code of Professional Conduct for dental practitioners in Malaysia is being drafted in-line with the new Act. In this new Code, dental charting has been included as part of the requirement in dental records in Malaysia. All dental practitioners will be required to do complete dental charting for all patients attending their clinics and this would take effect when the Dental Act 2018 is fully implemented.

With these steps taken, hopefully the standard of dental records in Malaysia will improve significantly and be at par with other developed countries. Patient's oral healthcare would be more holistic, as well as providing the clinician with the best defence in case of any medico-legal issue. Indirectly, having a clear and updated dental chart will benefit the forensic identification of the patient if needed in the future.

By:

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Ketua Perkhidmatan Kepakaran
Pergigian Forensik KKM dan
Pakar Pergigian Forensik

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6. Private Healthcare Facilities and Services (Private Medical Clinics Or Private Dental Clinics) Regulations 2006
7. Code of Professional Conduct by Malaysian Dental Council (MDC) September 2008
8. The Role of Dental Records in Forensic Odontology by Dr Mohd Fadhli Khamis (GDipFOdont 2001)

Getting Ready to Launch the Professional Qualifying Examination

1. Introduction

In the Dental Act 2018, one of the conditions to qualify for registration as a dental surgeon, (item 29 (1) (b)) requires certification by the Dental Qualifying Committee to have fulfilled the Professional Qualifying Examination (PQE). This requirement will be enforced, with the Dental Act 2018, only when the regulations have been signed by the Minister of Health (MOH).

The PQE comprises of three (3) parts, viz.

Part 1	-	Theory paper comprising 50 one best answer questions (OBA) and 10 short answer questions (SAQ)
Part 2	-	Practical examination using customised resin tooth models mounted on a dental patient simulator comprising management of ICDAS Code 5 caries lesion in a posterior tooth, root canal treatment of a single rooted tooth, and crown preparation and impression taking of an anterior tooth.
Part 3	-	Clinical examination in the form of 10 objective structured clinical examination (OSCE) stations to assess professionalism and patient safety, communication skills, diagnostic and clinical management skills.

The learning outcomes in the assessment blueprint of the PQE are extracted from the Competencies of New Dental Graduates, Malaysia document. Currently all dental undergraduate programmes offered in Malaysia have to map their programme outcomes to these competencies. When the requirement for certification by the Dental Qualifying Committee for registration is enforced, the 3 parts of the examination shall be embedded in the dental professional examinations of the local dental schools, with monitoring by the Dental Qualifying Committee. All local dental students on completion of their course shall also need to have successfully passed the various parts of the PQE and receive a certificate from the Dental Qualifying Committee for registration with the MDC to practise in Malaysia.

Returning graduates from dental programmes in universities in other countries will be required to take and pass all three parts of the PQE and receive a certificate from the Dental Qualifying Committee for registration with the MDC.

The Dental Qualifying Committee shall consist of the following members:

a) The **Principal Director of Oral Health** as the Chairperson;
b) **One (1)** Director of Oral Health as Deputy Chairperson;
c) **One (1)** representative of the Council; and
d) Not more than **four (4)** Deans form the dental faculties of the recognised training institutions;
e) **One (1)** representative of the Malaysian Dental Association (MDA).

The Dental Qualifying Committee shall have the following functions;-

1) The Dental Qualifying Committee shall have the function of determination of the standard of proficiency required at qualifying examinations.

2) In order to carry out its function the Dental Qualifying Committee shall have the power to-

   a) Determine the -

      i) Acceptable admission requirements, the course content and the method of assessment used in the institutions which shall be equivalent to that of a local institution which grants a registrable qualification; and

      ii) The credentials or experience necessary;

      Before issuing a certificate of approval to allow a candidate to appear for the PQE;

   b) Determine the assessment method and the standard necessary for a candidate to achieve before registration under Section 39 of the Act or be granted a temporary practising certificate, through the –

      i) Setting up of its own PQE; or

      ii) Designating the examinations of any local training institution as the equivalent examination; and

   c) Recommending to the Council the fees to be charged for the evaluation and registration for the PQE.

In preparation for the implementation of the PQE, a Pro-tem Examination Committee was established under the Dental Qualifying Committee comprising of:

Ten (10) academic staff with a minimum of 5 years of teaching experience from institutions of higher learning in Malaysia

Two (2) dental specialists from the Ministry of Health with a minimum of 10 years of clinical experience

One (1) Examination Convenor will be appointed from amongst the members of the Dental Qualifying Committee during the preparation of examination paper.

The Pro-tem Examination Committee has the following functions:

1) Develop examination questions and marking rubrics for the various parts of the Professional Qualifying Examination according to the format set by the
2) Screen all the questions that have been developed for their appropriateness
3) Analyse and improve the questions prior to entry into the question bank
4) Prepare the question papers according to the PQE assessment blueprint
5) Standard set the examination questions

2. Preparatory Activities of the Pro-tem Examination Committee

2.1 Development of Questions for Part 1 and 3 for Question Bank

The Pro-tem Examination Committee under the chairmanship of Prof Toh Chooi Gait has held several meetings to develop the templates for the OBA, SAQ and OSCE questions.

The questions for the OBA, SAQ and OSCE were developed through numerous workshops by experts of various disciplines from institutions of higher learning and the Ministry of Health who were invited to serve in the Question Setting Committee facilitated by Prof Toh. The specialists were divided into 3 groups to construct questions according to disciplines as follows:-

Group 1	:	basic dental science, operative dentistry, periodontics and prosthodontics
Group 2	:	basic medical science, oral surgery, oral pathology, oral medicine, radiology
Group 3	:	community dentistry, children dentistry, orthodontics, professionalism, ethics

The questions, developed complete with answers and marking scheme, were mapped to the PQE assessment blueprint and vetted by the Pro-Tem Examination Committee before being saved in the Question Bank.

There are sufficient questions developed to launch the PQE examination when the approval is received. There will be continuous efforts to develop more questions to increase the pool of questions in the question bank.

Group 1 specialists

(from left) Prof Dr Noor Hayaty Abu Kasim, Assoc Prof Dr Marina Mohd. Bakri, Prof Dr Toh Chooi Gait (standing) Prof. Madya Dr Badiah Binti Baharin, Dr Chew Hooi Pin, Assoc Prof Dr Nor Adinar Baharudin, Dr Rasidah binti Ayob

Group 2 specialists

(from left) Dr Masitah Hayati Binti Harun, Assoc Prof Dr Norliza Binti Ibrahim, Dr Nor Farid Mohd Noor, Assoc Prof Dr Noor Hayati Binti Abdul Razak, Prof Dr Toh Chooi Gait, Assoc Prof Dr Christopher Vincent, Prof Dr Khoo Suan Phaik

Group 3 specialists

(from left) Assoc Prof Dr S. Nagarajan a/l M.P. Sockalingam, Dr Khairil Aznan bin Mohamed Khan, Dr Maryati Md Dasor, Prof Dr Toh Chooi Gait, Dr Sarliza Yasmin binti Sanusi, Prof Dr Noraini@ Nun Nahar binti Yunus, Assoc Prof Dr Halimah Awang, Datin Prof Dr Rashidah Esa, Prof Dr Allan Pau Kah Heng

MDC Secretariat Staf
(from left)

Dr Sofiah Mat Ripen, Dr Noorhidayah binti Mohd Arof, Dr Noormi binti Othman, Dr Hazwani Binti Hassan

2.2 Assessment Rubrics for Part 2 PQE

Assessment rubrics for the three practical exercises on dental patient simulators have been developed to standardise assessment of candidates for PQE Part 2 Examination. The Examination Committee has engaged a vendor to produce customised resin teeth for these exercises.

2.3 Pilot Examinations

In preparation for the launch of the PQE, plans are underway to carry out pilot examinations for the 3 Parts of the PQE. The first pilot OSCE examination was held in the International Medical University (IMU) in December 2020. The IMU has already introduced the format of OSCE in the PQE in their final Professional BDS Examination Part 2, where there are 10 OSCE stations evaluating the domains of professionalism and patient safety, communication skills, diagnostic and clinical management skills, besides global scoring of performance at each station. Professor Dr Noor Hayaty Abu Kassim, Dean of Faculty of Dentsitry, Universiti Kebangsaan Malaysia was the external examiner and she is also a member of the MDC Pro-tem Examination Committee. Other members of the Pro-tem Examination Committee and MDC Secretariat staff also attended as observers in the conduct of the examination.

Members of the Pro-Tem Examination Committee had a post-mortem of the observations of the examination and plan to carry out further pilot OSCEs in Universiti Malaya (UM) and Universiti Sains Islam Malaysia (USIM) in the later part of the year before finalising the guidelines for the conduct of OSCE Examinations, to be used by all centres for the PQE Part III Examination.

Plans are underway to carry out pilot examinations for Part 1 and Part 2 in IMU later in the year. For Part 1, 25 volunteers preferably fresh graduates who have experienced in OBA and SAQ examinations will be recruited as candidates for the pilot examination, that will be held on site in IMU, using an examination software that will be able to provide item and psychometric analyses of the results. For Part 2, customised resin teeth and models, which will be mounted in dental patient simulators, will be used for each of the exercise.

The 10 OSCE stations are distributed in the periphery of the room with examination candidates seated in rest stations in the centre of the room.

A typical OSCE station.

Assoc Prof Dr S.Nagarajan a/l M.P. Sockalingam (left) – member of Pro-Tem Examination Committee observing the Examiner and Candidate talking with the simulated patient.

External Examiner Prof Dr Noor Hayaty Abu Kasim (left), observing the Examiner and the candidate talking with the simulated patient

An OSCE station with activity. The candidate carrying out the activity, while being assessed by the Examiner.

After completing all the pilot examinations, the Guidelines for conduct of the various parts of the PQE examination and the roles and responsibilities of the Chief Examiner (Examination Convener) and examiners will be finalised.

2.4 Training of Examiners

Senior academics from local institutions of higher learning and senior specialists from the Ministry of Health and the private sector, who are interested to serve as examiners will be invited to attend an examiner training workshop to fully appreciate their roles and responsibilities and the regulations governing the examinations. Each trained examiner will be certified to serve as an examiner for the MDC PQE for a period of five (5) years; after which he/she will be required to attend another examiner training workshop for an extension of certification.

After the training, the pool of examiners will be notified of upcoming examination dates, to check their availability to serve as examiners. Selection and appointment of examiners from the pool of available examiners to any particular examination will be by the Dental Qualifying Committee.

3. Concluding Summary

The Pro-Tem Examination Committee have been busy preparing for the launch of the PQE. The PQE of the MDC will be implemented once the regulations have received approval. Those dentists returning to Malaysia with degree qualifications from institutions outside Malaysia, will be registerable once they have passed all three (3) parts of the PQE examination and received a certificate from the Dental Qualifying Committee confirming their eligibility. All those entering into dental programmes in local institutions of higher learning, will be undertaking the various parts of the PQE during the course of learning and will also need to receive certificates from the Dental Qualifying Committee confirming that they have passed the PQE as part of their Professional Examination.

By,

Professor Dr. Toh Chooi Gait

Chair MDC Pro-Tem Examination Committee

Oral Saliva Self-Testing for COVID-19

Tests for screening and diagnosis of COVID-19 includes molecular tests to detect the presence of SARS-CoV-2, the virus responsible for the disease. Examples of these tests are the real-time reverse transcription polymerase chain reaction (rRT-PCR), reverse transcription loop-mediated isothermal amplification (RT-LAMP), clustered regularly interspaced short palindromic repeats (CRISPR) and antigen tests e.g. lateral flow immunofluorescent sandwich assay. The WHO recommends the rRT-PCR as the gold standard for testing using a nasopharyngeal swab (NPS) and/ or an oropharyngeal swab (OPS) for specimens.

Asymptomatic spread of COVID-19 is common, and transmission can include the vaccinated population. In healthcare settings, implementing pre-procedure or pre-admission diagnostic tests can help identify asymptomatic or pre-symptomatic SARS-CoV-2 infection. The limitations to this strategy include obtaining negative results in patients during their incubation period, which on average is about 10 to 14 days. Therefore, there is a need to use approved tests with high sensitivity to help identify asymptomatic patients.

In the real-world setting, the preferred SARS-CoV-2 test is based on indications, the performance of the test, and the need for rapid results. Whilst rRT-PCR tests have high sensitivity and specificity, the turn-a-round time can be long and thus results in backlogs, especially with increased testing. Point-of-care serial screening can provide rapid results and be critical in identifying asymptomatic cases, which is important when community SARS-CoV-2 transmission levels are high.

Although rapid screening with an antigen test can quickly exclude the negatives, positives would still require confirmation with rRT-PCR. Thus, during periods of high community infection, clinical discretion should determine if a positive antigen result requires confirmation or will suffice on its own.

Angiotensin-Converting Enzyme (ACE-2) is a protein receptor, onto which the SARS-CoV-2 virus hooks and causes infection to the human body. In the oral cavity, SARS-CoV-2 is found predominantly in the salivary glands, rather than the nasopharynx, as salivary glands act as a reservoir of early target cells for the SARS-CoV-2 virus. This may explain the spread of the virus through asymptomatic individuals, suggesting that the infection may originate from the saliva.

Saliva-based tests have been approved by regulatory bodies worldwide as an alternative method for COVID-19 testing, especially for self-test capacity. Pooled studies of saliva specimens showed comparable sensitivity (86.5%, 95% CI 83.4-89.1) to nasopharyngeal/ oropharyngeal swabs (92.0%, 95% CI 89.1-94.2). Oral saliva tests also had high accuracy and good performance rates of as high as up to 92.0%. In Malaysia, a total of eleven COVID-19 self-test kits have been approved to-date. These tests have demonstrated 90% sensitivity and 100% specificity with the potential to identify even asymptomatic COVID-19 patients.

Oral saliva testing can be performed by the deep throat method, passive drooling saliva and a buccal swab. Oral saliva specimens are suitable for frequent testing such as surveillance, screening and diagnosing SARS-CoV-2 infections in large populations.

