

EXCITING STUDENT CURIOSITY FOR A FUTURE CAREER: COVID-19 PANDEMIC ELECTIVE COURSE PROGRAM

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ABSTRACT

Background: Medical education disruptions as the impact of COVID-19 pandemic transform the way of Faculty of Medicine, Universitas Brawijaya conducted an elective clerkship program session.

Aims: We consider evaluating the purpose and passion of 194 medical students that join the 2 weeks virtual Elective Course Program.

Curriculum Discussion: Fifty-two tutors and 56 topics are involved. This integrates e-learning program divided into three Google Classrooms elective program. The survey at the end of program expressed the satisfaction of most of the students (59.7%). The online course programs also describe the future plan for the students. Seventy-one per cent students wish to continue specialization programs soon within a year after graduating and this interest is consistent and tends to grow after fifteen years from now.

Conclusion: The enthusiasm to pursue a career seems has not been limited due to the COVID 19 Pandemic.

Keywords: COVID-19 pandemic, elective course program

PRACTICE POINTS

- Our online elective course program integrates e-learning system, virtual model, and curriculum during pandemic situation.
- Varying degrees of enthusiasm and concern of medical students with new paradigm
- The elective course programs must not reduce students' learning rights with medical educators should improvise learning techniques via online.

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INTRODUCTION

The impact of COVID-19 pandemic on education resulted in disruption of medical education and health services in 2020.^{1,2,3} This unprecedented global pandemic presents a challenge to the Faculty of Medicine, Universitas Brawijaya (FMUB) to quickly transform the whole pre-clerkship, early clinical and clinical clerkship curriculum to online formats. In every year, our institution offers a student-centered preclinical programs based on their personal interests. An early clinical exposure elective course program was created for second and third year medical students to maximize learning opportunities and exploration of potential career pathways.^{4,5} It spans two weeks offering a free choice clerkship course that also known as Student selected components (SSC).⁶ A privileged opportunity was offered for medical undergraduates to identify steps to obtain a particular insight concerning the standard curriculum, clinical education experiences and early clinical exposure experiences.^{6,5} An online learning environment so called GAPURA was developed within the framework of Google Classroom.^{7,8} All platforms for team-based collaboration provide method of e-learning such as Eventbrite⁹, Zoom¹⁰, WhatsApp, Google Drive and Google Form were used.

This paper aims to describe the dynamic learning methods that are still new and adaptable, not only extraneous to students but also to other medical educators. We aim to reveal students' interest in a future career during an online elective course program in COVID-19 pandemic setting, especially in the Faculty of Medicine, Universitas

Brawijaya (FMUB).

CURRICULUM DESCRIPTION

How were the programs adapted?

The learning approach of academic level in our institution based on strategy called SPICES and Doctoring Curriculum. Student-centred, Problem-based, Integrated, Community oriented, Elective, Systematic (SPICES) learning methods implemented consistently in every semester. Elective courses are a part of the medical curriculum based on SPICES model educational strategies as described by Dent John (2014). Elective courses became intracurricular program that is mandatory for all students they can choose a topic in the fourth and fifth semesters. Faculty of Medicine, Universitas Brawijaya (FMUB) already adopt the elective course as part of curriculum since 2011.^{11,12}

By default, the main topic of Elective courses in FMUB include of Pre-Clinical Topics, Emergency Medicine, Bio molecular, 12-organ systems Clinical Medicine and Medical Research. Medical students are given the intention to choose the topics according to their wishes about their goals or future when becoming a physician. The pandemic also has an impact on the sustainability of the education program. Consequently, we simplified the learning methods of the elective program. The program was categorized the topics by e-course method and by profiling methods. We make sure that learning objectives are expected to be achieved by releasing Teacher and Student Guide.

