

Volume 9, Edition 3
Contents

Foreword

Page 1

Online Learning - Is Indonesia Ready Yet?

Page 2

Advertisements by German Universities

- TUM Campus Heilbronn from Technical University of Munich
- Institute for Law and Finance — Goethe Universität Frankfurt am Main

Page 7

Event: Falling Walls Lab Jakarta 2020

Page 8

Online Learning in Students Perspective

Page 9

Advertisements by German Universities

- Pforzheim University
- ESB Business School Reutlingen University

Page 9

Emergency Ventilator ITS (E-VITS)
written by: Dr. rer.nat Aulia Nasution

Page 11

Scholarship Now Open

Page 13



Foreword

Dear readers,

Due to COVID-19, the year 2020 has brought fundamental changes to our teaching and learning processes. Within days, our system of face-to-face learning changed to online learning; universities closed their doors and communication switched to electronic mode. University teachers as well as their students were surprised by these sudden changes and had to jump in at the deep end. Of course, some of them had had minor or major experiences with MOOCs (Massive Open Online Courses) before or had used Moodle or other electronic platforms at their university. Now, real-time video teaching, via conferencing software such as Microsoft Teams or Zoom and recorded video lectures, has become part of the everyday-life of students and teachers. This phenomenon has not occurred everywhere: It is dependent on the local internet infrastructure and the possession of the necessary gadgets (computers, smartphones) and, last but not least, on the cost of data packages.

University students and teachers in many regions have had serious problems in coping with the new situation. In many cases, WhatsApp and SMS have replaced more sophisticated software, and sometimes even the use of these resources has remained limited or proved to be impossible.

Nevertheless, in many cases, the universities have shown creativity and a huge spirit of innovation, and excellent ideas were developed to overcome the difficulties. By designing useful and much needed products such as ventilators and personal protective equipment (PPE) and by providing relevant science-based information on the ongoing pandemic, the universities have shown their commitment to the public good and the importance of science for society.

We wanted to get more information about how the Indonesian universities have reacted to the situation and how they have tackled the pandemic-related obstacles and problems, so we contacted some university teachers and students for first-hand information. Please read the results of our interviews below! Any comments and suggestions regarding the topic are, as always, welcome, as well as statements concerning your personal experiences as a university student or teacher and your opinion about the chances and challenges of online teaching and learning.

Best wishes, and stay safe and healthy,

Thomas Zettler
Director of DAAD Regional Office Jakarta

Online Learning - Is Indonesia Ready Yet?



Online learning activities that has been conducting in different universities in Indonesia.

The year 2020 has brought a lot of surprises for all of us. The ongoing COVID-19 pandemic has forced all education institutions to changed their teaching and learning processes.

Obviously, stopping all learning activities in universities until the pandemic is over is not an option. Therefore, the universities have had to adapt by bringing their activities online. Online teaching and learning have become the answer to allow the universities to continue teaching and learning activities as well as to prevent the further spread of the SARS-CoV-2 virus which has caused the COVID-19 pandemic.

Some of the higher education institutions in Indonesia have made use of online learning platforms while others are, for the first-time, using tools such as Zoom, Webex, Teams or even Whatsapp for teaching and learning activities.

We wanted to get more insight into how the education institutions in Indonesia have implemented online learning, and which problems they have faced while doing it. We took the chance to interview 3 DAAD alumni who are currently working in higher education institutions. We interviewed:

- Dr.rer.nat. Edwin Setiawan, DAAD Alumnus and Lecturer at Biology Department, Faculty of Science and Data Analytics (SCIENTICS) Institut Teknologi Sepuluh Nopember Surabaya. DAAD Indonesia Research Ambassador in Surabaya.
- Prof. Marianti Manggau, DAAD Alumna and Vice Dean for Academic, Research and Innovation Faculty of Pharmacy Universitas Hassanudin Makassar.
- Dr.-phil. Arinafril, DAAD Scholarship Holder 1992 – 1997 at Zentrum für Umweltforschung, Institut für Biogeographie, Universität des Saarlandes, Saarbrücken, Lecturer of Faculty of Agriculture, Sriwijaya University, Indonesia / Visiting Lecturer of 1) Truong Dai hoc Nong Lam, Thai Nguyen, Vietnam, 2) Dai hoc Thai Nguyen, Khoa Quoc Te, Vietnam.

Online Learning - Is Indonesia Ready Yet?

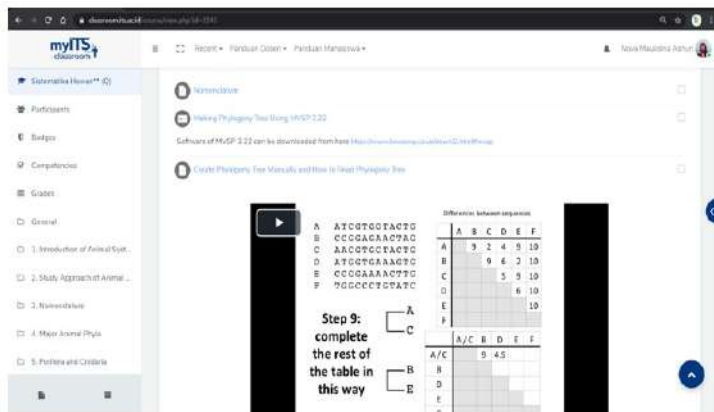
The COVID-19 pandemic that is currently happening in the world has forced all education institutions to shift all the activities online in such a short period. Could you share with us how your institution has prepared for it?