The benefits of salivary diagnostic self-tests include a non-invasive method with low cost, a simple process with rapid results, and the sample collection and monitoring can be done in the comfort of one's own home, which reduces the chance of cross-infection. The readily available test kits enable multiple samples to be easily obtained. Patients can be instructed to collect their own saliva specimens, and bring them to specimen collection centres at the outpatient departments and community clinics, hence reducing the risks of healthcare workers contracting infections when performing invasive procedures e.g. nasopharyngeal swabs. Dental practitioners too could perform the COVID-19 saliva tests or recommend saliva self-testing for their patients, to help reduce the chance of spread of the virus in dental clinics.

By:

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The Impact of Dental Surgeons in the National Immunisation Programme

As we grapple with the COVID-19 pandemic, there is broad consensus among the global scientific community that vaccinations are an effective arsenal in overcoming the virus. Yet, as the pandemic rages on, there is a greater likelihood that the Sars CoV-2 Virus will evolve into a deadlier and more transmissible strain, which unfortunately may render vaccines ineffective. It is therefore with urgency that we get ahead of this virus and it takes quick, decisive action and a collaborative effort to do so. We must detect, assess and respond in a coordinated fashion, utilizing all branches of the Ministry of Health, including the Oral Health Division.

Dentistry is frequently seen as a separate branch in the health community, often siloed from mainstream medicine. Nonetheless, it would be naïve to overlook the fact that dental surgeons possess adequate knowledge and the expertise to contribute to the national immunization programme in a consequential way.

Modern dental practice has evolved to not only provide dental treatment, but also to place the overall welfare of the patient at the forefront, through interprofessional collaboration. Most dental practices are adept at monitoring blood pressure and are able to screen patients for glycaemic control and other medical illnesses and comorbidities. Dental surgeons are also knowledgeable about pharmaceutical medications prescribed, common allergies and undergo training for the management of medical emergencies in dental practice. Additionally, dental surgeons often educate patients on the relationship between oral health and chronic diseases, such as diabetes and heart disease. With such a wide skill set, it is fitting that the dental fraternity join our medical counterparts in the fight against COVID-19. *(It is to be noted that as per the government general order, where the term Medical officer is used, it includes dental officers as part of the term)*.

In Malaysia, we are at the end of another devastating surge. There have been 2,277,565 infections and 26,683 coronavirus-related deaths reported in the country since the pandemic began.* This tremendous loss of life is further compounded by a catastrophic blow to the national economy. Lessons needed to be learnt swiftly and what a steep learning curve it has been.

Throughout 2020 and much of 2021, as COVID-19 infection rates waxed and waned, we were subject to mask mandates and stringent social restrictions which were repeatedly imposed and lifted. We know that masks work, as does social distancing but the true test in this battle will be our ability to develop immunity to this virus. The science is there, vaccines work. To keep schools, restaurants and other businesses and institutions open, communities will need to use all these tools together. The most proficient in the medical field have proposed that to break this cycle, protect ourselves and prevent future surges, it is crucial that herd immunity be achieved expeditiously and vaccines are the way to achieve that.**

While the swift development of COVID-19 vaccines have been an extraordinary medical feat, vaccinating a population of nearly 33 million is certainly a daunting task. To expedite the process, the National COVID-19 Immunization Program (PICK) was launched on February 24, 2021. A National Immunization Plan was formulated, that included dental surgeons, who were to tasked primarily as Vaccinators and Consent Officers at the various government run *Pusat Pemberian Vaksin* (PPV) centres.

It is the duty of the Consent officer to check and verify the vaccinee's fitness for vaccination by going over their medical history, medications taken and allergies, determining if they understand the vaccine process and are willing to proceed with their vaccination.

Furthermore, it is the consent officer who signs and stamps the vaccinee's consent document and answers any questions a vaccinee may have prior to the vaccination. If a situation arises that is beyond the scope of the consent officer, they may refer to the Family Medicine Specialist (FMS) on duty. Gaining and maintaining trust in vaccines has proven to be as challenging as the vaccine roll out and as such a dental surgeon serving as consent officer has to employ his or her best bedside manner to offer counsel and support, much like is often done in clinical dental practice when encouraging hesitant patients to undergo dental treatment. Inundating sceptics with facts are futile, listening to what they have to say instead and addressing their underlying concerns is often more impactful.

Vaccinators administer vaccines, as part of a team that includes medical nurses and other auxiliary medical staff. As dental practitioners, we are skilled at administering injections as we do so on a daily basis in our profession. Although vaccinations are administered Intramuscularly (IM) and are therefore different from local anaesthetic in their delivery, the ability to administer an injection is second nature to us. As vaccinators, it is imperative that we learn and understand the types of vaccines, their various methods of dilution and their storage. It is common to have to see upwards of a thousand vaccinees a day, sometimes double that in busier localities, but standard operating procedures are always strictly adhered to and protocols are never sacrificed.

As a dental surgeon serving at *Pusat Pemberian Vaksin* (PPV) *Dewan Sukan Pandamaran*, Klang, Selangor, I have found the experience to be challenging but also incredibly rewarding. In speaking to other dental volunteers, there is a shared sense of dedication and purpose working in vaccine centres, as it offers an antidote to the overwhelming sense of helplessness and dread felt since the start of the pandemic. In working with our medical counterparts, we rejoice in the camaraderie and the belief that perhaps collectively we are achieving something monumental and we are committed to this cause and resolute in our goal.

At the time of writing, the rates of vaccines administered in Malaysia were 49.4 % of the population COMINRATY (Pfizer-BioNtech), 42.3 % Coronavac (Sinovac), 8.1% AstraZeneca and Oxford (United Kingdom) and 0.2% CANSINO (China) respectively. Remarkably, the total vaccine doses administered in Malaysia are 44,352,079 with 23,833,382 (72.9%) people having received at least one dose and an impressive 20,621,994 (63.1%) people have been fully vaccinated.* As such, in most places, with the exception of a miniscule number of breakthrough infections, hospitalization rates and death tolls are declining.

We should take pride in knowing that in small towns and big cities across the country, the dental fraternity have contributed to the success of the vaccination campaign nationwide.

However, the fight is not over and we must press on. The COVID-19 pandemic has been a stark reminder that no single person is safe, unless all of us collectively are safe. The way forward is to get as many people vaccinated as swiftly as possible, and the fastest way to do that now, after months of concerted effort, is through a systematic and organized plan and teamwork. As we persevere, it is not lost on us that the battle against COVID-19 is one that is being waged not just in every vaccine centre, but also in hospital wards and homes across the country. Underlying it all is a sense of accomplishment in knowing that every person vaccinated is another life saved.

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*All statistics and figures in this article are as of 4 October 2021.

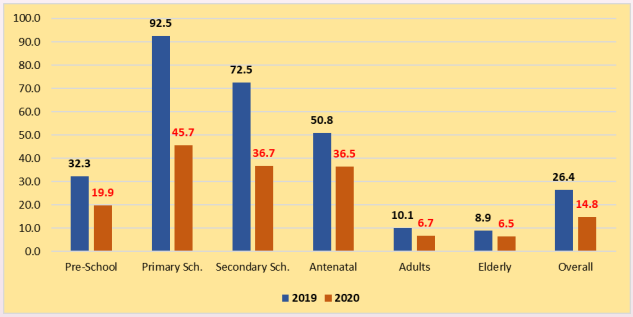
** Herd immunity is when approximately 60-70% of the population achieves immunity, making the spread of disease from person to person less likely.

IMPACT OF COVID-19 ON PROVISION OF ORAL HEALTHCARE IN THE PUBLIC SECTOR

The delivery of Oral Healthcare Services by the Ministry of Health Malaysia (MOH) is targeted in groups at infants and children (0 to 4 years old), preschool children (5 to 6 years old), school children (7 to 17 years old), special needs children, antenatal mothers, adults and the elderly.

In 2020, Malaysia was challenged with the COVID -19 pandemic, when the Movement Control Order (MCO) was announced to control the spread of the viral infection in the community. Since then, most government and private sector activities have been put on hold, to control the COVID-19 pandemic. The Oral Healthcare Service was also affected by this pandemic, where the delivery of oral healthcare services could not operate as usual. Patients were seen on an appointment basis and a new guideline for patient management, with strict infection control procedures, was imposed.

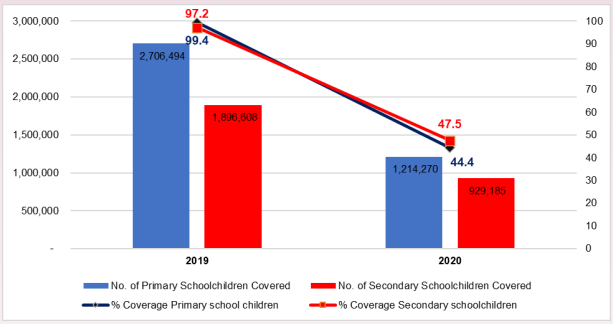
At the start of the pandemic, dental clinics only offered emergency dental treatment, while all aerosol generating procedure (AGP) were postponed as there was a high risk of spreading the COVID-19 virus among patients and staff during treatment. This resulted in a decline in utilisation of primary oral healthcare services in the MOH comparing 2019 to 2020 **(Figure 1)**.



Source: Health Informatics Centre, MOH 2020

Figure 1: Percentage Utilisation of Primary Oral Healthcare Services, MOH 2019 to 2020

The School Dental Services (SDS) were also affected by the COVID-19 pandemic, because services could not be carried out when schools were instructed to temporarily close starting March 2020. This resulted in a significant drop in the primary and secondary schoolchildren coverage comparing 2019 to 2020 **(Figure 2).**



Source: Health Informatics Centre, MOH 2020

Figure 2: Coverage of primary and secondary schoolchildren under SDS, 2019 to 2020

Based on solidarity, dental personnel were mobilized inter and intra state to curb the spread of the COVID-19 virus in the country. Among the activities that have been done during mobilisation include, swab taking, sampling, duty at the COVID -19 quarantine center and hospital, monitoring home surveillance, contact tracing as well as screening at international entrances.

Various innovations were also carried out by the dental personnel to restraint the COVID-19 pandemic in the dental clinics, including the production of separators and donning/doffing area in treatment rooms, as well as the acquisition of Extraoral Vacuum Suction (EOVS) and Air Decontamination Unit (ADU). These innovations and equipment enable Aerosol Generating Procedure (AGP) treatment to be carried out with minimal risk of spreading COVID-19 virus in dental clinics.

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A MALAYSIAN PERSPECTIVE
IMPACT OF COVID-19 ON PRIVATE SECTOR PROVISION OF ORAL CARE

COVID-19 is shorthand for Coronavirus disease 2019. It is a disease caused by "severe acute respiratory syndrome coronavirus 2" (SARS-CoV-2). [1] Typical symptoms of a SARS-CoV-2 infection are fever, dry cough, breathing difficulties and pneumonia. Infection may progress to respiratory failure and even death. [2] SARS-CoV-2 first emerged in Wuhan, Hubei Province, China and spread rapidly world-wide. The first recorded case of SARS-CoV-2 infection in Malaysia occurred on 25 January 2020. Since then, the number of cases has increased steadily. At the time of writing, Malaysia has recorded a total of 836,296 infections with 6158 deaths.

SARS-CoV-2 is transmitted through direct or indirect contact with infected secretions, such as saliva and respiratory secretions, or through respiratory droplets. These secretions are produced when an infected person coughs, sneezes, talks or sings. Evidence also indicates that airborne transmission of SARS-CoV-2 can occur via very small droplets called aerosols. [3] These findings are a cause for concern in dental practice as the nature of the work puts dentists and auxiliary staff in close contact with patients. Besides this, aerosol generating procedures (AGPs) are routine in dental practices. According to the WHO, AGPs are all clinical procedures that use spray-generating equipment. Examples of AGPs in the dental clinic are use of a three-way air/water spray; dental cleaning with ultrasonic scalers and polishing; periodontal treatment with ultrasonic scalers, any kind of dental treatment with high or low-speed handpieces; direct and indirect restorations and polishing; definitive cementation of crowns or bridges; mechanical endodontic treatment; surgical tooth extraction and implant placement [4]

During the first lockdown in Malaysia, most dental practitioners restricted their practice to emergency dental treatment, choosing to post-pone elective dental procedures to later dates. However, as the pandemic continues to rage, it is no longer feasible to do so, both from an economic standpoint, and in consideration of patients' oral and general health. Furthermore, surveys carried out in the US and France found that infection rates of dentist and auxiliary staff were lower than that of the general population. [5] [6] Besides this, a retrospective study conducted in three dental offices in the US from March 1 2020 to September 15 2020 showed that with adequate infection control precautions, transmission of SARS-CoV-2 in dental practices did not occur. [7]

Impact of Covid-19 on the Practice of Dentistry in the Private Sector

SARS-CoV-2 is now part of Malaysian life. It is now no longer a matter of eradicating the virus, it is now a case of learning to live with this virus. In line with this, most private dental practitioners are now providing the full range of dental treatment, but with measures in place to protect staff and patients from infection by SARS-CoV-2. These measures can be broadly divided into patient screening, use of personal protective equipment, upgrades in disinfection protocols, modifications to dental procedures, social distancing, investing in new equipment and structural changes to improve ventilation in the dental office.

Patient Screening

Patient screening and triaging is carried out before the patient comes to the dental clinic and also when the patient comes to the dental clinic. The former is carried out through a phone call if the patient has a scheduled appointment. The appointment is delayed if the patient reports COVID-19 symptoms or has a history of close contact with COVID-19 patients. If the patient is deemed not to be of high risk for COVID-19, they are advised to come alone. When patients arrive at the dental clinic, they have to check-in using the MySejahtera App, their temperature is taken and they are required to fill in a COVID-19 risk assess-ment questionnaire which evaluates clinical and epidemiological criteria for COVID-19 risk is determined. [8] [9]

Only patients who are at low risk for COVID-19 are treated at the dental clinic. It is advised that high risk patients who require urgent dental treatment be referred to dental clinics which have the necessary management facilities.