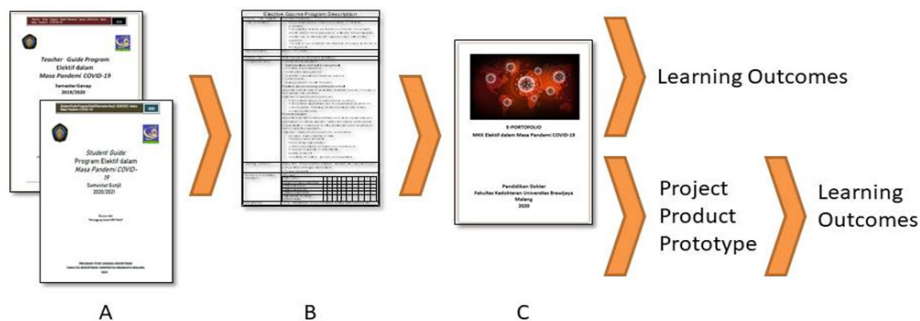


Figure 1. The Standard Operating Procedure of Online Elective Course Program.

Every tutor will receive Teacher Guide and every applicant will receive Student Guide (A). Teacher will describe the elective course program in Elective Course Program Learning Description (B). A learning contract was agreed upon the beginning. In the end of two weeks didactic session every student will upload E-Portofolio as a report (C)

Every department may arrange topics and lecturers to be a tutor that will be assigned. Enrolled tutor may offer 1-2 topics with maximum capacity 10 medical students per tutor. Every tutor must come up with an appropriate title for the topic. This should be concise and accurately reflect the content of the programs. The selected tutor will arrange the topics they want to conduct. They can choose from a range of curriculum subtopics. All this step is guided in Teacher Guide: Elective Course Program in COVID-19 Pandemic Setting. The tutor will outline the program by creating a Learning Description of the chosen Elective Course Program This should include the key points they will discuss and any material aids they may need. These should be relevant and in line with the topic being discussed by online. Every Applicant will receive a Student Guide: Elective Course Program in COVID-19 Pandemic Setting. All this step respectively mentioned in The Standard Operating Procedure of Online Elective Course Program. (Figure 1)

The tutor should help student to identify the objectives of their elective. This should include what

the students will learn by the end of the elective programs. The tutor must create an assessment plan to measure the students' understanding of the topic. This can include a quiz, written assignment, or practical demonstration. The tutor should collect feedback from the students after the lecture. This can help them to improve future lectures and tailor their teaching methods to meet the students' needs.

In the early phase, Whole formations contain 601 listed topics involving 92 tutors. As person in charge, we socializing and ticketing according to existing capacity using the Eventbrite application to 194 medical students. Medical student only permitted to choose one topic. The virtual clerkship spans 2 weeks started on May 4th 2020 and finished on May 15th 2020. As a result, fifty-two tutors and 56 topics were enrolled in this elective program divided into three Google Classrooms. Person in Charge as a course director of the online course program invite and enrolls tutor as Teacher and medical student as Student. Teacher and student join Class using Class Code given by administrator.