Dr.rer.nat. Edwin Setiawan (ES): Our institution has been preparing and has encouraged teachers and students to implement online or *daring* systems since 2010. Extensively after 2015, we have developed a comprehensive system that accommodates the learning process through *daring* or online systems. In the beginning the system was known as *share/ITS* which was until recently integrated into Single Sign Operation System (SSO) based on the newest Moodle version 3.8, known as *myITS Classroom*. Furthermore, this system accommodates several functions of ITS as a high-tech institution that possesses a high-quality integrated information management system. Several functions are embedded into this system like Zoom, Wiriz, Math, Teams Meeting and Office 365. Moreover, since this pandemic and in order to support the process of national and international accreditation, this system is being implemented more intensively and also staff are awarded prize money or incentives if they can perform the best and most online education through this e-learning system.

Prof. Marianti Manggau (MM): Universitas Hasanuddin, as one of the largest universities in Indonesia, especially the Eastern part of Indonesia, has given tremendous attention to

matters related to the institution's activities during this COVID-19 pandemic. Since we had to shift all of our activities online, Universitas Hasanuddin has committed to ensuring that all the academic staff (and students) are capable of using the online-based system provided by the university. While doing this, Universitas Hasanuddin has been collaborating with the COVID-19 Task Force of Universitas Hasanuddin, to provide the best policy or system that is most suitable as this pandemic develops.

Dr.-phil. Arinafril (AF): The Rector of Sriwijaya University issued Rector Instruction No. 0122/UN9/SB3.BUK.HT/2020 dated March 19, 2020, to prevent the spread of SARS-CoV-2 Virus which causes COVID-19 Disease at the Sriwijaya University Campuses in Indralaya and Palembang. Mostly, the university restricts all activities, of academics and non-academics, on campus. All activities have to be conducted online or virtually. Online learning is a new and relatively novel concept at our university. It will take time to apply for us as it has not been done before. Knowing this, the university conducted training for all university members to operate some applications or software which enable us to carry out online learning.



myITS Classroom interface showing a lesson slide with a DNA sequence and a table.

DNA sequence:

```

A ATCGTGCCTACTG
B CCGAGACACTAC
C AACCTGCCTACTG
D ATCGTGAAGTGC
E CCGGAAACCTGC
F TGGCCCTCTATC
    
```

Table:

	A	B	C	D	E	F
A	3	2	4	5	10	
B		9	6	2	10	
C			5	5	10	
D				6	10	
E					10	
F						10

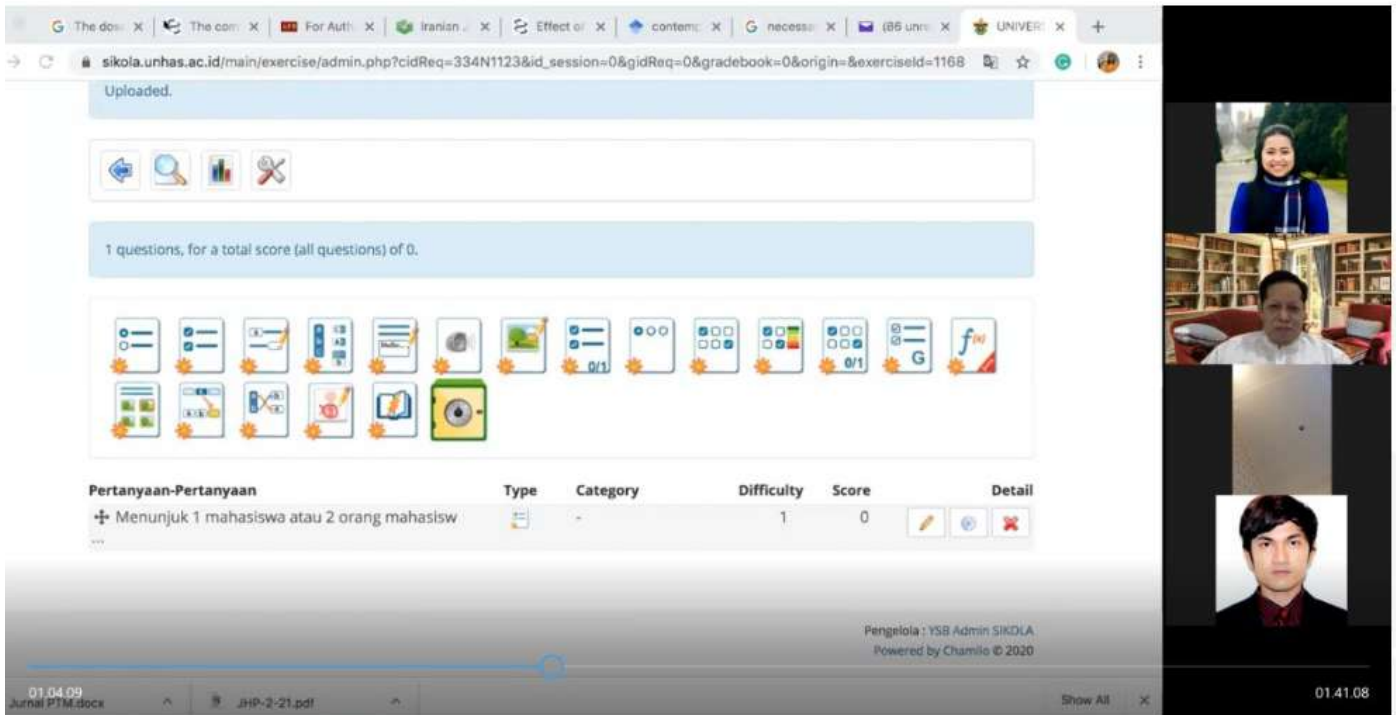
Step 9: complete the rest of the table in this way