Use of PPE

Personal protective equipment (PPE) such as surgical masks, gloves, goggles, surgical gowns and disposable caps are routinely used in most private dental practices. Dental practitioners are familiar with these personal PPE and know how to use them. When COVID-19 cases started to rise, dental practitioners became more stringent with the personal protective equipment they used. Many began to use N95 respirators and face shields. In order to reduce PPE wastage, it is recommended that the PPE used is specific to the biological risk of the dental procedure. Full PPE including N95 respirators, gloves, disposable surgical gowns, disposable caps and face shields should be used for procedures with high biological risks. On the other hand, for procedures with low biological risk, PPE such as surgical mask, gloves, goggles and surgical caps will suffice. [10]

Upgrades in Disinfection Protocols

Strict disinfection protocols are one of the bedrocks of dentistry. These protocols have been upgraded to combat the SARS-CoV-2 virus. Hand sanitizers are placed prominently in the waiting area for use by patients and staff alike. Some dental clinics make patients gargle with an antiseptic mouth rinse before any procedure. Antiseptic mouth rinses containing povidone-iodine, hydrogen peroxide, cetylpyridinium chloride (CPC) and chlorhexidine have been used. A literature review by Herrera et al. concluded that antiseptic mouth rinses may decrease the risk of transmission by limiting viral load generated in aerosols produced by AGPs. [11] A literature review by Carrouel et al. listed mouthrinses with PVP-I, chorhexidine and hydrogen peroxide as having in-vitro and in-vivo anti-SARS-CoV-2 activity. [12] While there is currently no clinical trials evaluating the efficacy of mouth rinses in reducing viral load in the oral cavity, rinsing with mouth rinses makes biologic sense and does no harm. In view of this, it makes sense to require patients to rinse with an antiseptic mouth rinse before commencing dental treatment.

Other infection control measures include disinfection of the dental chair and operatory in-between patients, and regular disinfection of surfaces frequently touched by patients such as door handles and surfaces in the patient waiting area.

Additionally, bearing in mind that the virus can be air borne, the dental chair and operating environment is ventilated for 10-15 minutes before the next patient enters. Some dental clinics in Malaysia have also started the practice of fogging the operating area with hypochlorous acid after each AGP. This is supported by a review by Block et al., which suggests that fogging with hypochlorous acid may be helpful. [13]

Modifications to Dental Procedures

Modifications are also made during aerosol generating procedures, such as the use of high volume evacuation during AGPs to reduce aerosol spread. Some dental clinics have also started mixing an appropriate disinfectant like hydrogen peroxide, povidone iodine, hypochlorous acid etc. into the water supplies of their dental operating units or/and scaling units [12] [13] The theory is that any aerosol produced will also contain disinfectant that may neutralize any pathogenic viruses and bacteria. Rubber dams are used more frequently as it has been shown that SARS-CoV-2 is found in saliva. [14]

Social Distancing

Social distancing between patients and staff is maintained in private dental clinics. Signs are set up in the sitting area to encourage patients to distance themselves from one another. Staff are also advised to keep their distance from one another even during staff breaks and while eating.

Investing in New Equipment

Some private dental clinics have invested in new technology and equipment such as installing high efficiency filters in the air conditioning systems, extra-oral vacuum suction devices, air-cleaners, ultra-violet germicidal lights and upgrading to hand pieces equipped with anti-reflux devices. Anti-reflux devices prevent contamination of the dental unit lines and is important in preventing cross-infection. [14]

Structural Changes to Improve Ventilation

In 2020, the WHO stated that adequate ventilation in closed settings reduces the rate of transmission of SARS-CoV-2.

It recommended avoiding the use of split air conditioning and the installation of exhaust fans, or whirlybirds (whirlygigs, wind turbines). [4] In 2021, the WHO published a document entitled "roadmap to reduce SARS-CoV-2 transmission". [15]. The Malaysian Ministry of Health and the Ministry of Human Resource have also jointly released guidance notes on ventilation for use during this pandemic. [16]

In response to this, some dental clinics have mounted exhaust fans at windows to blow air outwards and increase air exchange. Exhaust fans may be an excellent solution to prevent stagnation of air and to keep air moving and exchanged with air from outside the building. An average ventilation fan exchanges air at the rate of about 700 cubic feet per minute and should replace the air in a room 10-20 times per hour.

Where possible, windows are left slightly open to allow better air exchange. It is vital for all enclosed spaces to have proper ventilation that allows airborne droplets to be removed outdoors.

Economic, Social and Psychological Impact on Private Dental Practitioners

There is significant economic, social and psychological impact on private dental practitioners in Malaysia. The various movement control orders have reduced patient attendance in dental clinics nationwide. Coupled with increased time between patients to ensure proper disinfection, and cost of installing new fixtures and purchasing PPEs and new equipment to protect against transmission, most dental practitioners have experienced a drop in profit.

Social activities between dental professionals for the exchange of information have drastically reduced. The recent physical conferences planned by the Malaysian Dental Association have been cancelled or carried out online. On the positive side, many dental professionals have switched to online learning. Change in routines and uncertainty may lead to depression and anxiety. This has been found to be the case in the US. [5], and may also be the case in Malaysia.

Impact on Oral Health of Patients

Many patients are putting off their regular dental check-ups for fear of infection. This does not bode well for their long term oral health. A recent viral WhatsApp message purporting patient death from dental local anesthetic administration post vaccination certainly has not helped matters. Patient education is essential to reverse this tide, as regular dental check-ups are vital to maintain the good oral health of the nation.

Wither the Future?

We are greatly encouraged by the progress of the National COVID-19 Immunization Programme. Most private dental practitioners and auxiliary staff have received their two vaccination doses in Phase II of the programme. It is hoped that life will return to some new semblance of normal as more and more people get vaccinated. Even so, we have to be constantly vigilant as new variants emerge. The recent Delta variant is reported to spread faster and is more virulent due to its purported ability to infect the lung directly leading to rapid deterioration of the infected person.

Even as the virus mutates, humans are adapting just as quickly. Today, two types of COVID-19 home use test kits have been approved and are available for purchase nationwide. As home use test kits become more prevalent and affordable, it would be prudent to test patients with a high risk for COVID-19 before each treatment.

Despite the obvious trials that the whole world and the people around us and we ourselves are going through, we still see the future optimistically. History has shown us how every great disaster upon the world results in greater advances and growth. We look forward to greater advances in healthcare, in managing and overcoming infectious diseases, in treatment and even curing of diseases like cancer, diabetes, heart diseases, autoimmune diseases and many others, with the new technological surges, acquired as a result of tackling the current pandemic. Also, our current painful experiences may have ingrained deeply into us how important human relationships are and how we should press on to resolve and overcome conflicts and recognize that no matter what our differences, we all belong to one big human family.

"That which does not kill us make us stronger"

Friedrich Nietzsche

By:

Dr Chow Kai Foo

Assistant Honorary General Secretary

Malaysian Dental Association

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Impact of COVID-19 Pandemic on Dental Education: Challenges, Strategies and Opportunities - I) SEGi University

Introduction

On 11th March 2020 the World Health Organization (WHO) declared the COVID-19 outbreak a pandemic, after which Malaysia began to implement lockdown measures and restricted academic activities to curb the spread of infection. This unprecedented disruption challenged the long-held beliefs in our education system and forced us to implement new norms.

Dental students are highly susceptible to contracting a COVID-19 infection due to the nature of their clinical training, proximity to the patient's oral cavity and the aerosol-generating procedures (AGP). Although we have successfully switched to online teaching, it was challenging to address the preclinical and clinical training, while ensuring safety for the students, staff and patients. It was therefore imperative to adopt a hybrid mode that allowed online teaching and provided adequate clinical training, with strict adherence to standard operating procedures (SOPs) and guidelines for dental practice.

Recognizing the issues, Faculty of Dentistry, SEGi University has addressed the challenges by bringing in some innovative student centric approaches for education, which ensure their well-being. This article will share an overview into the various challenges encountered, strategies adopted in overcoming them and future opportunities in teaching and learning in dental education.

1. Mental health and well-being of dental students

The effect of the lockdown on our psychological well-being has been profound. Many dental students at the faculty reported stress and anxiety affecting their studies during the pandemic. The most common concerns were isolation, the lockdown's unpredictability and its implications on their immediate future.

To overcome anxiety, an app-based meditation program was incorporated into the students' learning time for one month, to improve their resilience and to reduce stress. It has had a positive impact on the students, with regards to resilience, awareness of thought patterns, emotions and reactivity levels. The current generation is technology-friendly, and the same platform has been be used to provide remote psychological support. This small initiative made a huge difference to the students in terms of well-being and positive psychological approaches. *[Rath A, Wong M, Wong N, Brockman R. Use of a mindfulness application to promote students' mental well-being during COVID-19-era. J Dent Educ. 2021;1-3].*

In addition, the Online Mentor-Mentee Program (OMMP) was implemented to provide academic, moral and psychological support to students. This program also enabled them to communicate, socialize and enhance their professional networking skills and confidence.

Similarly, faculty members have been under significant pressure as they are expected to quickly adapt to unfamiliar new delivery methods for teaching-learning activities and assessment, and at the same time keep students engaged and motivated from a distance. Additionally, the online teaching and work-from-home methods have caused difficulty in prioritizing their personal and professional schedules. Therefore, it is imperative that essential training is provided for faculty members, to enable them to adapt to the new teaching strategies and reprioritize their professional goals and assigned responsibilities. The SEGi University Centre for Teaching & Learning

2. Alternative teaching methods

Upon the implementation of lockdown measures, online instruction replaced all the didactic classroom-based components of the curriculum, using synchronous and asynchronous approaches. The faculty members utilized a variety of technological platforms to facilitate the delivery of virtual lectures and the conducting of group discussions, seminars, Problem-Based Learning (PBL) and case studies. Many alternative teaching methodologies have been adopted to enhance student engagement.

One such method was using the Microsoft Whiteboard tool to ideate, create, and collaborate visually. In particular, it was used to teach periodontal surgery principles by kinesthetically including flap designs and incision principles **(Fig.1 & Fig. 2).** This mode of teaching has elicited positive feedback in the understanding of these topics through remote access. Emphasis was also been given to "Online Peer Assisted Learning" and "Guided Self-Directed Learning" for effective utilization of available time.

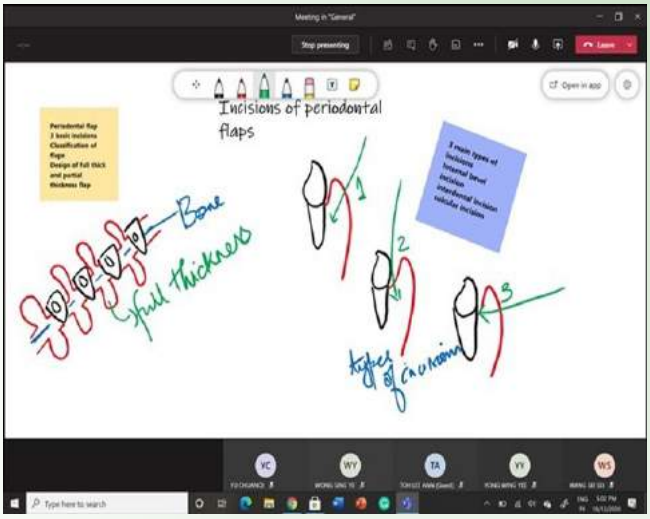


Fig. 1: Students kinesthetic involvement using Microsoft Whiteboard for learning periodontal flap designs using mouse/ pen

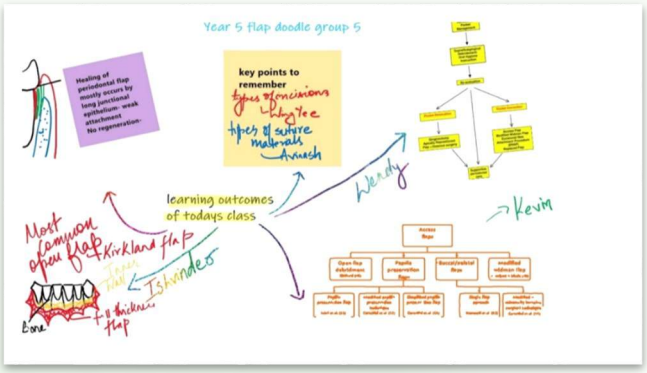


Fig. 2: Focussed group discussion of the learning outcomes of periodontal flaps using Microsoft Whiteboard

3. Patient care and teledentistry consultations

Due to the high-risk of COVID-19 transmission in dental clinics, elective dental treatment was suspended. Students and faculty members rendered only emergency treatment, while stringently following the established SOPs. Teledentistry consultations were adopted to overcome the patients concerns. Such consultations served as compensatory training for students, to replace their cancelled clinical sessions and external clinical training, and minimal clinical exposure. Although this technique lacks the essential tactile assessment for students, it has proven to be very beneficial in ensuring the continuity of patient care, prioritizing patients' needs and alleviating any anxiety caused by significant delays in scheduling patients' appointments. It also reduces the use of PPE and other precious clinical resources during the pandemic.

The patient reception and waiting areas have also been redesigned to reduce close contact and ensure physical distancing. A proper triage and pre-entry checkpoint for all patients, faculty members, staff and students was set-up. The use of hydrogen peroxide mouthwashes, rubber dams and high -volume suction were reinforced as they minimize the spread of the virus during aerosol production.

4. Achieving the Minimum Clinical Experience (MCE) and Expected Clinical Experience (ECE)

Throughout the Bachelor of Dental Surgery (BDS) program, students are required to work towards completing their clinical quota in the various specialties, to ensure that they acquire the minimum competencies expected of them before graduating.

Adequate clinical training and hands-on experience with the patient is a critical component in the provision of good dental care, with high confidence. In order to achieve adequate clinical practice particularly for the final year students, their clinical training sessions were extended right up to the end dates of the academic session. The additional sessions have enabled all students to complete their required quotas, before the next batch of students come back to begin their new academic session. The Dental Dean's Caucus has also facilitated this by reviewing the MCE and ECE graduation requirements for dental students within the new guidelines.

5. Assessments

During the pandemic, many dental schools have creatively used a variety of online tools not only for teaching, but also for student's assessment. The faculty has conducted the end of session Professional Examinations for students of Year 1 to Year 4 using the "Blackboard Learning Management system" **(Fig. 3**), which is an online learning platform for teaching and learning. It provides a viable option for conducting various assessments by incorporating the different types of questions, such as multiple-choice, modified essays and short answer, virtual oral examinations and video production for assessment. However, the Professional Examinations for Year 5 students remained as face-to-face **(Fig. 4).**

Despite the success with online theory examinations, conduct of the clinical component of the examinations remains challenging. Clinical competency, psychomotor skills and patient management skills are a vital component of the students' learning and needs to be assessed. Thus, the practical and clinical components of the assessment were conducted as face-to-face "Objective Structured - Practical Examination (OSPE) or Clinical Examination (OSCE)" with stringent SOPs and physical distancing measures for all the students and faculty members.

