BENCHMARKING REPORT

BIOLOGY STUDY PROGRAM
SAINS AND TECHNOLOGY FACULTY
UNIVERSITAS ISLAM NEGERI
MAULANA MALIK IBRAHIM MALANG
Introduction

Biology Study Program, Faculty of Science and Technology, UIN Maulana Malik Ibrahim Malang, according to its vision and mission, has to become an internationally reputable Biology Study Program that integrates science and Islamic studies both from student recruitment, student organizations, administration, and study program services, academic activities, curriculum, human resources and management systems of the Biology Study Program, has become a professional and reputable Study Program.

Based on this commitment, the Biology Study Program, Faculty of Science and Technology, UIN Maulana Malik Ibrahim Malang carried out benchmarking to several representative universities including Brawijaya University (Indonesia), Chulalongkorn University (Thailand), King Mongkut's University of Technology Thonburi Thailand (KMUTT) (Thailand) and Hiroshima University (Japan). These universities were chosen as the objectives of benchmarking because they were colleges that had a Faculty of Science and Technology and a Biology Study Program that had been accredited nationally and internationally. The output of these benchmarking activities includes curriculum, academic administration system for study programs, financial management systems, and laboratory management and utilization.

Objectives from these activities are: (i) Comparing the competencies of the Study Program, (ii) Seeing existing laboratory facilities and teaching and learning process, (iii) Comparing the Academic Administration System of Study Programs, and (iv) Pioneering collaborative networks for research and education.
Introduction

Benchmarking activities with Universitas Brawijaya were carried out in 2017 as one of a series of activities from the Senior Experten Service from Germany to improve quality in laboratory management. The activity lasted for two days, namely in the Biology Department, Central Laboratory of Living Sciences (LSIH), and the Biosciences Institute at Universitas Brawijaya.

Department of Biology Universitas Brawijaya (JB-UB) has received a accreditation from the National Accreditation Board for Higher Education (BAN-PT) University activities have been determined in the procedure manual (documented procedure) by the JB-UB Quality Assurance Unit following ISO 9001: 2008 and IWA 2: 2007. LSIH is a central laboratory with ISO 9001 (management) and ISO 17025: 2017 (laboratory service system) standards and is the only central service laboratory in Universitas Brawijaya. The Biosciences Institute acts as a supporting facility for integrated research activities, training, testing, and development of necessary materials for the
biological industry based on Good Laboratory Practice (GLP) & Good Manufacturing Practice (GMP), which is under Universitas Brawijaya.

Implementation of Activities

The first activity is a visit and a comparative study with the Department of Biology, Universitas Brawijaya. The activity is attended by the Head of the Departments of the two institutions, lecturers and laboratory staff, held in the meeting room of the Faculty of Mathematics and Natural Sciences (MIPA) Building Universitas Brawijaya. On that occasion, the Head of the Department of Biology, Universitas Brawijaya, Prof. Dr. Luchman Hakim, S.Si., M.Agr.Sc., Ph.D., conveyed a profile regarding the bachelor program of Biology, laboratory facilities, and infrastructure, laboratory management including eight laboratories and quality assurance systems. The activity lasted for five hours, and the team from the biology study program, UIN Maulana Malik Ibrahim Malang followed the tour attentively.

The activity on the following day was a visit to the Central Laboratory of Life Sciences (LSIH) which was welcomed by Prof. Sutiman Bambang Sumitro, S.U., D.Sc. by describing laboratory management at LSIH, international standard service management by obtaining ISO 9001: 2008 since 2011. In 2012, LSIH achieved ISO 17025: 2005 for human karyotyping testing services, protein analysis, and moisture content. Comparative studies to laboratories at LSIH include microbiology, molecular and cellular biology, environmental, micro, and nano-imaging laboratories. Laboratory equipment is well calibrated. Finance administrative management is also one of the benchmarks focuses.