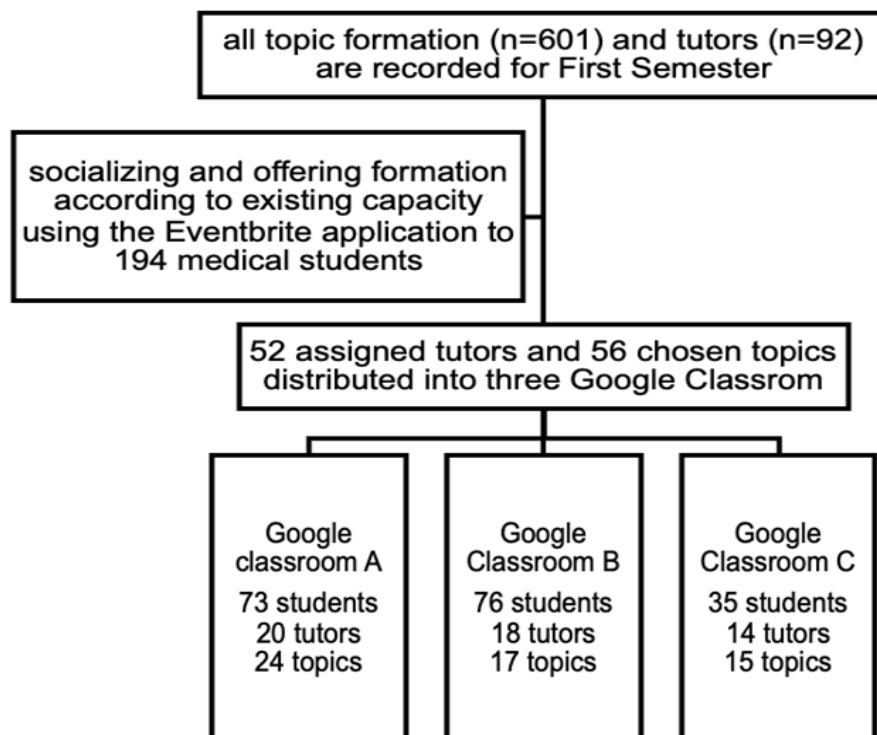


Figure 2. An Online Elective Course Program Workflow at Undergraduate Study Program of the Faculty of Medicine, Universitas Brawijaya (FMUB) during COVID-19 Pandemic by first semester of 2020

Every Teacher will assign to the topic where administrator has categorized the class into topics. Teacher will post assignment on the Class as per topic. (Figure 2) Learning methods are by profiling (n=34), by course (n=12), and both (n=16) as used per tutor. Minimum attendance for each topics to be proceeded were one students. In this occasion, Refraction Examination Technique (n=22) and Burn Management (n=16) are in the top of choice (Figure 3).

How the pandemic limits the elective course program

Our offered virtual learning methods has a limited value in medical education. This obstacle due to the practical and clinical-based elements during remote

Elective course. There is inefficiency to teach skills or to deliver hands on training. This learning method is new to student and tutors. There is a shiftiness how the lecture offers the topic during pandemic situation. We implemented virtual learning methods to ensure medical student growth, development, and well-being using GAPURA.¹³ GAPURA is an integrated service information system portal that provides easy access to information and services collaborated with GSUITE (Figure 4). Medical Student and Tutor using institutions login credentials access as a user of Universitas Brawijaya Information System services (user@students.ub.ac.id and user@ub.ac.id respectively). Google Classroom was used to create a blended approach Google Classroom.^{7,8}