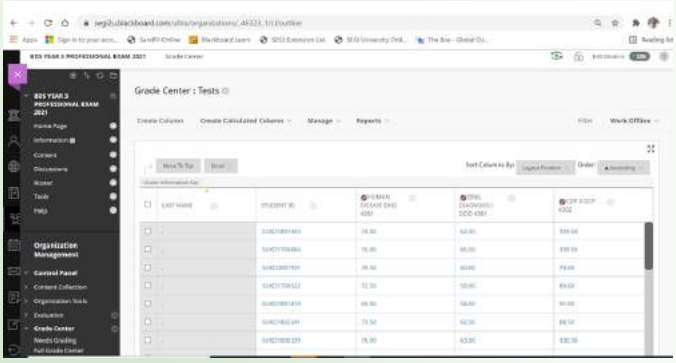


Fig. 3: Professional examination and marking conducted through Blackboard for Year 1 to Year 4

Fig. 4: Face-to-face Professional Examination conducted for Year 5 with strict SOPs.

6. Research

Due to the repeated lockdowns, productivity in both basic laboratory-based and clinical oriented research projects have been negatively affected. The completion of on-going student and staff research projects have also been delayed, with a few being terminated. On the other hand, it has had a positive impact on the scope for online research projects, manuscript writing and publication as time that was previously spent in the clinic and for patient care, can be utilize for such purposes.

As expected, COVID-19 related research has been on the rise, and the pandemic provided an opportunity for researchers to pursue research in this domain. In order to utilize the available time effectively while inculcating a positive attitude toward research and innovation, the Year 4 students were given online research projects, supervised by faculty members to enhance their research skills. Furthermore, community based projects were carried out using online platforms and various social media sites such as Facebook and Instagram, which benefited students, patients and the community. Webinars have been organized to disseminate dental knowledge to all ages in the comfort of one's home, and holding real-time discussions, with the objective of educating viewers on the importance of oral care.

7. Faculty Development Program and Collaboration

Several physical conferences, continuing professional education activities and scientific meetings were cancelled during this pandemic. Alternatively, online conferences, summits, seminars and workshops have been successfully conducted at national and international levels using online platforms. Their popularity and wide acceptance has been attributed to their ability to overcome the space constraints of traditional settings. At SEGI University, the Faculty of Dentistry successfully organized the 13th.National Dental Students' Scientific Conference (NDSSC) 2021 virtually. The objective of this conference is to encouraging dental students from all the 13 dental schools in Malaysia to interact, compete and build fellowship with their peers. It also provides a platform for students to present their research projects.

Future Directions

Although this unprecedented pandemic has resulted in a plethora of challenges, it also resulted in many positive outcomes in dental education. The crises forced the majority of dental schools to challenge their conventional teaching approaches and swiftly adapt to on-line methods to ensure the continuity of teaching and learning activities. This was facilitated by the available on-line innovative technologies, which are expected to persist even after the pandemic. The most significant favorable outcome that has emerged is the unpreceded level of connection and communication within the dental education community and this was reflected in enhanced educational cooperation, research collaboration and freedom to create and share learning content.

Besides this, dental schools have gained invaluable learning experience in managing the crisis and prepared dental educators for future unexpected challenges. This could also bring an array of opportunities for students and faculty members to pursue online dental courses from different parts of the world.

Albeit currently available technology is sufficient to replace theoretical teaching, it is still not equipped to completely replace the conventional hands-on clinical training offered in the dental schools. At present, a few clinical domains can be tested online and there is scope for adopting several alternative domains that may be a part of future of dental education.

Some innovative technologies such as haptic, virtual reality and augmented reality need further enhancement and must be made affordable and portable. These platforms can mimic patients and aid in the virtual continuity of clinical education and assessment during this time. Dental schools must use this opportunity to embrace various applications and software, which focus on complex clinical-based scenarios that can be used in virtual group discussions to improve students' decision-making and diagnostic skills. Concurrently, dental faculty members must focus on designing various online modules, courses and assessments for dental students.

This pandemic crisis has highlighted the potential gaps in our existing curricula and the scope for improvement. Dental schools must adopt stringent infection control protocols and this topic must be comprehensively introduced into the dental curriculum. Teaching and practicing teledentistry was also proposed as a potential solution to increase acceptability with patients. Teledentistry could persist after the current pandemic passes, particularly in the Oral Medicine and Oral Pathology discipline. It is therefore justified to include this into the dental curriculum.

Conclusion

The COVID-19 pandemic challenged the traditional curriculum delivery methods and forced dental schools to rethink their curricular delivery models, and thus encouraged a plethora of opportunities. The majority of the challenges posed by COVID-19 were tackled creatively by dental educators by using new technological platforms. However, at present the clinical training cannot be replaced with the existing technology.

By:

Dato' Dr. Ahmad Termizi bin Zamzuri

Faculty of Dentistry

SEGi University

Impact of COVID-19 Pandemic on Dental Education: Challenges, Strategies and Opportunities - II) UiTM

1. INTRODUCTION:

The COVID-19 pandemic is a crisis, the likes of which we have never seen before and it is forcing us to reflect upon ourselves and how we react to difficulties. It has also dramatically reshaped the way higher education is delivered, globally. Universities are rapidly shifting how they communicate and operate, to meet the evolving needs of students and staff, and this includes UiTM. COVID-19 has created a new normal for UiTM, as an institution, and especially for us in the Faculty of Dentistry, which relies heavily on building and sharpening our clinical skills. As part of the healthcare system that deals, most of the time, directly in the oral cavity, with most of our treatment being aerosol producing procedures, we need to re-look our routine procedures and explore the possibility of modifying our practices in this difficult time.

We are now revolutionising the online learning landscape, reshaping application processes, and refreshing crisis management strategies. We have taken steps to ensure that the safety and wellbeing of our students, staff, and patients are a priority.

Several measures have been implemented and will be implemented as and when required, including:

(i) Switching some of the scheduled courses (theory) to the online mode for our undergraduate and postgraduate clinical courses.

(ii) Postponing the start dates for some of our courses to the following semester.

(iii) Changing admission application deadlines for our next intake.

(iv) Changing admission interviews and examinations for our next intake to an online mode.

(v) Deferring some of our course offers.

The COVID-19 pandemic is rapidly shifting how we communicate and operate to meet the evolving needs of students and staff. It might defer, but has not deterred, the faculty plans and priorities, and we remain resolute in our commitment to offer a premier and holistic higher education to our stakeholders. We are all in this together and we will get through this together

#kitaUiTM.

2. MANAGEMENT PROMPT ACTION

The seriousness of COVID-19 caught the world by surprise. It was not expected that the disease would spread so fast across the world from Wuhan, China. However, as early as March 2020 when the number of infections in the country was getting higher and the faculty had treated several PUI patients, staff and students of the faculty were very worried, as the dental fraternity deals in an area where the source of infection spreads.

The faculty top management had an emergency meeting on 12 March 2020 to plan the action to be taken to curb the spread of COVID-19 infections. The following were the immediate actions taken:

(i) All lifts button in the faculty were covered with a plastic cover and the covers were sanitized frequently during the day. It can be a mechanism of spreading the virus, when the lift buttons are touched by infected users.

(ii) The faculty also reverted to the manual attendance recording of staff (work log) instead of the thumbprint as a record of attendance. All staff report to the respective heads of department each day.

(iii) As the faculty academic term was coming to the end of the semester, it was decided to amend the academic term, by bringing forward the two weeks break and one-week study leave. In doing so most of our students could return to their hometown by 14 March 2020, i.e. 5 days before the Movement Control Order (MCO) was implemented throughout the country and a week before the university made the changes to the academic calendar.

The prompt action by the faculty was in-line with the university's decision to review the academic calendar. Also, by sending the students home a week early, only one of the dental students was caught in the campus when the MCO was implemented. This relieved the management of faculty and university of the need to oversee the students in college during the MCO period.

3. STUDENTS AFFAIRS

3.1 Health

Since all students were then back in their hometown, those who had close contact with high-risk family members or individuals, and those who developed symptoms, were advised to seek medical attention at the nearest Klinik Kesihatan. Students who were categorised as PUS (Person under Surveillance) and PUI (Person under Investigation) were to inform the Deputy Dean of Student Affairs. The Deputy Dean of Student Affairs would pass this information to the Faculty's Deputy Head of SOSHCo (Occupational Safety and Health Committee), for record and follow-up.

3.2 Safety

All our students were back in their hometown, and stayed with their own families, who were responsible for their safety. Only one postgraduate student (international candidate) was staying at the Residential College on the Sungai Buloh Campus. The Campus Auxiliary Police (Polis Bantuan) unit is responsible in ensuring safety within the compound, under close liaison with the College Principal. The Head of the Auxiliary Police will also inform the Deputy Dean of Student Affairs if there is any matter pertaining to students' safety and security.

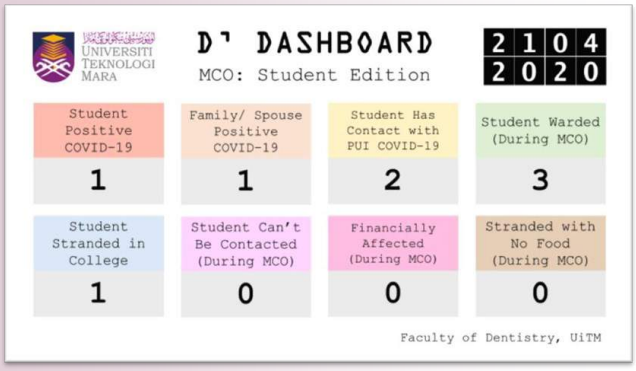
3.3 Welfare

The Deputy Dean of Student Affairs is in frequent contact with members of the faculty's Student Respresentative Council (Majlis Perwakilan Pelajar), Year Representatives and Council Members of the Student Associations via WhatsApp. Students are informed about updates received from the University Student Affairs Division via WhatsApp and email blasts.

The Deputy Dean of Student Affairs is also in daily contact with the Deputy Vice-Chancellor (Student Affairs), Deputy Rector (Student Affairs), University Student Affairs Division and College Principal via Whatsapp messages and emails, to receive updates on the latest announcements, guidelines or circulars concerning students' welfare and to refer any matters that require further attention to the relevant authority.

The welfare of our student (one student only) staying at the Residential College is taken care of by the College Principal, who updates the Deputy Dean (Student Affairs) on a regular basis. Students are also advised to contact the Deputy Dean of Student Affairs directly if they experience any difficulties or have issues relating to their wellbeing. Academic-related matters brought up by the students will be forwarded to the Deputy Dean of Academic and the Dean for further action.

Real-time data on students is also shared with all members of the Faculty of Dentistry through the Dentistry Dashboard (D 'Dashboard) via official e-mail and WhatsApp as follows:



4. STAFF AFFAIRS

4.1 Health and Safety

All staff are strongly advised to practice standard preventive measures, such as social distancing, use of hand sanitizers and regularly hand washing with soap and water for at least 20 seconds, and wearing a face mask if they show any respiratory symptoms, such as coughing and sneezing.

When the MCO was enforced and extended, it severely affected all normal routine activities and forced everyone to avoid social contact. In view of this, the Faculty communicated information and awareness of COVID-19 to all staff and students through social media platforms such as WhatsApp, Telegram, Facebook and Instagram.

Staff who are categorised as PUS and PUI are required to inform their superior, who will then pass the information to the Faculty's Deputy Head of SOSHCo, for record and follow-up.

We encourage our staff to take specific care in relation to the health and safety of their family members, and even their neighbors and visitors to their homes.

All staff are now working from home at least 3 days a week. Thus, in order to maintain their health and safety at home, we regularly advise our staff to risk- assess their work stations at home and follow the University's Occupational Safety and Health Guidelines.

We also remind our staff that the incorrect use of computers at home can cause associated health problems such as musculoskeletal disorders, eye strain and fatigue or stress. Therefore, we advise our staff to take breaks from the work space at home and be aware of any symptoms that might be caused by an inadequate work space. Staff who work from home are required to report to their superior regarding equipment faults which may be a health hazard.

Video chat or meeting via Google Meet is now a new norm to us all, which helps us stay connected. But most of the staff complained of having "online meeting fatigue". We therefore reduced the number of meetings in a day in order to alleviate the fatigue. We recommend that our staff read some online guidelines regarding this matter, to reduce the online meeting fatigue.

With many superiors advising staff to work from home (WFH) during the coronavirus outbreak, we are looking at how a period of self-isolation or a prolonged time working from home can affect the health and wellbeing of our staff and we encourage superiors to practice a different approach to their staff.

In view of the scenario of WFH to combat COVID-19 outbreak, Faculty management have regularly communicated with all staff through their superiors to always maintain a healthy and safe working environment at home, as follows:

(i) Communicate: We enquire about our staff and their family situation daily and try to embrace WFH with them;

(ii) Monitor: Depending on the nature of the job, we measure and monitor output of the staff daily/ weekly, rather than their recorded working hours at home;

(iii) Routine: We establish a routine, with regular start and finish times of work. We share diaries with co-workers, including issues of child care;

(iv) Healthy Work Station/ Environment at Home: We encourage our staff to have a dedicated space for WFH and 52% of our staffs choose their living room to work remotely;

(v) Minimize Distraction: We suggest our staff to try minimize inevitable distractions at home in order to continue work remotely; and

(vi) Regular Breaks and Exercise: We remind our staff to get up and stretch every 30 minutes of work, to breathe, drink a lot of plain water, have a healthy snack and even play with their children/ pet for a while, before they continue with their work.

According to our D' Survey, WFH does not suit everyone. Office dynamics and informal information flows may have a significant impact on the staff's performance. Some staff may develop better in a traditional office environment, and those without much experience in their role are likely to need closer supervision, which is not possible if they are working from home.