Asynchronous

Synchronous

Online Learning - Is Indonesia Ready Yet?



The screenshot shows the SIKOLA LMS interface. At the top, there's a navigation bar with various icons. Below it, a message says "Uploaded." followed by a toolbar with icons for navigation and editing. A status bar indicates "1 questions, for a total score (all questions) of 0." Below this is a grid of question icons. At the bottom, a table displays question details:

Pertanyaan-Pertanyaan	Type	Category	Difficulty	Score	Detail
Menunjuk 1 mahasiswa atau 2 orang mahasisw			1	0	

At the bottom right of the interface, it says "Pengelola : YSB Admin SIKOLA" and "Powered by Chamilo © 2020". On the right side, a video conference window shows three participants in a grid layout.

SIKOLA, Learning Management System (LMS) used in Universitas Hassanudin Makassar.
Photo: Prof. Marianti Manggau.

How is online learning conducted in your university during the COVID-19 pandemic?

ES: It has been described above that we have already implemented a sophisticated and comprehensive online teaching system via *myITS Classroom*. Students and lecturers can intensively contact each other via this system and they can conduct lectures, assignments and etc synchronously or asynchronously. If there are some obstacles in the system, the IT management and staff are always on standby and help to accommodate and monitor this system intensively through remote systems as well.

MM: Universitas Hasanuddin has been equipped with a Learning Management System (LMS) since before the pandemic started. We have developed a further updated version of this LMS, called SIKOLA. Using SIKOLA, online learning can be conducted in a more efficient and effective way. Features such as video conferencing and exams are also available in this system. The online learning in Universitas Hasanuddin is carried out mostly using this system with the aid of other online-based systems, if necessary. All the monitoring and evaluation is also carried out online, to ensure that the

learning activities still proceed according to plan. In order to support student connections, Universitas Hasanuddin has collaborated with several internet service providers to provide free access to the online learning system (Learning Management System (LMS), sikola.unhas.ac.id) and video conference service (siruntu.unhas.ac.id) for registered students.

AF: Shifting academic activities from classrooms to online classes, is an adjustment. The rector has directed all faculty deans to temporarily halt all face-to-face academic activities such as lectures, laboratory and field work, seminars and student extracurricular activities, such as English club, sports, cultural and communal services. The rector has ordered deans to implement policies which allow academics, technicians, and students, to conduct learning activities from home. Those policies have been implemented to prioritize the safety and health of all university members and to take measurable actions to avoid spreading the SARS-CoV-2 virus.

Online Learning - Is Indonesia Ready Yet?

In your opinion, as an educator, what are the opportunities and challenges of Online Learning?

ES: The opportunities include having flexible and efficient time management and encouragement to be creative as educators. Our government is encouraging us to implement 4.0 industrialization in the education system. However, opportunities are sometimes hampered; for instance, by the IT system. In addition, students and staff possess a heterogeneous skill set; their IT skills have to be upgraded to understand the online new system. Furthermore, IT infrastructure is also insufficiently developed; some of the remote areas in this province or city can not be reached by sustainable IT communication systems. Moreover, better IT systems are expensive. Likewise, some experiment work, or lab work somehow requires extra effort to be visualized or taught through the online system since assessment of these skills can not be easily transferred into online education.

MM: As an educator, I think that the greatest benefit of online learning can be seen during a situation like this. Without the help of digital and virtual systems, we would be unable to keep the learning process going as usual during a pandemic like this. Online learning also helps us to be more aware of technology and it shows that learning can be done literally everywhere. Integrated learning such as the international guest lecture series held periodically in our faculty, managed effectively in terms of cost of travel and accommodation. However, challenges also came with this, such as lack of human contact, lack of focus and boredom. Additionally, some of the students who come from lower socioeconomic status families, are finding it really hard to adapt with this situation in which they must have their own computer (or gadget) and an internet connection to join a course or seminar.

AF: The COVID-19 pandemic affects all activities, including university education. The pandemic demands university education changes from the face-to-face learning process to virtual learning.