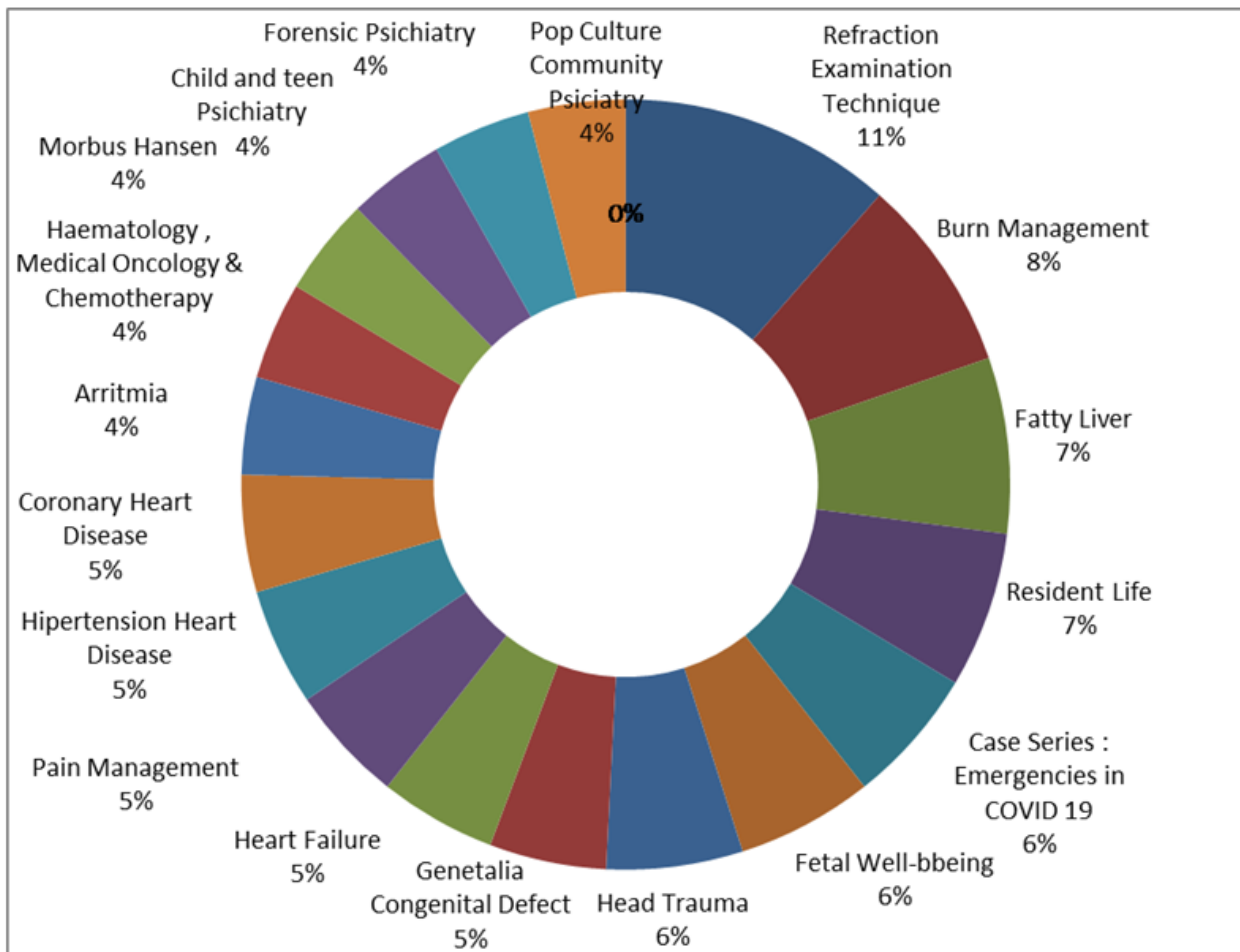


Figure 3. The Distribution of Fifty-Six Topics by 52 Tutors in All Medical Student (n=194) in the Setting of COVID-19. Number Showed in Percentage for Data with Attendant per Topics more than Five Students



Figure 4. Online Applications Help Tutor to Organize and coordinate Assignments, Attendance, and Progress

¹⁾Our Online Elective Program at FMUB integrated Learning management system with Gapura UB (A) as described at <https://gapura.ub.ac.id> such as Google Suit. Video communication application with the ability to share the screen with audience, hold only meetings, and collaborate remotely such as Google Meet, Zoom (B). Ticketing software called Evenbrite (C) for topic option used in this elective course programs. The online survey service such as Google Form or Monkey Survey (D) is used to collect some assignment and feed back in the end of programs.

How does the student see the future during pandemic limitation?

Most of topics in this situation were adapted as the reason above. Many topics are yet unavailable at this moment rather previous year. At the end of the online elective program, we evaluated on the basis of the course test results using Assessment of Assignment on Elective Program Form using Google Form and 194 student turn in An E-Portfolio as an output of this program. An online voluntary questionnaire using a survey service called Monkey Survey application was turned in by 59.7% (n=116)

of the students. Most students use the internet to attend online elective course programs during the learning process. The majority expressed their satisfaction with the online course programs. There are responses collected from this survey. Our study shows that the implementation of e-learning is completely acceptable. Eighty-two students from 116 medical students wish to continue specialization programs soon after graduating from medical school (Figure 5). This enthusiasm is consistent and tends to increase when the issue of the career path would they like to be after fifteen years from now.