Individuals may also have a distorted view of WFH, with little recognition or understanding of the potential drawbacks, and it is important that both the advantages and the disadvantages are considered. Thus, a trial period may be appropriate in order to gauge suitability before any longer-term WFH arrangements are put in place.

We therefore, recommend that the University Occupational Safety and Health Guideline not only covers staff who work in the office, but also needs to be extended to those who WFH. Staff who WFH should understand that they might need to give employers access to their homes, so that compliance with health and safety obligations can be ensured. We also recommend that the University produce a web-based training programme to further explain WFH risks to staff, in order for them to assess their individual computers and their ability to WFH.

4.2 Security

In the early stages of the COVID-19 transmission, before the MCO was enforced, to ensure the safety of all faculty staff, there was only one entrance used to enter into the faculty. Staff were given an approval letter from the Dean to work at the office, as a preliminary security step to protect all staff.

To acknowledge to contribution of the Auxiliary Police squad of UiTM Sungai Buloh Campus for safeguarding the Faculty, the Faculty Staff Welfare Club has donated some gifts,especially for the team on duty on the first day of Aidilfitri this year.

4.3 Welfare

We strongly believe in and uphold “Put People First” in our administration and management of the faculty.

WFH is not yet usual for all staff. Although WFH is not as common as it might seem, the unprecedented circumstances of the COVID-19 outbreak could change this scenario. In view of this, the management of the faculty are aware that those WFH are alone and should be managed as such, particularly when it comes to mental health and wellbeing. To ensure the welfare of staff during this period, UiTM has provide counseling services through online or over the phone.

We also conducted a survey Dentistry Survey (D 'Survey) of all faculty members (as respondents) to obtain feedback and assess the perception of staff at the Faculty of Dentistry, UiTM Sungai Buloh Campus on issues with WFH enforced during the MCO.

The findings of the survey have been used to improve the administration and human resources and welfare of staff, especially during the MCO period. The findings will also be a basis for the decision-making process in the future.

The results of the questionnaire are as follows:

Apa Kata *D' Survey/ And D' Survey Says*

Cabaran Bekerja Dari Rumah (BDR) Sepanjang PKP/
Challenges with Working from Home (WFH) During MCO

96%	**92%**	**76%**	**98%**
Faham konsep BDR/ *Understands the concept of WFH*	Hidapi masalah kesihatan semasa PKP/ *Suffering from health problems during MCO*	Ada komputer atau komputer peribadi/ *Own a computer or laptop*	Ada talian internet/ *Have internet access*
52%	**55%**	**74%**	**60%**
Cabaran terbesar semasa BDR: Tumpuan kepada keluarga/ *Biggest challenge with WFH: Focus on the family*	Paling rindukan rakan sekerja sepanjang PKP/ *I missed my colleagues the most during MCO*	Lebih selesa bekerja di pejabat/ *More comfortable working at the office*	Bersedia BDR sepenuhnya selepas PKP/ *Ready to WFH completely after MCO*

Berdasarkan *D' Survey:* Soal Selidik Fakulti Pergigian, 30 April 2020 (143 orang staf responden - 69%)
Summary of D' Survey Findings, 30th April 2020 (143 staff as respondent - 69%)

1/3

Apa Kata *D' Survey/ And D' Survey Says*

Cabaran Bekerja Dari Rumah (BDR) Sepanjang PKP/
Challenges with Working from Home (WFH) During MCO

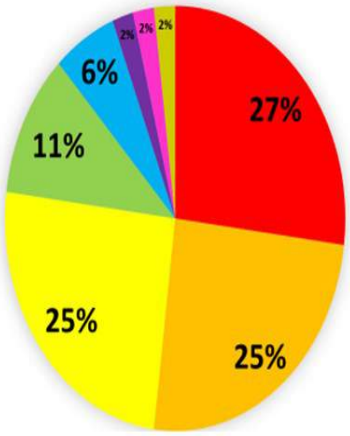
6%	**52%**	**31%**	**63%**
Terkandas di kampung semasa PKP/ *Stranded at hometown during MCO*	Laksana BDR di ruang tamu rumah saya/ *WFH in my living room*	Ada mesin pencetak atau pengimbas di rumah/ *I have a printer and scanner at home*	Selesa berkomunikasi melalui media elektronik atau sosial, berbanding bersemuka/ *Comfortable communicating via electronic and social media, instead of face-to-face*
13%	**60%**	**59%**	**70%**
BDR: Lebih daripada jam bekerja di pejabat/ *WFH: More hours than working at the office*	BDR: Kurang daripada jam bekerja di pejabat/ *WFH: Fewer hours than working at the office*	BDR beri saya Keseimbangan Kerja-Kehidupan/ *WFH gives me Work-Life Balance*	Yakin boleh bekerja tanpa penyeliaan/ *Confident of working without supervision*

Berdasarkan *D' Survey:* Soal Selidik Fakulti Pergigian, 30 April 2020 (143 orang staf responden - 69%)
Summary of D' Survey Findings, 30th April 2020 (143 staff as respondent - 69%)

2/3

Apa Kata *D' Survey/ And D' Survey Says*

Apakah perkara paling terkesan pada anda sepanjang BDR dan PKP?
How are you impacted the most as a result of WFH and MCO?



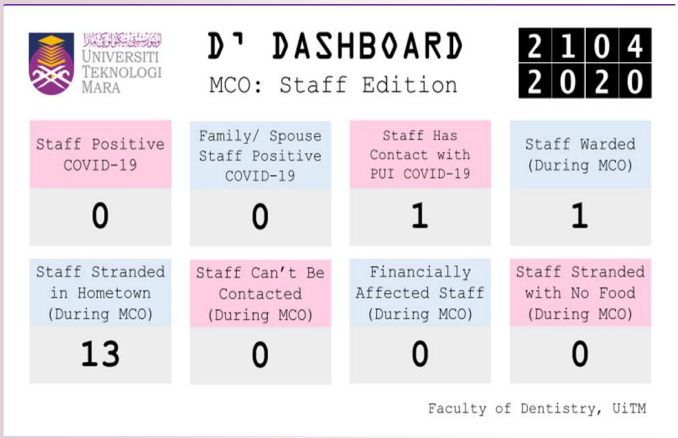
27%	Tiada kesan apa-apa *No impact*
25%	Sukar untuk laksana BDR semasa PKP *Difficult to WFH during MCO*
25%	Masalah keluarga *Family problem*
11%	Masalah kewangan *Financial problem*
6%	Isu peribadi (Bosan, tiada kebebasan dll) *Personal issues (Boring, no freedom, etc)*
2%	Ketidaktentuan masa depan perniagaan sampingan *The uncertainties of my side business*
2%	Masalah kesihatan *Health problem*
2%	Isu Hal Ehwal Akademik dan Penyelidikan *Issues on Academic and Research Affairs*

Berdasarkan *D' Survey:* Soal Selidik Fakulti Pergigian, 30 April 2020 (143 orang staf responden - 69%)
Summary of D' Survey Findings, 30th April 2020 (143 staff as respondent - 69%)

3/3

Real-time data on staff is also shared with all faculty members through the D

'Dashboard initiative, through the official email and WhatsApp as follows:



We shared the information on financial assistance with all faculty members; i.e. UiTM Special Assistance (UiTM Staff) offered/ provided by UiTM through the Zakat, Charity and Welfare Division, UiTM.

The Faculty Management has lent equipment, such as laptops, to staff who need to work from home during the MCO period.

The Faculty Management also controls the movement of staff to the Faculty, where only the Dean can give permission for staff to come into the Faculty, including staff in essential services.

Staff returning from overseas (official visit/ study leave) are reminded to self-quarantine and observe home surveillance; based on the circular from the Vice-Chancellor and the UiTM Health Center.

Along with the anxiety sparked by a potentially deadly virus, we are also facing the fact that many staff are being plunged into WFH for the first time, to say nothing of the requirements for isolation. Some of these staff may already have experience of a day or a week of isolation, but few of them will have worked full time from home and few of their superiors will have managed large teams in such a situation either.

Office-based staff (i.e. drivers, assistant engineers) may also work remotely for a maximum of three days a week during the MCO. Their superiors will assess their eligibility on a case-to-case basis.

Thus, in the future, staff can be considered for working remotely, on a permanent or temporary basis by mutual agreement. Permanent remote work staff should indicate their primary working address in a remote working agreement. This contract will also outline their responsibilities as remote staff.

The Faculty Administration Department's special taskforce team implemented labeling to ensure social distancing throughout the Faculty building, by staff, students, patients and visitors in the Faculty when the MCO was lifted.

Social Distancing label in the lift

Social Distancing label at the entrance

Social Distancing label at the exit

Contact Tracing QR Code

5. ACADEMIC AFFAIRS

5.1 Students Readiness

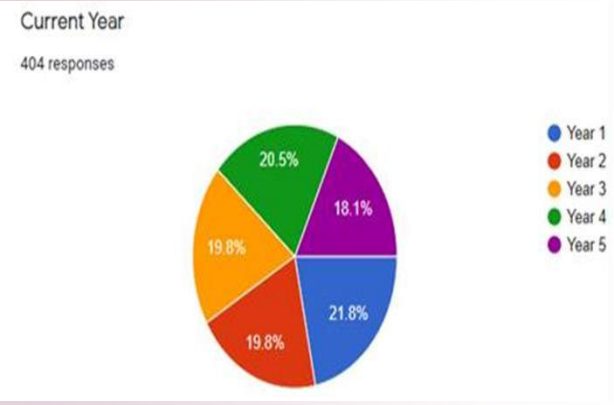
Soon after the outbreak, the Faculty responded very promptly to the pandemic by rearranging the academic calendar and organizing communication with students well in advance of the MCO being announced on 16 March 2020 (MCO was ordered from 18 March 2020).

All students had been informed a week before the closure of the dental school and they had made plans to return to their hometowns. During the MCO only one of the dental students was left at the residential college.

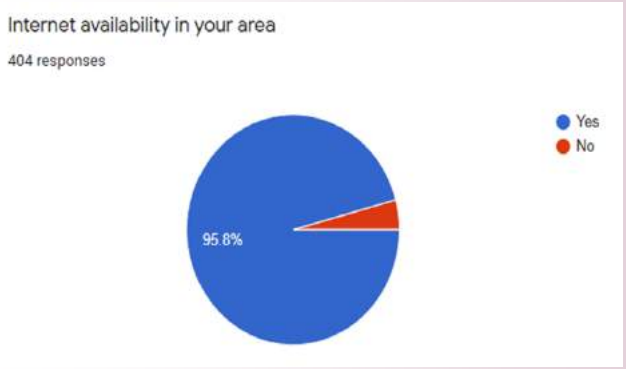
A short survey was carried out regarding students' preparedness to undergo online learning during the closure, in order to design the online learning to suit all the students, some of whom may be living in remote areas with limited access to internet connection and without a laptop.

The results of the survey are as shown below; the results aided the academic unit in planning for the teaching and learning to maintain the student learning time for classes. Clinical teaching sessions were suspended due to safety reasons. Online resources at the library were found to be a useful support system for students' enhanced learning during this time.

Online Learning Preparedness Survey Outcome



5.2 Teaching and Learning modes



Teaching and learning modes were designed to suit the situation, and the academic unit has taken the lead in preparing guidelines and infographics to encourage and motivate lecturers to implement creative teaching, using multiple online platforms to aid students at the receiving end.

These guidelines are in-line with recommendations of the Academic Affairs division UiTM (please refer attached guidelines Lampiran B). Semester examinations for continuous assessment were converted to online assignments delivered in multiple platforms, such as UFuture, email and google forms. Weekly reports, which were submitted first by an infographics, followed by google respond as a summary via a link shared by UiTM academic affair personnel.

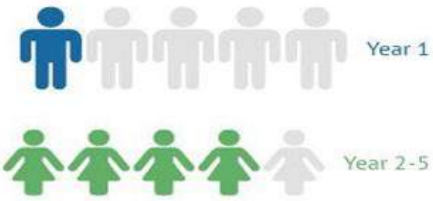
All of the didactic teaching for undergraduates was recommended to be delivered via an offline asynchronous mode and flipped learning, and for postgraduate coursework students, synchronous teaching was adopted by Faculty members. The Academic unit played the role of moderating the asynchronous learning to encourage active learning for students. Active participation and attendance in the discussion was taken into account and all centers for studies report their academic activities via google survey to the lecturers and students, and this is submitted to the deputy dean of academic affairs for compilation and summary to be reported to the Deputy Vice-Chancellor (Academic).

Viva examinations and research proposal defense for postgraduate students were conducted using online platforms as well and new SOPs were prepared to address these drastic changes. It was observed that throughout these changes, faculty members have shared their good practices and experiences as well as resources to be adopted by other Faculty members.

From the weekly report, the academic unit is taking steps to revise the open and distance learning (ODL) and assessment to sustain the scholarly productivity. All clinical and competency-based requirements for students have been re-evaluated to support the students during this situation and revision of curriculum requirements was carried out by the Deans' Council and endorsed by the Malaysian Dental Council.

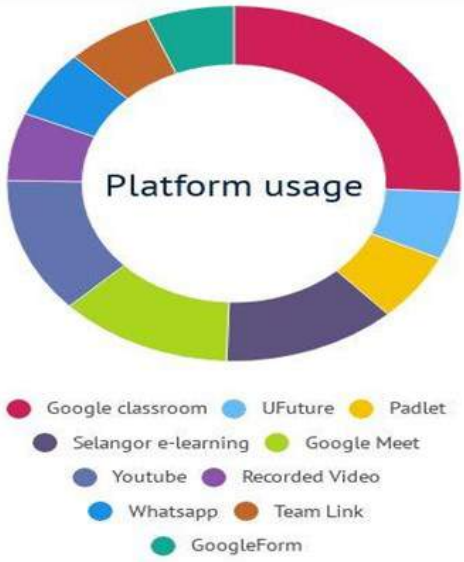
DATA ANALYSIS ODL

15th-21st April 2020

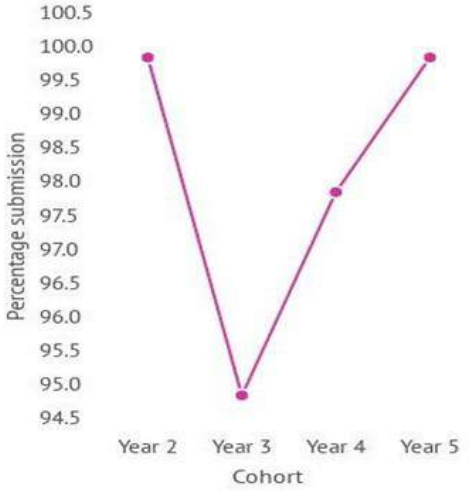


ODL started from the 15th of April 2020 involving Year 1-5 of BDS 240 students consisted of 414 Undergraduate students.
Activity: 11 Year 1-ODL classes and 11 of Year 2-5 online assessment.