This pandemic brings opportunities for me as an educator where I can contribute to improve strategic planning and models in teaching methods. Planning and teaching models will create a vision statement which may enlighten the visions of the students. Above of all, creating a supportive online learning environment is strongly required for the engagement of lecturers and students to enable more positive and collaborative learning environments for me as an educator and my students.

COVID-19 affects teaching and learning at all universities; more than half of academic activities have been stopped and replaced by online learning. So, this condition brings opportunities for university members to learn from these abnormal conditions and to prepare new more flexible and alternative learning methods, to learn and explore through blended and hybrid learning, and to mix synchronous learning with asynchronous learning. This opportunity will lead to improvement of the university staffs' capacity.

COVID-19 also provides crisis management skills; it allows us to prepare better for similar cases in the future. This pandemic will increase university resilience to face unforeseen crises.

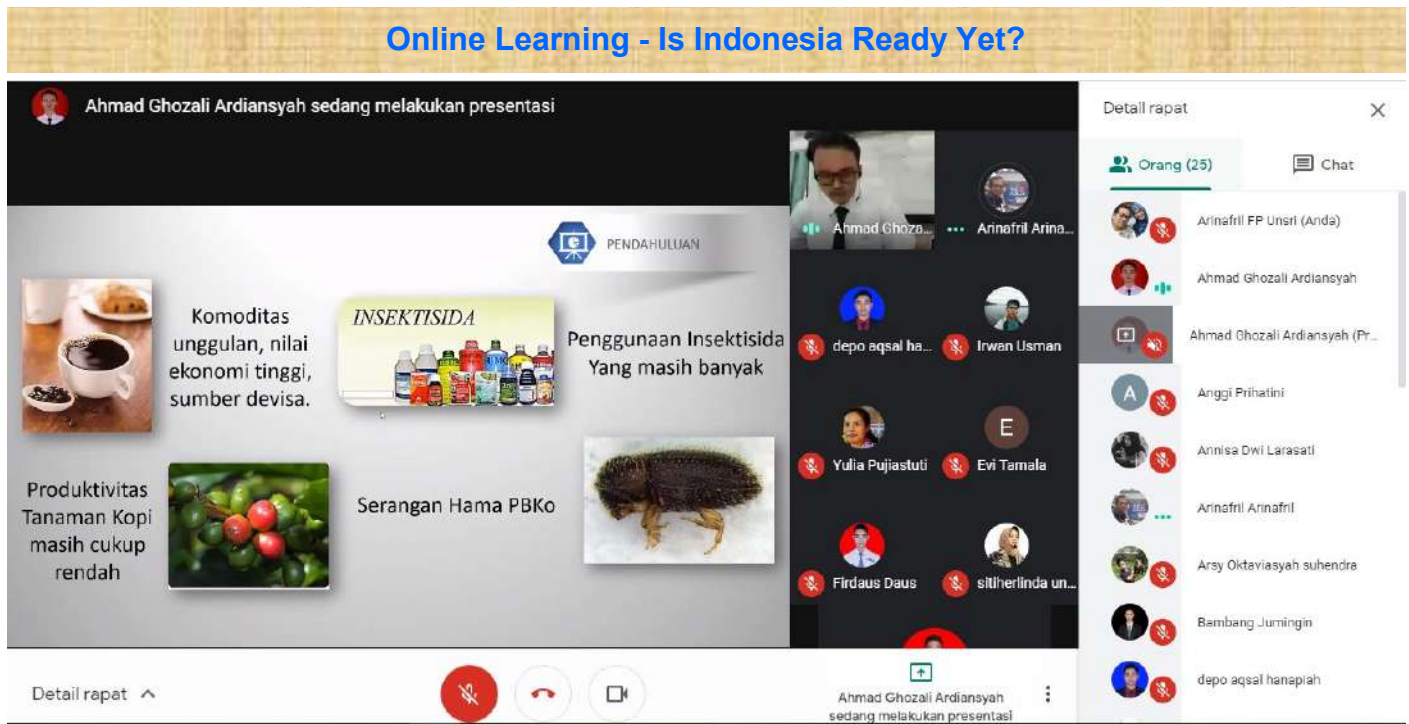
Students also have the opportunity to expand their horizons in learning. It is expected that online learning will increase time management skills. Some students have benefited from this situation where their experiences will generate learning assessment by themselves. Another opportunity for students is that they can learn strong self-motivation and discipline skills in an online environment rather than traditional classrooms.

However, we face many significant challenges, not only academicians, administration staff, and technicians, but also students. All should implement an online learning process which may accelerate Education 4.0 and increase the use of Information Technology in online learning.

Another challenge is that not all lecturers are able to prepare learning materials online which can be used to improve the quality of education.. The traditional classroom is much easier to prepare for with its use of face-to-face methods. Online learning might be less effective in transferring knowledge as it is difficult to give explanations to students in subjects in which they are lectured.

Laboratory and field work for some subjects which need practical skills can not be properly replaced through online learning; this presents a big challenge.

In Indonesia, the use of the internet is not free. This is an obstacle where unanticipated costs in time and money will become another big challenge.