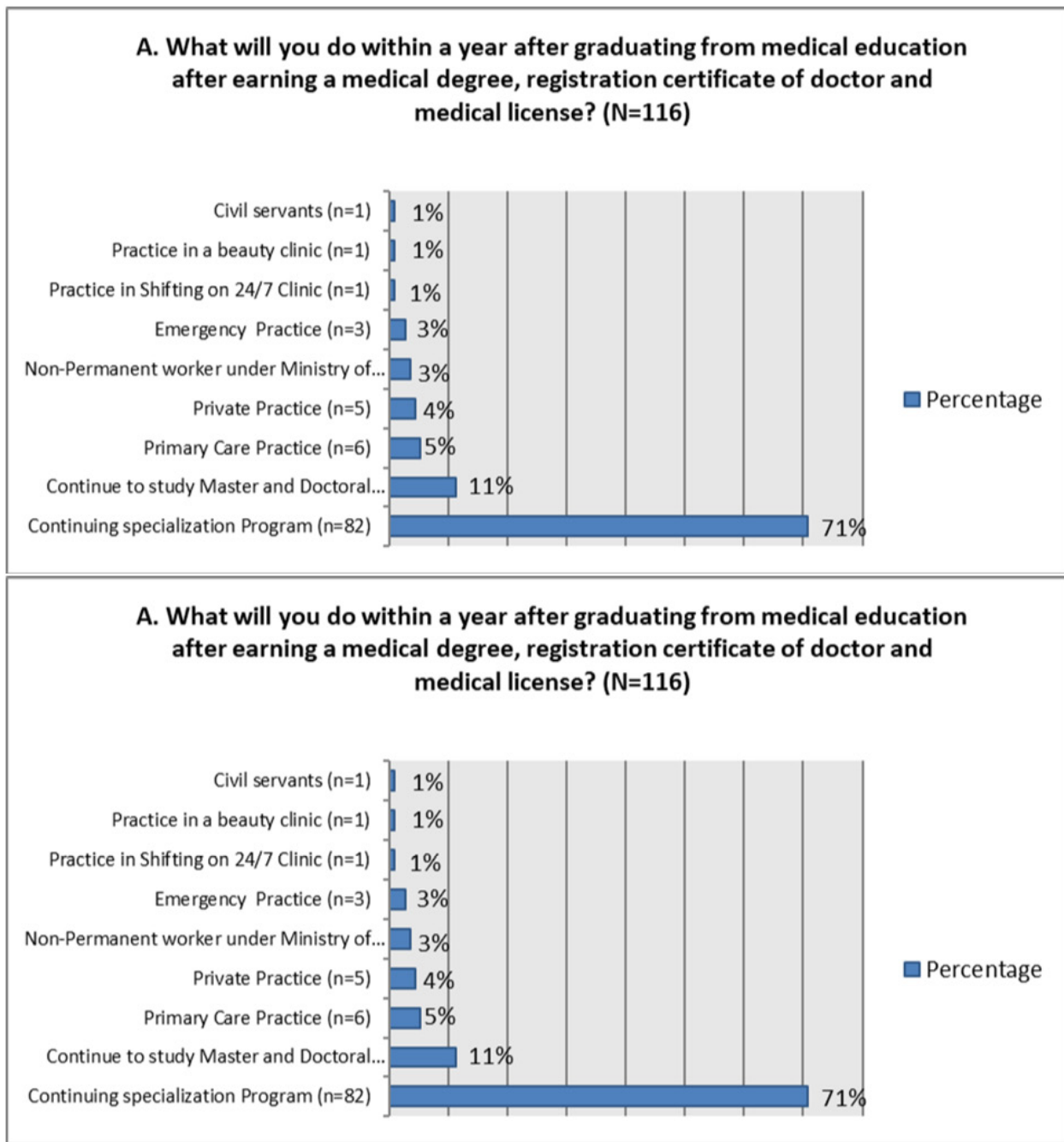


Figure 5. The Future Expectation of the Students (n=116) within A Year after Graduating from Medical Education after Earning A Medical Degree, Registration Certificate of Doctor and Medical License (A) and the Career Path would The Student like to be after 15 Years from Now. (B)