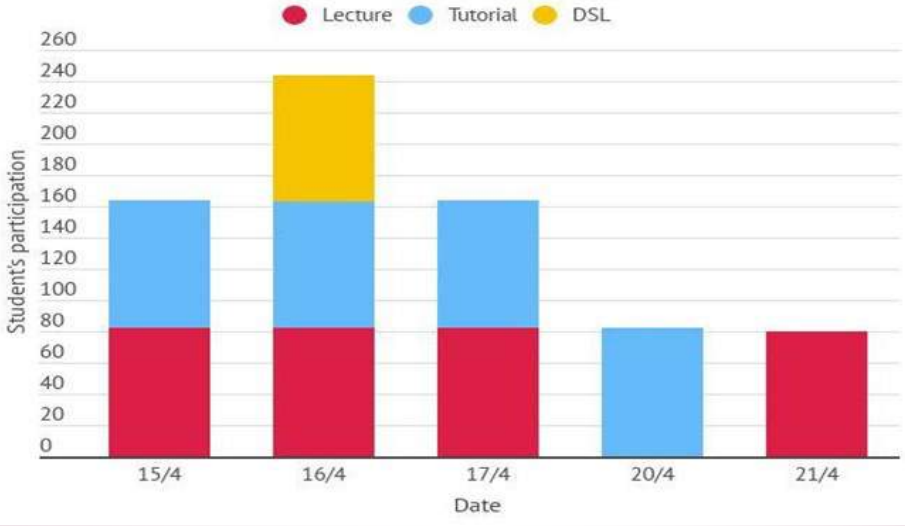
FACULTY OF DENTISTRY UITM



Online learning were delivered using multiple platforms both synchronous and asynchronously. Student's participation varies according to platform used for discussion and forum.



Year 2 to Year 5 are having online assignment to replace semester 2 continuous assessment. Year 2-4 were given 24 hours to submit their assignments while Year 5 have a week to complete their assignments of various codes. Platform used for assignments were UFuture, emails and Whatsapp.



Online Learning Guide for Student Faculty of Dentistry UiTM

UNIVERSITI TEKNOLOGI MARA

One of the most valuable skills you can have as an online student is effective time management. The better you manage your time, the easier it is to achieve your goals. Be motivated and set aside time to focus. Despite the flexibility in being an online student, it's important to have frequent engagement with your studies throughout the week. Provide plenty of time to space out your required readings, assignments, and online discussions.

01

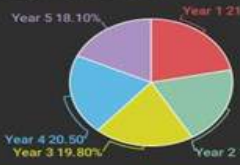
Step 01-Stay connected

Classess will be asynchronous and non-real time for Undergraduates and can be synchronous for Postgraduates. (refer to Online learning preparedness survey outcome for UG FPG). Asynchronous learning is to keep you safe.

02

Step 02-Keep to schedule

Stay abreast with the teaching materials and online assignments which will be uploaded according to schedule in time table/ assignment schedule.



03

Step 03-Use appropriate device

Online learning and assessment have been designed to be compatible with multiple devices, computers, handphones, ipad etc.

Step 04-Participate

Participate actively in the assigned platforms specified by lecturers for Q&A and discussion which will be available for a week.

04

- Familiarise with UFuture,
- google classroom,
- google meet,
- MOOC,
- e-learning via Whatsapp,
- e-learning via Telegram.

- Assignments will be given 24 hrs to a week duration for submission.
- Please read instructions from UFuture or email by Academic Unit.
- Assignment marks will be apart of Continuous Assessment.

Step 05-Stay engage

Revise and update your knowledge with latest publications. Contact us for any assistance in your learning. Clinical sessions will commence from the 4th of June 2020 according to planning. Focus will be given to clinical and practical teaching during this F2F sessions.

05

Step 6-Stay ahead

06

1. Assignment to replace continuous assessment for semester 2.
2. Questions uploaded in UFuture by RPs and/or emailed by Academic unit.
3. Assignment will be given according to schedule.
4. Assignment will be from 10 am on the scheduled day to 10 am the next day (24 hours) or due in a week (read instruction on cover page).
5. Assignment will be submitted via UFuture upload, email to RPs or via WhatsApp.
6. Assignment should be about 3 pages length with Ariel font 12 and 1.5 spacings unless instructed in a different format, i.e report etc.
7. Resources can be access via https://library.uitm.edu.my/

Stay agile & be vigilant

Personalised your learning and priority in the course. Tailor your learning according to your strengths and weaknesses. Try to complete the clinical competency as soon as possible to be able to sit for the Professional exam during the F2F teaching session. Keep us informed of your health status during MCO and F2F academic session. Continue to practice social distancing and good hand hygiene. Be safe!

Prepared by AP Dr Aida Nur Ashikin Abd Rahman, Academic Unit FPG UiTM for COVID-19 T&L

Online Learning & Assessment Guide Faculty of Dentistry UiTM

Academic Unit FPG, BHEA and CIDL

#1 Teaching & Learning

Aims to deliver SLT and complete their syllabus, and MCE and ECE before sitting for Professional exams end of August 2020.

Method-Online learning

1. From the 15th of April -3rd June 2020.
2. 4th of June, TnL will focus on clinical and practical.

- Familiarise with UiTM e-learning platforms, UFuture (was known as i-learning),
- google classroom,
- google meet,
- MOOC,
- Video power point/power point sharing via Whatsapp, Telegram.

Concept

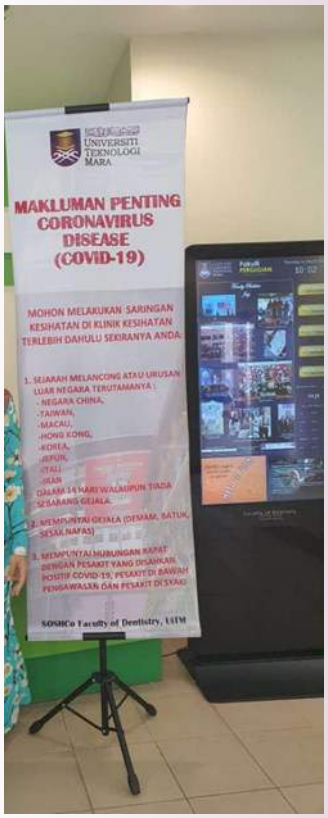
- Upload teaching materials according to the time table.
- Upload the material(s) before the scheduled class.
- Offer a simple option.
- Consider asynchronous learning.
- Leave the teaching materials and forum ACTIVE for a week (at least).
- Use your creativity and explore various platforms.
- Make it FUN!

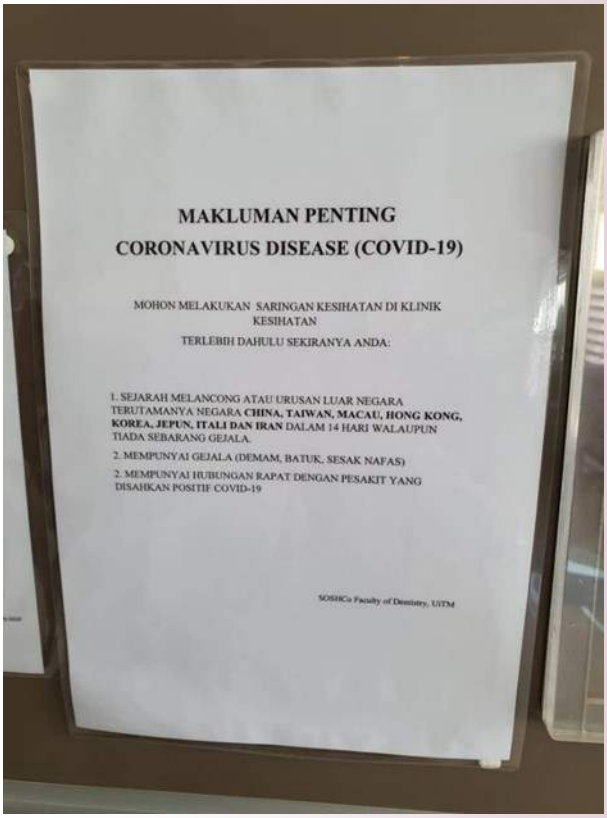
*Personalised learning according to the need of the cohort, constructivism and asynchronously minimise student's mobility and risk of infection.

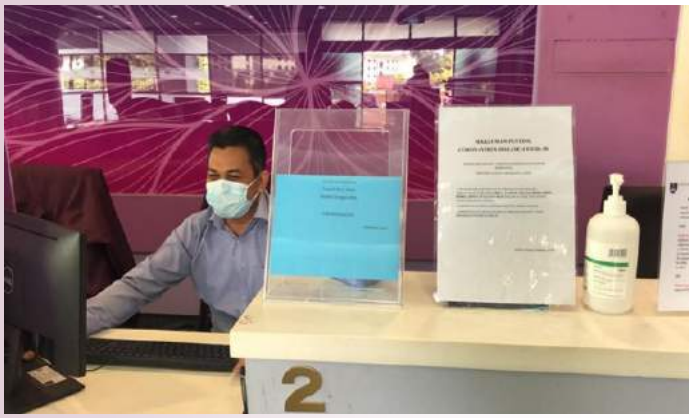
6. FRONTLINERS IN ACTION

At the beginning of the COVID-19 outbreak in Malaysia, in late February 2020, the SOSCHo team, and the clinical management committee, Faculty of Dentistry had an urgent meeting to set up standard operating procedures for clinical services, in order to protect staff, students, patients and any other people that come in and go out of the faculty.

For a start, the team concentrated on the main entrance and registration counter since it is the area of first encounter when people enter the faculty. A table with hand sanitizer and a notice about COVID-19 was placed at the main entrance. Besides that, our registration staff were required to wear masks and enquire regarding the patients' travel history and symptoms related to COVID-19.







In order to increase awareness regarding COVID-19 among staff, students, patients and the public, the team also put up banners and posters at several locations in the faculty building.

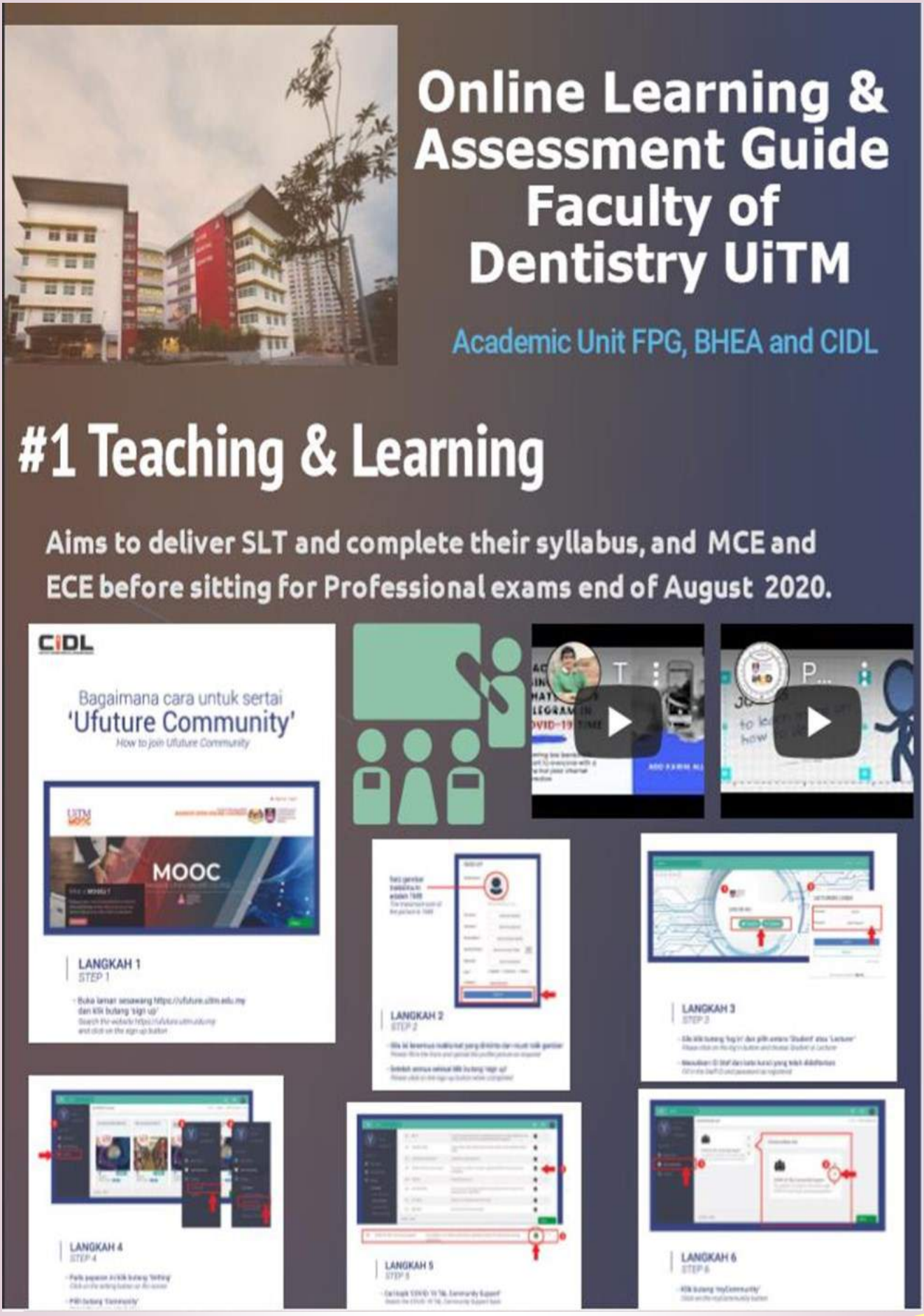
Later, during a spike in numbers of COVID-19 cases in Malaysia, the team took stricter precautionary measures, by setting up a triage counter at the main lobby entrance. At the triage counter, all individuals entering the building had their temperature taken and they filled out a questionnaire regarding COVID-19 exposure. Besides that, social distancing was also implemented at the patient waiting area.