The next plan was a visit to the Institute of Bioscience, Universitas Brawijaya. The Institute of Bioscience has several laboratories with facilities to support the implementation of research; the histopathology laboratory, the experimental animal laboratory, the molecular biology analysis laboratory, the cell culture laboratory, the microscopy room, and molecular fingerprints. The animal holding room was used as a comparative study model at this visit.
Evaluation of Activities

Based on the benchmarking with Universitas Brawijaya, the Biology Study Program UIN Maulana Malik Ibrahim Malang mapped the laboratory conditions and its management in the summary of Table 1. This activity provides output to improve laboratory management for the Biology Study Program.

Table 1. Peer Laboratory

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<thead>
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<th>Area</th>
<th>BSP-UIN Malang</th>
<th>JB-UB</th>
<th>Institut Biosains</th>
<th>LSIH</th>
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<td>Animal Physiology</td>
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<td>Microbiology</td>
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<td>Plant Taxonomy</td>
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<td>Biocomputation</td>
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<td>Optic/microscopy</td>
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<td>Biochemistry</td>
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<td>Education</td>
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<td>Animal cage/experimental</td>
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<td>Bio Imaging</td>
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<td>Food and Halal</td>
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<td>Histopathology</td>
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BENCHMARKING
with King Mongkut's University of Technology Thonburi Thailand (KMUTT)

Introduction

Thailand as one of the ASEAN countries that excel in the field of education, especially in the field of Science and Technology, is very suitable to be used as an academic exchange destination. The King Mongkut's University of Technology Thonburi is one of the best campuses in the field of Biotechnology in Asia. Lab visit activities, training, and an MoU agreement between the Biology Study Program, Faculty of Science and Technology with King Mongkut's University of Technology Thonburi Bangkok to improve and develop the next BSP. This is in line with the mission and vision of the campus to internationalize study programs, through improving the quality of existing human resources and management.
Implementation of Activities

This activity is a continuation of the MoA that has been carried out. Since 2015, the Faculty has signed a MoA with the School of Bioresources and Technology KMUTT-Thailand. The evaluation of the MoA and the sustainability of the academic exchange are discussed in this activity (Figure 2). The results obtained in this activity are:

(i) Get to know and learn more about the education system at the best Thai universities, especially at 2 universities, namely Chulalongkorn University and King Mongkut’s University of Technology Thonburi Bangkok

(ii) Opportunities for collaboration between universities such as student exchanges, visiting lecturers, collaboration research (joint research and publication), community service (community service), etc.

(iii) Increasing the quality of Lecturers and Laboratory Staff of the Department of Biology, FST in the fields of Food Biotechnology, Animal and Plant Biotechnology.

(iv) Introducing UIN Malang in the international arena

The speakers for this activity are Professor / Doctor / Principal Researcher and Expert in the field of Biology and Waste Management at KMUTT Thailand. Researchers and Lecturers who have a reputation for at least regional (Asian) or international publication at KMUTT.
Evaluation of Activities

The desired output from this benchmarking is to be able to provide useful knowledge, information, and international insight for lecturers and staff of the Biology Study Program at UIN Malang. Especially in the management of laboratory waste and its application and the realization of the internationalization of the department that is applied to the learning and research process so that it is useful in printing graduate profiles that are by the vision and mission of the university.

The follow up of the collaboration was sending 8 students to carry out an internship/internship program at the university for 1 full month in 2016. Two Biology graduates were accepted for the Biotechnology Master program in the same year. Next in 2017, 8 students will also be sent for the same program.

Discussion on Internship Program and Academic Exchange with Prof. Bossya Bunnag
BENCHMARKING with Hiroshima University

Introduction

The Biology Study Program is one of the leading study programs at UIN Maulana Malik Ibrahim Malang. In its development, the Biology Study Program is determined to continue to improve the education management system in it and be committed to continuing to develop biology-based science and technology and its integration with Islam as a characteristic of UIN Maulana Malik Ibrahim Malang. Based on this commitment, the Biology Study Program, Faculty of Science and Technology UIN Maulana Malik Ibrahim Malang carried out benchmarking to representative universities.

One of the things that are of concern in conducting benchmarking is around laboratory management/governance. Several leading universities abroad have become the goals and objectives in conducting the benchmarking. One of the foreign universities selected for benchmarking around laboratory management/governance is the University of Hiroshima in Japan.
The choice of the University of Hiroshima as a reference for benchmarking was made considering that the university is one of the best universities globally and in Japan, especially in science and technology. Besides, the Japanese community’s culture of discipline and order in managing laboratories is another reason for choosing that university as a reference university in conducting benchmarking.