Online learning at Universitas Sriwijaya.
Photo: Dr.-phil. Arinafril

In your opinion, what needs to be improved to create an excellent online learning environment?

ES: A lot of things. But in my opinion, there are two major things. The first one is supportive infrastructure or IT environment and the second one is skills and creativity on a computer or IT ability of students, staff, and every person in that e-Learning system. However, willingness to implement the e learning process is also important.

MM: The most important thing is the creativity of the educator in providing the learning material. Also, it is necessary to use a system with a friendly user-interface so that both the lecturers and students will not find it difficult to use the system. The university must also provide a good monitoring system throughout the online learning process.

AF: Many academics should upgrade their skills in applying distance learning instruments which are blended and entirely online, because they have never used the equipment for online learning systems. Therefore, support is needed to improve their skills to use this new system. Academics and students can improve teaching and learning activities with virtual implementation.

The online learning environment is based on state-of-the-art technology where finances are needed. Sufficient funds, appropriate budgets and potential sources are needed to make online learning successful. Last but not least, not every lecturer and not every student is happy with online learning and are well suited to it. Online learning is unmonitored, so all participants (lecturers and students) should be highly motivated and self-disciplined.

Online Learning - Is Indonesia Ready Yet?

Finally, is Indonesia ready for Online Learning?

ES: Not yet, just 50 percent or less in my opinion. A lot of improvements are obviously needed especially regarding homogenized IT infrastructure throughout the country that is not very easy. Likewise, IT ability is very diverse in Indonesia.

MM: Yes, Indonesia is ready for online learning in most large cities, which is about 80% of the total population. Nowadays, Indonesia already has some excellent internet providers that will be able to support digital learning. However, this may still be a problem in the remaining areas, where villages have limited internet access.

AF: According to me, in general, Indonesia is ready for online learning, with some exceptions in remote places with poor infrastructure, e.g. poor internet connections

and few cellular towers. This insufficient infrastructure will hinder online teaching and learning activities. To make online learning successful, universities should also support students to have enough mobile phone credit to connect to the internet. Another important instrument is premium (not free) Webinar applications which enable many participants to join. Last but not least, related to the technological issue, the internet bandwidth in Indonesia is still low and audio and video for online learning requires high bandwidth. I think the government needs to pay attention to this issue.

Frankly speaking, Indonesia will be ready for online learning if financial support and budget are available in sufficient amounts.

Advertisement by German Universities



Technical University of Munich (TUM) TUM School of Management at TUM Campus Heilbronn

- Bachelor in Management & Technology – Focus on digital technologies
- Master in Management – For engineers and natural scientists
- Master in Management & Innovation – For young professionals
Specializations: Management of digital transformation, family businesses & start-ups

Apply now! Starting your studies virtually will be possible at TUM Campus Heilbronn in Germany for the winter semester 2020/21!

More Info: [visit this link](#)



Earn an LL.M. International Finance degree at the Institute for Law and Finance (ILF)!

Scholarships available! Degree conferred by Goethe University Frankfurt. For graduates from Asia holding a first degree in law, business or economics. One-year program conducted in English.

Apply now to LLMint@ifl.uni-frankfurt.de

More Info: [visit this link](#)



24 SEPTEMBER 2020 | 1 PM

ONLINE EVENT!

FALLING WALLS LAB IS COMING TO JAKARTA

Which wall will your research break? Pitch your innovative idea in just 3 minutes, showcasing a breakthrough that creates a positive impact on science and society.

WHO

Students, entrepreneurs, early-career researchers, & academics of all disciplines

WHAT

Convince a jury of your idea - in 3 minutes!

WHY

Join the growing Falling Walls community of emerging innovators & win your spot in the global Falling Walls Lab showcase!

The winner will also receive the EURAXESS Prize - a high-quality online science communication training led by a European science communication expert.

WHERE

Online event

QUESTIONS

fallingwallslab@daadjkt.org

APPLY HERE

[falling-walls.com/lab/apply](https://www.falling-walls.com/lab/apply)
Deadline: 30 August 2020

FALLING
WALLS
LAB



DAAD

Deutscher Akademischer Austauschdienst
German Academic Exchange Service



More info about Falling Walls Lab Jakarta, please visit: <https://www.daad.id/S2S5m>