Triage counter

Patient waiting area

Together with our medical colleagues, faculty members contributed in the Jawatankuasa Bencana Fakulti Perubatan dan Fakulti Pergigian, chaired by the director of Hospital UiTM, to lay out standard operating procedures to manage COVID-19 in the Sungai Buloh campus. A taskforce was set up to assist the committee. Our faculty members joined the taskforce team and were active in triage at the main campus gate. Visitors and those entering the Sg Buloh Campus are screened for COVID-19 related history. Their temperature is taken prior to entry.

Although operation of UiTM Dental Centre was temporarily ceased during the MCO, dental emergencies were attended to on a referral basis thorough the Emergency Cardiac Assessment Unit (ECAU) department, Hospital UiTM. Our dental officers, dental assistants and oral & maxillofacial surgeons and Paediatric dental specialists are on standby on a rotational basis.


Online Learning & Assessment Guide Faculty of Dentistry UiTM
Academic Unit FPG, BHEA and CIDL
#1 Teaching & Learning
Aims to deliver SLT and complete their syllabus, and MCE and ECE before sitting for Professional exams end of August 2020.
CIDL
Bagaimana cara untuk sertai 'Ufuture Community'
How to join Ufuture Community
MOOC
LANGKAH 1
STEP 1
LANGKAH 2
STEP 2
LANGKAH 3
STEP 3
LANGKAH 4
STEP 4
LANGKAH 5
STEP 5
LANGKAH 6
STEP 6

Method-Online learning

1. From the 15th of April -3rd June 2020.
2. 4th of June, TnL will focus on clinical and practical.

- Familiarise with UiTM e-learning platforms, UFuture (was known as i-learning),
- google classroom,
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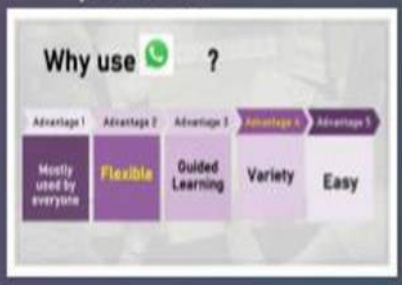
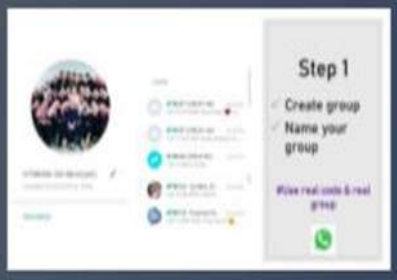
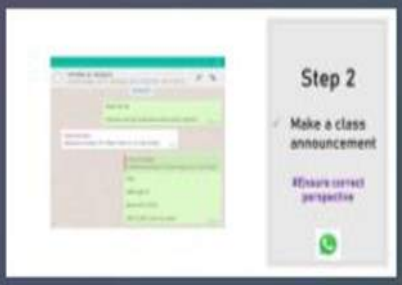
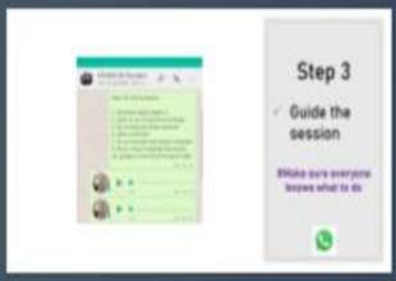
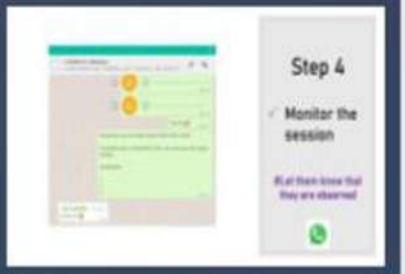
- Video power point/power point sharing via Whatsapp, Telegram.

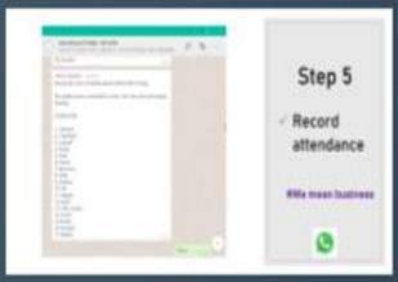


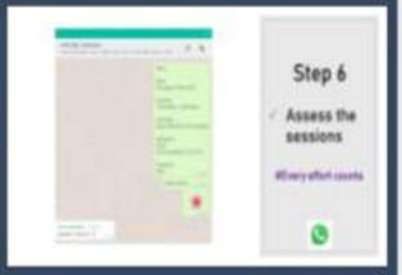


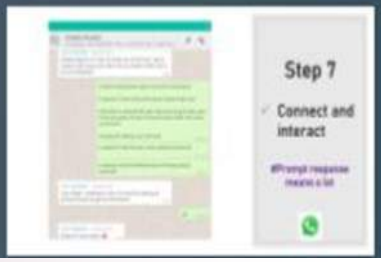












Concept

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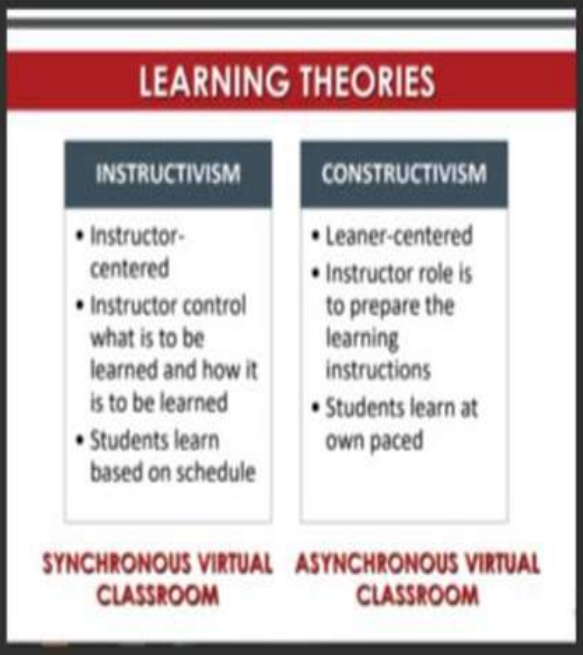
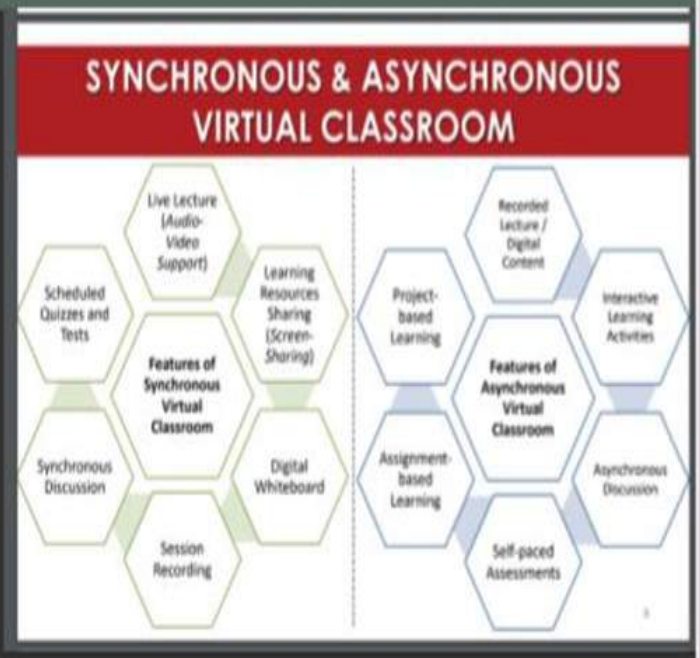
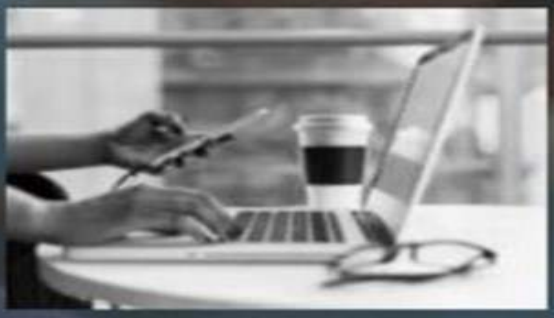




*Personalised learning according to the need of the cohort, constructivism and asynchronously minimise student's mobility and risk of infection.

#2 Online Assessment



0 1 2 3 4 5 6 7 8 9 10

FORWARD THINKING ASSESSMENT

- Identifying the Intended Learning Outcome & Purpose of Assessment
- Provide Efficient and Effective Feedback on Instruction Design
- Values in Assessment
- Use Variety of Assessment
- Use Contextual Assessment
- Personalize Learning & Assessment
- Provide Rubric & Performance Indicator

DESIGNING LESSON PLAN FOR STUDENT CENTERED LEARNING

A QUICK GUIDELINES FOR EDUCATORS

- PLANNING & PREPARING FOR LESSON PLAN & UNITS
- PLANNING & PREPARING FOR USE OF RESOURCES & TECHNOLOGY
- PROVIDING INSTRUCTIONAL GUIDE & SUPPORT
- SPECIFICATIONS OF LESSON PLAN

e-assessment tools

Self-Based Assessment

- GoogleForm,
- Quizizz,
- Kahoot,
- Socrative,
- PollEverywhere,
- Formative,
- Flipgrid,
- Padlet,
- AnchorFM,
- Podcast,
- GoogleClassroom .

Group-based assessment

- Padlet,
- GoogleClassroom,
- GoogleDocs,
- GoogleSheet,
- GoogleSlide,
- Genially,
- Nearpod,
- Mentimeter,
- Flipgrid

Designing Assessment Instruction

This is a tips in designing assessment instruction. The purpose of assessment instruction is to ensure the direction, respond, time and feedback is taken as a process of evaluation.

Situation
Describe the general context of the activity and the specific situation that you were in.

STEP 01

STEP 02

Tasks
Identify the tasks that students needed to accomplish

Action & Activity
Explain the 'What', 'How', 'Why' and 'When' by considering the SLT/BPT.

STEP 03

STEP 04

Result
The successful impact of the outcome and most importantly "WHAT STUDENTS LEARN?"

Rubric & Reflection
Use rubric as a part of the intervention process and diagnose the results.

STEP 05

CIDL CG ALTERNATIVE ASSESSMENT & PORTFOLIO

Easy Step Developing a Rubric

HERE ARE 5 STEPS TO DEVELOP YOUR COURSE RUBRIC

STEP 1 : DEFINE PURPOSE OF LEARNING TASKS

Look course learning outcome and reflect the purpose of assessment. Most importantly rubric give students a direction to achieve the learning outcome.

STEP 2 : CHOOSE RUBRIC TYPE

There are two type of rubric 1) analytic and 2) holistic. Understand the anatomy of rubric and its differentation.

STEP 3 : DEFINE THE CRITERIA

Set the criteria for the desire performance, evaluation score, rating and descriptor. It must be clear and well stated.

STEP 4 : DESIGN RATING SCALE

Use standard measurement (corresponding weight or scores)

STEP 5 : WRITE PERFORMANCE DESCRIPTORS

The performance descriptors is able to differentiate one to another. The descriptors provide specific information for intervention and attainment

CIDL CG ALTERNATIVE ASSESSMENT & PORTFOLIO

Method-Online assessment

1. Questions uploaded in UFuture and emailed to students.
2. Assignment will be according to schedule.
3. Assignment will be from 10 am on the scheduled day to 10 am the next day (24 hours).
4. Assignment will be submitted via UFuture upload, email to RPs or via Whatsapp.
5. Assignment to be marked according to rubrics.
6. Students with limited internet connectivity, are allowed to write their assignment and send their write up or photos of their assignment via Whatsapp.

uFuture Platform

CIDL MAR 26, 2020 06:19AM

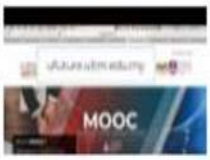
Join Community ufuture

How To Join Ufuture (TUTORIAL)
PDF document
PADLET DRIVE

CIDL MAR 23, 2020 07:24AM

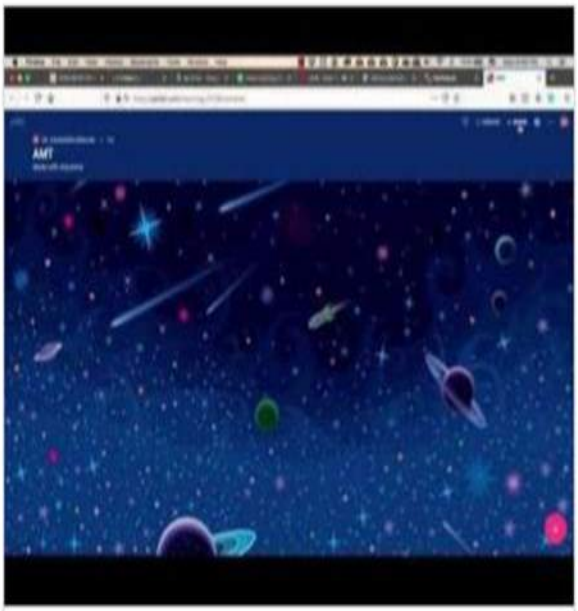
Using ufutre platform

UFUTURE VIDEO TUTORIAL
Made with a dash of wit
PADLET



CIDL MAR 23, 2020 07:20AM

Embed Padlet into ufuture Platform



Embed Padlet into ufuture platform
by DR. ZAINUDDIN IBRAHIM
YOUTUBE

CIDL MAR 23, 2020 07:18AM

Join Community into ufuture

How to Join Community Covid-19 UiTM
by DR. ZAINUDDIN IBRAHIM
YOUTUBE

Setup Live Streaming Google Meet

InfoICT RCard_LiveStreamGoogleMeet
PDF document
PADLET DRIVE

CIDL MAR 30, 2020 10:14AM

Google Meet

The Experience

FKM GMeet Class 25032020.mp4
Dropbox is a free service that lets you bring your photos, docs, and videos anywhere and share them easily. Never email yourself a file again!
DROPBOX

CIDL MAR 23, 2020 07:32AM

TUTORIAL MENGGUNAKAN GOOGLE MEET
PDF document
PADLET DRIVE

Google Classroom

ANONYMOUS APR 01, 2020 05:15AM

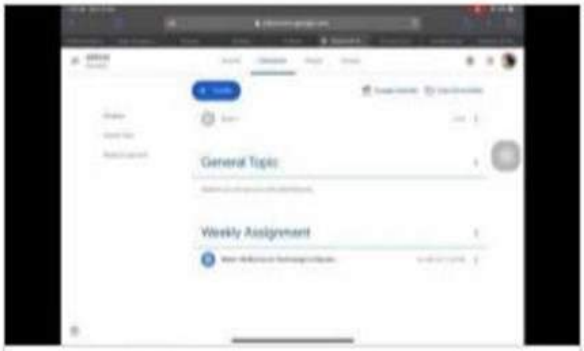
Interactive Learning - Google Classroom

This video shows an interactive session (38 minutes) for all to learn together;
It highlights one of alternative platforms for LMS (Learning Management System).