Activity Objectives
1. Comparing the competencies of the Biology Study Program
2. Seeing existing laboratory facilities and teaching and learning processes
3. Comparing the administrative system in managing the laboratory
4. Pioneering collaborative networks for research and education

Implementation of Activities

The visiting activity at the University of Hiroshima was carried out on May 17-21, 2018. The visiting group consisted of the Rector of UIN Maulana Malik Ibrahim Malang (Prof. Dr. H. Abdul Haris, M.Ag.), Dean of the Faculty of Science and Technology (Dr. Sri Harini, M.Si.), Deputy Dean 2 of the Faculty of Science and Technology (Dr. Dwi Suheriyanto, MP.) And Head of the Biology Study Program (Romaidi, M.Sc., D.Sc.). Prof. Dr. H. Abdul Haris, M.Ag., as the head of the group in his speech conveyed the purpose of this visit to get to know more closely the laboratory management carried out by the University of Hiroshima, which is believed to be very advanced so that it is an option for benchmarking. Many things want to be studied and used as examples and applied at UIN Maulana Malik Ibrahim Malang, which is currently determined to improve the management system and laboratory governance. One of the places visited was the Marine Biological Laboratory (MBL) in Mukaishima, one of the leading laboratories at the University of Hiroshima. This meeting was held with the delivery of information from the University of Hiroshima and an active discussion from the Biology Study Program of UIN Maulana Malik Ibrahim Malang on the things that were conveyed, including:
1. Explanation of the MBL profile
2. Explanation of Laboratory utilization and management
3. Explanation of cooperation opportunities for joint education and research so that it becomes a research partner for lecturers and students in the development of science and technology
The possibility of exchanging both students and lecturers
Evaluation of Activities

After this activity was carried out, the action was continued with an evaluation, carried out on July 27, 2019, and continued with the preparation of an Activity Accountability Report. Internally, the Biology Study Program has met and is determined to adopt several considered essential and useful things. One is supervision, monitoring, and control of each process/student research activity in the laboratory. One of the results of this benchmarking activity is that later in October 2019, a limited number of student and lecturer exchange plans (Sakura Science Exchange Program (SSP)) with the University of Hiroshima was agreed through an internal selection mechanism. Besides, Since November 2019, guest lectures will be held periodically by inviting lecturers from the University of Hiroshima.

A series of study visits at the University of Hiroshima, especially at MBL, was beneficial for how the laboratory facility management system and other supporting facilities were in each student's final project research process. This can be used as a comparison material for the Biology study program to improve laboratory services and other research support facilities by implementing a better administrative system. Besides, it is also hoped that in the future, the Laboratory facilities in the Biology study program can be further improved so that later it can collaborate for research and education together with several other universities.
BENCHMARKING with University of Chulalongkorn Thailand

Introduction

Among the campuses that are the destination for comparative studies of the biology department of UIN Malang is the biology department of the University of Chulalongkorn Thailand. The choice of CU as the benchmarking campus is because CU has a very good ranking in Asia and its established quality and service. The focus of a comparative study is on the development of a zoological field. Where CU has very complete facilities.

Visits to CU have been made several times, namely on; 2015, 15 Aug 2017 and 30 July 2019 Everything was very well received and welcomed by the head of the department, Dr. Noppadon Kittana.
Implementation of Activities

The implementation of activities that have been carried out include ICOBAS 2019, Greentech (https://saintek.uin-malang.ac.id/?p=281), Herpetofauna Workshop, Joint Field Lectures and scholarships for 1 semester in Chulalongkorn (https://saintek.uin-malang.ac.id/?p=303) as students of UIN Malang (2020). While the visit from CU to UIN Malang on March 21-23 2019 was also for the implementation of international conferences, guest lectures and workshops.
Evaluation of Activities

The evaluation of the activities is going very well, and needs to be improved, especially in terms of joint research and publication.