Online Learning in Students Perspective

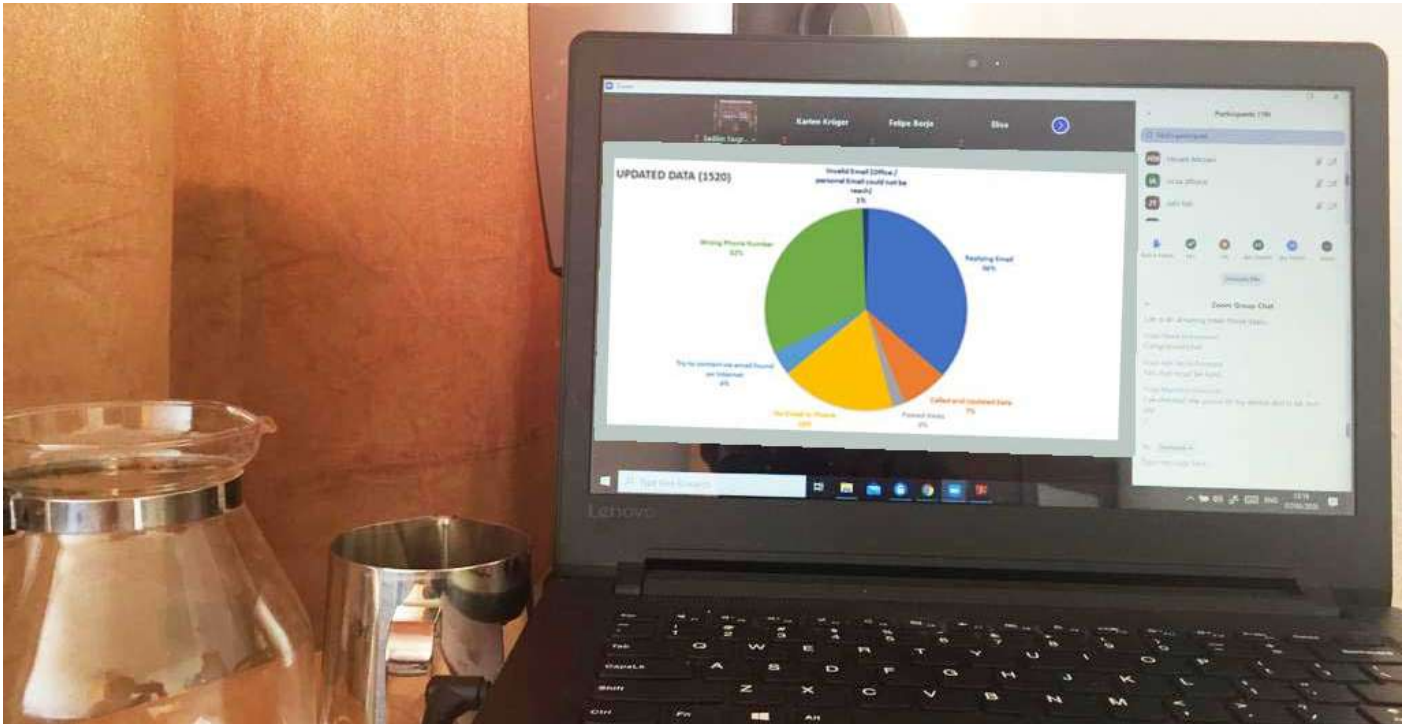


Photo: Sadikin Nugraha

Besides lecturers, students also have to adapt to the “new way of learning”. In the previous article we have read about online teaching from the perspective of educators. Now we will try to look at online learning through the eyes of students.

In this edition, we interviewed 2 of our DAAD Scholarship holders, who are currently pursuing their Masters degrees in Germany:

- Habibul Abrar, who is currently studying for a Masters in Public Policy (MPP) at Willy Brandt School of Public Policy at the University of Erfurt and is an awardee of DAAD-ACEH Scholarship of Excellence.
- Amalia Dwiandani who is currently studying Hydro Science and Engineering at Technische Universität Dresden and is a DAAD EPOS scholarship holder.

Habibul Abrar and Amalia Dwiandani share their thoughts about online learning and give some tips that might help other students to get the best out of online learning. Here are our interviews with them.

How has online learning been conducted in your university during the COVID-19 pandemic?

Habibul Abrar (HA): Online learning was conducted rather well in my university. The university already had an existing communication platform called moodle for professors and students where professors can upload material. Moodle is a key reason for the success of online learning this semester.

The university has also provided conference platforms to conduct the classes. Our university uses Webex, some universities use Zoom, some Microsoft Teams. However, the effectiveness of these conference platforms heavily depends on the professors. Some professors are up to the challenge and are quickly able to master the functions and perks provided by the applications. Some need time to even operate the applications, these ones can often be quite funny. Some even chose not to use the applications and record themselves giving lectures instead.

Overall, the experience has been an interesting and unique one.

Amalia Dwiandani (AD): Well it's quite challenging I must say. At my uni, TU Dresden, all my professors have really dedicated themselves to providing online learning, well we started quite late about 3 weeks off schedule because of the pandemic but now everything seems to be going well; unfortunately, we have to participate at university via online learning next semester.

In your opinion, as a student, what are the opportunities and challenges of online learning?

HA: Challenges: boredom from not meeting with many people; being motivated to join the online classes that are basically still in your bedroom; stores being closed which means losing side jobs.

Opportunities: very flexible time schedule, as in there is no need to get up very early to get ready to go to classes; recorded classes; opportunities to find time for praying. This needs a background story. It is commonly known that sometimes professors chose to conduct the classes in a "block seminar" manner. Basically, there are no weekly classes for the course, the classes are held according to the schedule of the professors. Oftentimes, classes can clash with praying time. This can be challenging for Muslims, especially male Muslims. We have to go to pray in the mosque on Friday afternoon. With online classes, we can just join classes on our phone while going to the mosque.