Classroom FKM 27032020.mp4
GOOGLE DRIVE

CIDL MAR 23, 2020 07:29AM

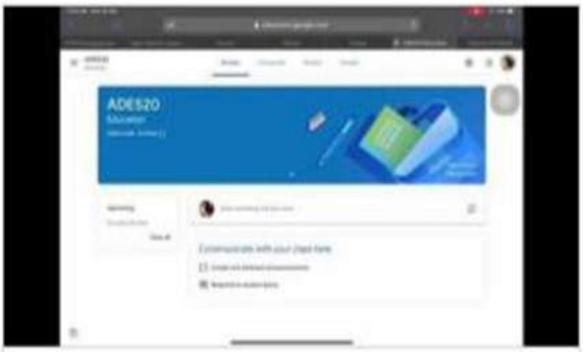
Quiz



Google Classroom - Part 3 Create Quiz Assignment
by Prof Madya Ts Dr Syamsul Nor Azlan Mohamad
YOUTUBE

CIDL MAR 23, 2020 07:29AM

Create Topic & Assignment



Google Classroom - Part 2 Create Topic and Assignment
by Prof Madya Ts Dr Syamsul Nor Azlan Mohamad
YOUTUBE

CIDL MAR 23, 2020 07:28AM

Create Class

Google Classroom - Part 1 Create Class
by Prof Madya Ts Dr Syamsul Nor Azlan Mohamad
YOUTUBE

Convert Your Slide Using Jing
by DR. ZAINUDDIN IBRAHIM
YOUTUBE

Screen Recording

LINA KHALIDA RIDHUWAN APR 01, 2020 10:06AM

Screen Recording Materials

1l3Bzt7nwkhLUY5CVm0xvmR3hj_RGc-cA
DRIVE.GOOGLE.COM

ANONYMOUS MAR 29, 2020 05:22PM

Tutorial Screencast-o-matic

Tutorial Menggunakan Screencast-o-matic
PDF document
PADLET DRIVE

CIDL MAR 24, 2020 03:56PM

Using Jing

CIDL MAR 31, 2020 05:05AM

Camtasia

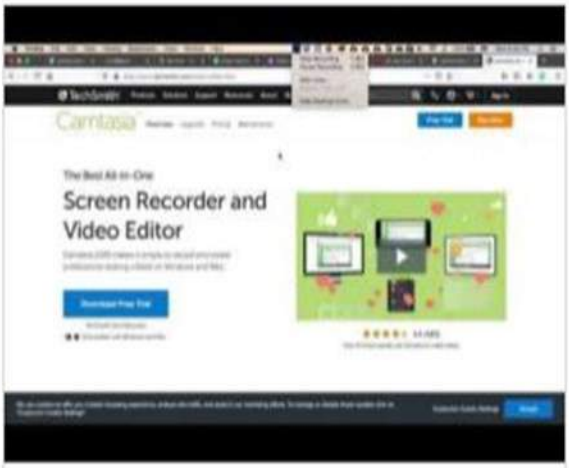
Get Started with Camtasia [Webinar]
by TechSmith
YOUTUBE

Versi percuma hanya diberi 7 hari percubaan sahaja. Syarikat Techsmith juga menyediakan free screen recorder seperti Jing
– CIDL

salam. uitm ada provide camtasia ke.. macmana nk dptkan.
– ANONYMOUS

CIDL MAR 24, 2020 11:04AM

Camtasia Studio



Record Your Screen Using Camtasia
by DR. ZAINUDDIN IBRAHIM

YOUTUBE

Untuk record screen bagi Windows, boleh juga tekan Windows + G. Ini built in dalam Windows. – **FADZLIN**

Salam, boleh cuba OpenShot Video Editor. – **FADZLIN**

Salam. Free download software apa yang kita boleh gunakan dengan mudah utk edit video yg tlh kita hasilkan? – **ANONYMOUS**

Versi percuma hanya diberi 7 hari percubaan sahaja. Syarikat Techsmith juga menyediakan free screen recorder seperti Jing. – **CIDL**

salam dr, mcmana saya nak dptkan software camtasia.. – **ANONYMOUS**

CIDL MAR 28, 2020 03:16AM

Infographic

CISCOWebexPdf
PDF document

PADLET DRIVE

Salam saya lampirkan caranya. Sila rujuk post diatas. Terima kasih – **CIDL**

Maaf, saya masih tak jumpa macam mana nak activate account menerusi bsu. Kalau boleh, mohon tunjuk ajar step by step. Terima kasih. – **DR NOR ROSLINA ROSLI**

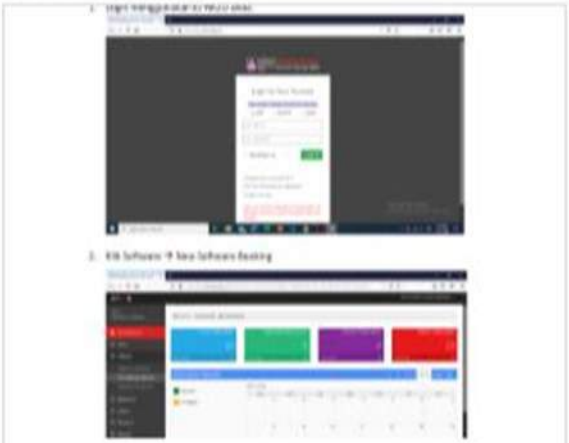
Salam Dr Nor Roslina, You need to activate your account first. Pls apply through this link https://bsu.uitm.edu.myVideo tutorialhttps://www.youtube.com/watch?v=60lX_A3tnqo – **ANONYMOUS**

Can somebody teach me how to request webex from PPII bsu website? I couldnt find Webex in their list of softwares. – **DR NOR ROSLINA ROSLI**

Use Cisco Webex

CIDL MAR 31, 2020 09:17AM

Apply Cisco Webex Account

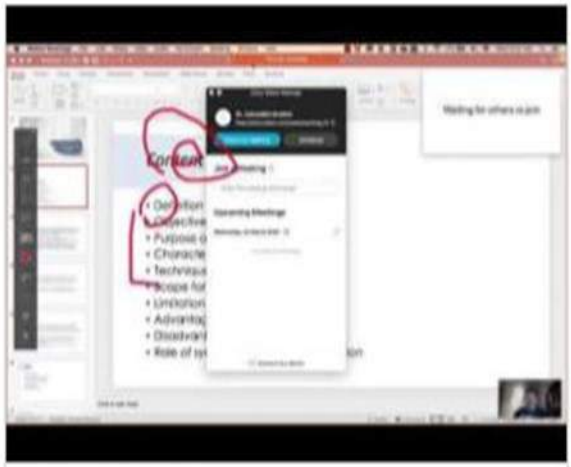


InfoICT RCard_Permohonan Cisco Webex_BSU
PDF document

PADLET DRIVE

CIDL MAR 28, 2020 03:06AM

Using CISCO WEBEX MEETING



Cisco Webex Meeting
by DR. ZAINUDDIN IBRAHIM

YOUTUBE

Yes, Google Meet allow maximum of 250 participants and 100k viewer. We already requested to admin for that. – CIDL

Thanks. I realised Google Meet can allow maximum of 250 participants only. If webex can allow more that 250, then it can be used for training sessions in UiTM since our staff number is massive. – DR NOR ROSLINA ROSLI

UiTM Online Application

CIDL MAR 25, 2020 03:12AM

Aplikasi Atas Talian
Pejabat Pembangunan Infrastruktur dan Infostruktur

UITM

Online Learning

LINA KHALIDA RIDHUWAN APR 03, 2020 09:07AM

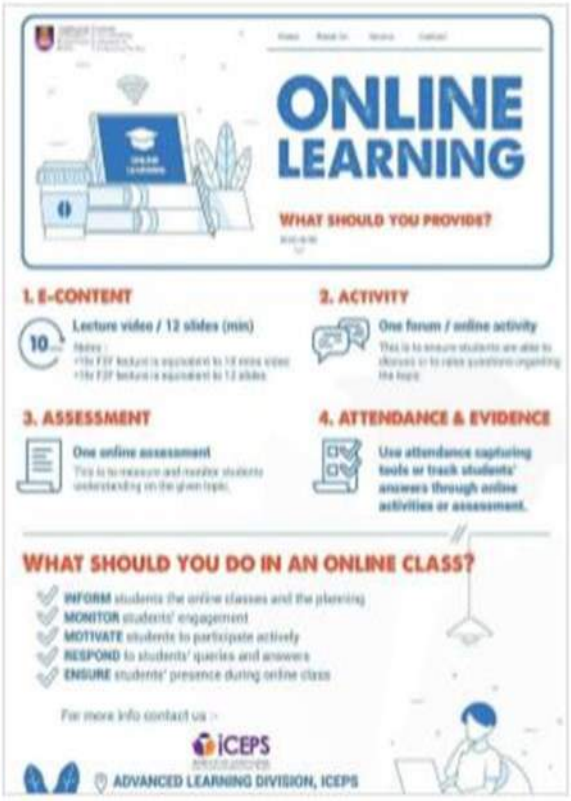
Online Pedagogy

Online Pedagogy
PDF document

PADLET DRIVE

CIDL MAR 24, 2020 03:26PM

Online Learning



Instructional

ANONYMOUS MAR 25, 2020 01:17AM

Simple SIM (Self Instructional Material)

Develop SIM to aid student learning. Here's an example

Research methods for Primary Education
PDF document

PADLET DRIVE

CIDL MAR 24, 2020 03:28PM

Instructional Resource

Assessment

LINA KHALIDA RIDHUWAN APR 03, 2020 09:07AM

Alternative Assessment @ UiTM 2020

Assessment@UiTM2020
PDF document
PADLET DRIVE

LINA KHALIDA RIDHUWAN APR 02, 2020 09:03AM

Alternative Assestment & Portfolio

Google Drive
Get access to files anywhere through secure cloud storage and file backup for your photos, videos, files and more with Google Drive.
GOOGLE DRIVE

YAUMEE HAYATI HJ MOHAMED YUSOF MAR 27, 2020 05:12AM

Typing

This is for those who are looking apps for measuring typing skills among students.Hope this will help.

How to Use Typing.com
by Mikail Alici
YOUTUBE

CIDL MAR 26, 2020 03:24AM

Pentaksiran & Penilaian

PENTAKSIRAN & PENILAIAN PEMBELAJARAN (5).pdf.pdf
PDF document
PADLET DRIVE

E-Learning

CIDL MAR 27, 2020 02:30AM

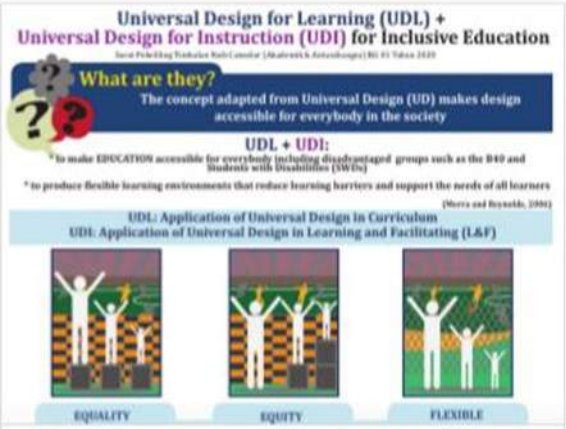
Online Learning

E-learning Initiatives by ICEPS
Preparation for Life
PADLET

Universal Design Learning

CIDL MAR 30, 2020 05:56AM

UDL



Infographics UDL UDI_8th
PDF document
PADLET DRIVE

Online Training Video

CIDL APR 01, 2020 08:05AM

Upgrade Your Slide Slot

30 March 2020

pgm-oxbj-ori (2020-03-30 at 21:00 GMT-7)
by ERNY ARNIZA AHMAD
GOOGLE DRIVE

Thanks for sharing! More to learn – MS FRANNELYA

CIDL APR 01, 2020 08:05AM

Social Media Slot

30 March 2020

pgm-oxbj-ori (2020-03-30 at 20:10 GMT-7)
by ERNY ARNIZA AHMAD
GOOGLE DRIVE

CIDL APR 01, 2020 07:58AM

Live Training Support Recorded Video

29 March 2020

The Introduction
10.00am

pgm-oxbj-ori (2020-03-29 at 19:01 GMT-7)
by ERNY ARNIZA AHMAD
GOOGLE DRIVE

Will update soon – CIDL

w'salam, telah direkodkan dan akan upload secepat mungkin – CIDL

Assalamualaikum, hopefully online training yang 31/3 & 1/4 juga dapat direkodkan.Ramai tak dpt join live sbb dah full.Terima kasih. – ANONYMOUS

I think the date is not 30 April 2020. Supposed to be March. – DR NOR ROSLINA ROSLI

Virtual Classroom Design

LINA KHALIDA RIDHUWAN APR 03, 2020 02:50AM

Virtual Classroom Design

Virtual Classroom Design_v1
PDF document
PADLET DRIVE

By:

Prof. Dato' Dr. Mohamed Ibrahim Bin Abu Hasaan

Faculty of Dentistry

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