DISCUSSION

Our study note that we can continue our education system by distant learning during COVID 19 situation. Self-directed learning by the medical student is appropriate with student-centre learning as S and E-component of SPICE model.

Elective course program is an intra-curricular program whom every medical student has obligation. Student has free optional to choose any topic as they desired or planned in future.^{12,14} But, the mandatory quarantines and social distancing in a bid to contain the spread of infection make a distance for the

tutor or students to conduct a direct observation in neither clinical setting nor rounding on with “live patients” contact. Previously the methods used before the outbreaks were by-shadowing and by-course. Learning methods by shadowing is a direct observation and rounding on tutor activity.

Student feedback revealed some interesting facts. In this pandemic setting, some medical students are focusing their electives in some specialty. We looking into the list that consist fifty-six topics and we found 50 chosen topics are related to specialty sub-topics. It might due to the plan of residency programs to be a medical specialist in the future. Some studies in Indonesia reported the choice of specialist as a career among young doctors is 56.25% to 77.01%.^{15,16} It seems the desire to dream a career has not been hindered by the COVID-19 Pandemic. The shifting of live clinical exposure to the virtual one is challenging. It is influencing how the student chose the elective topic without leaving their goals.

Strengths and limitations

As the study participants belonged to the medical student from a singular semester during the COVID-19 outbreak the findings are only applicable to identical contexts. Online electives provide flexibility in terms of timing and location. Students and tutor can attend classes from anywhere and at any time, as long as they have an internet connection. Students who may face physical or time constraints that would make it difficult for them to enrols in traditional courses can greatly benefit from online electives. Online electives offer students the option to tailor their learning experience to their unique interests and career aspirations. Online electives tend to be more affordable than traditional in-person courses, and may allow students to save on transportation costs.

This study has not been capable to illustrate the overall circumstances of students at different level nor medical faculties. However, Online electives Limited Interpersonal interaction between instructors and students, which may impact the quality of the learning experience. In some part, online electives require reliable access to high-speed internet and functional technology. Technical issues, including

internet connectivity problems or platform failures, may hinder students' ability to complete coursework or participate in discussions. Without proper monitoring, maintaining academic integrity might be difficult in online elective courses. Some courses may require hands-on which cannot be adequately replicated online. Despite the limitation, our finding offers an acquaintance of the benefits, constraints, and suggestions for improvement in online medical learning in future education.

CONCLUSION

Online elective course program at Faculty of Medicine Universitas Brawijaya may be a successful model of how faculty and medical students at the institutions can collaborate and integrate e-learning during pandemic situation. Overall, online electives can provide a valuable learning experience for medical students, but they are not without limitations. The enthusiasm to pursue a career in the future seems has not been limited due to the COVID-19 Pandemic.

RECOMMENDATION

COVID-19 pandemic adversely and significantly influenced how future physicians are educated. Based on the current experience, we recommended to the Universities and especially to our Institutions to prepare enduring transformation in medical education with the advancement of adaptable technology.

COMPETING INTEREST

The authors declare no competing interests related to this study.

AUTHORS' CONTRIBUTION

Triwahju Astuti – Head of the Medical Undergraduate Study Program of the Faculty of Medicine, Universitas Brawijaya; collecting data and publication manuscript.

Garinda Alma Duta – Coordinator on developing online elective course program; monitoring and evaluation; collecting data and publication manuscript.

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