AD: I think this online learning has both pros and cons. For myself, I found it way more comfortable and I feel like it's easy to put myself in a focused mode this way rather than attending the class directly. Some of the students feel relaxed because they don't have to wake up early to prepare stuff for university.

The cons are, I have some subjects that require practical skill and we can't do it this semester so it's quite hard for us to catch up with the lectures. Sometimes the challenges can be from

outside, having a bad internet connection for example and from the inside, we might be too comfortable with the situation, because lately I have seen that less and less students attend the online classes.

Do you have any tips for fellow students on how to learn online effectively?

HA: One of the best tips would be to write down and organize your schedule, be it on paper, or devices. There can be some days where you might forget that you have a class because you are always in your house. It is also very important to always have a clean and organized room, especially your table. This can surely boost your motivation to really join your class instead of just listening from your bed. Visiting your friends and classmates in their houses, or even joining classes together can also be very good for mental health. It can get really lonely most of the time and joining classes together will surely help you stay awake.

AD: Please turn off your phone during the class and hide it somewhere. Make sure your room is comfortable. The last thing is good time management; commit yourself to stick with your study schedule.

Advertisement by German Universities



MBA International Management

- Full-time MBA
- 21 months / 16 months (fast track for business graduates only)
- Language: English
- AACSB accredited

Tuition Fee

- 3.950 € / semester

Application Deadline

- For September: June 15 / July 31 (if no visa needed)
- For March (business graduates only): December 15 / January 31 (if no visa needed)
- Rolling application

Contact: mba@hs-pforzheim.de

More info: [visit this link](#)



Truly international – Study at ESB Business School

You want to study in a truly international setting in Germany, Europe's strongest economy? Come to ESB Business School! We offer top-ranked undergraduate, graduate and executive programmes in business management and business engineering (German and/or English), providing a strong network of partner companies and international partner universities.

More info: [visit this link](#)

Emergency Ventilator ITS (E-VITS)

written by: Dr. rer.nat Aulia Nasution



Photo: Dr. rer.nat Aulia Nasution / Institut Teknologi Sepuluh Nopember

Amid negative news about the ongoing COVID-19 pandemic, there is positive news coming from the Department of Engineering Physics, Institut Teknologi Sepuluh Nopember (ITS) in Surabaya which developed a prototype of a simple and low-cost mechanical ventilator to fulfil the needs of Indonesia. DAAD alumnus, Dr. rer.nat Aulia Nasution, is the appointed chairperson of the ventilator development team named "Emergency Ventilator ITS (E-VITS)". On this occasion, Dr. rer.nat Aulia Nasution shared a story about the developmental process of E-VITS to the DAAD team - here is the story.

As we all know, the coronavirus disease (abbreviated as COVID-19) is an infectious disease that started to spread from Wuhan City in Hubei Province, China, since the end of December 2019. Because this virus attacks the lungs and causes breathing difficulties (pneumonia), in the beginning, it was also called Wuhan Pneumonia. The COVID-19 outbreak has spread to 209 countries, including Indonesia, and the WHO has also declared COVID-19 as a pandemic. Based on statistics released by *Gugus Tugas Percepatan Penanganan COVID-19*, as of 26th April 2020, the number of COVID-19 cases has reached 9,175 cases (79.17% in treatment, 12.46% cured, and 18.37% of death cases); this is an exponential growth trend in confirmed cases (source: [https:// www. Covid19.go.id/](https://www.Covid19.go.id/)).

Because this virus attacks the human respiratory system, some of the symptoms that might be experienced by patients infected with COVID-19 are shortness of breath up to respiratory failure condition. Acute Respiratory Distress Syndrome (ARDS) itself is a condition in which the air sacs of the lungs become filled with viscous fluid (*mucus*) due to an infectious reaction; this causes the lungs to fail to provide oxygen supply through the normal oxygen diffusion process. As a result, the level of

oxygen in body tissue (tissue saturated with oxygenated StO₂) in the patient's body decreases. When this hypoxia condition is not appropriately treated, it might lead to the death of the patient. In this situation, an external intervention is necessary and a ventilator is the clinical instrument which is needed to perform this task.

To overcome the need for ventilators due to COVID-19 due to limited number of ventilators available in the hospitals and to anticipate the increasing number of patients infected with COVID-19, the Institut Teknologi Sepuluh Nopember (ITS) has developed a simple and low-cost mechanical ventilator prototype to assist medical staff in handling the care of patients infected with COVID-19. This contribution from ITS is for the community, which is currently working synergistically hand-in-hand with governmental and public institutions to handle the spread of the COVID-19 pandemic.

The prototype of the emergency ventilator was developed by a team from the Department of Engineering Physics, Institut Teknologi Sepuluh Nopember. I was honoured to lead the development team. Besides me, the team was also supported by one junior lecturer and eight final year students from the department. The first prototype has been successfully tested, as a proof-of-concept prototype that can meet several required criteria for COVID-19 emergency ventilators as set by the Indonesian Ministry of Health. On 11th April 2020, this first prototype was launched by the rector of ITS and named as E-VITS, which is an abbreviation of Emergency Ventilator ITS. The subsequent developmental efforts for the prototype were then focused on increasing the operational durability and enhancing the capabilities of sensor systems, as well as safety for the user/patient.

Emergency Ventilator ITS (E-VITS)



Photo: Dr. rer.nat Aulia Nasution / Institut Teknologi Sepuluh Noverber

The technology used to develop E-VITS

A ventilator can be defined as a machine used to ventilate, i.e. pumping air into and out of patients' lungs, in cases where the patient cannot breathe normally or has a problem in their respiratory system.

The system developed by the ITS team is based on the use of an ambu-bag (generically named as a bag valve mask - BVM), which is known as the manual resuscitator. For the design used for the pumping mechanics, we adopted an open-source design that has been released by a team from MIT, Boston, MA, USA. This BVM and related pumping mechanics are additionally equipped with a DC motor-based system, in which several driving patterns can be set according to the related physiological parameters of the patient's breathing: i.e. the Peak Inspiratory Pressure (PIP), Positive End-Expiratory Pressure (PEEP), Respiratory Rate (in breath rate per minute - BPM), and Tidal Volume. A series of sensor systems (based on pressure and flow measurements) connected to a controller system were also added to be able to regulate the DC motor driving signals parameter settings for PIP, PEEP, respiratory rate, tidal volume, and for adjusting FiO₂ (oxygen levels from ventilated air that is pumped by a ventilator into the lungs) through regulation of the ratio of filtered air and oxygen flow rates from medical gas cylinders or medical gas supply systems in the treatment rooms.

In designing this ventilator, we also considered the availability of the components in the local market, they had to be accessible in the local market and with an affordable price; this was particularly true when choosing the types of motors, sensors, and electronics components from which the automated control system would be built. In addition, for ease of future

manufacturing and regular maintenance and repair, the E-VITS was designed to be modular.

To comply with standards, the E-VITS is designed in accordance with the criteria set out in the ISO 80601-2-12: 2011 standard (Medical electrical equipment - Part 2-12: Particular requirements for basic safety and essential performance of critical care ventilators). We have tested the developed system to be capable of running continuously nonstop for 3 days, and it showed a very satisfactory and stable performance. On the 22nd May 2020, the E-VITS passed technical examinations that were held by the *Balai Pengamanan Fasilitas Kesehatan (BPFK)* Surabaya, the agency under the Ministry of Health which is responsible for ensuring the safe use of medical instruments in healthcare facilities. Now, E-VITS is being prepared to participate in clinical trials that will be held at the Dr. Soetomo General Hospital and the Hospital of University of Airlangga, both in Surabaya.

What's next for E-VITS?

After passing the clinical trials, our team hopes that the developed E-VITS prototype can later be manufactured and utilized to help in handling COVID-19 patients. We will keep striving to make further improvements that can be integrated into our existing prototype. The COVID-19 outbreak has stimulated Indonesian academic communities and other related professionals to work together to fulfil the national need for medical technologies. Hopefully the efforts that we have made can bring much benefit to the people of Indonesia who are struggling to cut the spread of the COVID-19 outbreak. We do hope that this COVID-19 outbreak will soon be over.

Scholarship Now Open



Development-Related Postgraduate Courses
Educating Professionals for Sustainable
Development – Scholarships in Germany

Entwicklungsbezogene Postgradulertenstudiengänge
Ausbildung von Fach- und Führungskräften für
nachhaltige Entwicklung – Stipendien in Deutschland

[Download the EPOS
Scholarship brochure HERE](#)

Development-Related Postgraduate Courses (EPOS)

The EPOS programme offers individual scholarships to participants from developing countries so that they may study development-related postgraduate courses at selected universities in Germany.

Who can apply?

Graduates with at least two years' professional experience .

What can be funded?

Individual scholarships exclusively for Postgraduate courses in Germany that are listed on the ["List of all Postgraduate courses with application deadlines"](#).

Impressum

Publisher

DAAD Jakarta Office
Summitmas II 14th Fl.
Jl. Jend. Sudirman Kav. 61-62
Jakarta 12190
Indonesia

Unsubscribe

If you don't wish to receive any further issues of our newsletter, please send an email to media@daadjkt.org with the subject „unsub“

Editor

Olivia Deskarina

Contact

Phone: +62 (21) 520 08 70
+62 (21) 525 28 07

Fax: +62 (21) 525 28 22

Mail: info@daadjkt.org



Research Grants – Doctoral Programmes in Germany

The aim of this grant programme is to support doctoral projects in Germany.

Who can apply?

Excellent-qualified young academics and scientists who have completed a Master's degree or Diplom, or in exceptional cases a Bachelor's degree at the latest by the time they begin their grant-supported research.

What can be funded?

Doctoral programmes at a state or state-recognised institution of higher education or a non-university research institute in Germany:

- individual projects under the supervision of a university teacher or academic adviser
- participation in a structured doctoral study programme

Application Deadline: 20 October 2020

More information about Research Grants – Doctoral Programmes in Germany please visit: daad.de/go/en/stipa57135739

Visit www.daad.id to check all scholarship programmes that are currently open



www.daad.id



DAAD Indonesia



@DAAD_Indonesia



@daad_indonesia