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Basic Laboratory Management Training for Institutions

Srinatalia Silaen

Universitas HKBP Nommensen

Corresponding Author: srinataliasilaen92@gmail.com

Abstrak

Tujuan Pelatihan Dasar Laboratorium yaitu meningkatkan kompetensi tenaga laboratorium dalam pengelolaan laboratorium sesuai dengan kebutuhan dan perkembangan yang terjadi di masyarakat, meningkatkan kemampuan tenaga laboratorium dalam melaksanakan tugas dan peningkatan karir, meningkatkan kemampuan dasar pengelolaan laboratorium.
Metode yang digunakan dalam kegiatan ini berupa praktik di lapangan dan pelatihan. Oleh karena itu perlu diadakan pelatihan-pelatihan, workshop dan sosialisasi kepada guru, dosen, peneliti, pustakawan, laboran, teknisi, tenaga pendidik soft skill mereka berkembang dan meningkat. Salah satu pelatihan tersebut adalah pelatihan sosialisasi laboratorium dasar untuk perguruan tinggi terutama di bidang kimia, fisika, biologi, bahasa dan komputer dengan konsep merdeka belajar sekaligus meningkatkan kemampuan menjadi cakap dalam dunia laboratorium nantinya.
Yang menjadi latar belakang masalah dalam penelitian ini adalah mengembangkan ketelitian dan pemahaman dunia laboran melalui pelatihan workshop dan sosialisasi pembelajaran merdeka belajar di tingkat perguruan tinggi. Berdasarkan rumusan masalah di atas, maka tujuan dari pengabdian ini adalah untuk mengembangkan konsep merdeka belajar di tingkat perguruan tinggi melalui pelatihan workshop dan sosialisasi pembelajaran merdeka belajar bagi mahasiswa dan dosen ini dapat berjalan lebih baik.
Manfaat Teoritis dalam peningkatan peran serta laboratorium perguruan tinggi dalam mengatasi permasalahan terkini di masyarakat, peningkatan kualitas laboratorium, peningkatan kemampuan layanan laboratorium dalam mendukung Tridharma perguruan tinggi.
Kata kunci: *Pelatihan, Laboratorium, Perguruan Tinggi*

Abstract

The objective of Basic Laboratory Training is to increase the competency of laboratory personnel in laboratory management in accordance with the needs and developments that occur in society, increase the ability of laboratory personnel to carry out their duties and career advancement, improve basic laboratory management skills.
The method used in this activity is in the form of practice in the field and training. Therefore it is necessary to hold trainings, workshops and outreach to teachers, lecturers, researchers, librarians, laboratory assistants, technicians, educators so that their soft skills develop and improve. One of these trainings is basic laboratory socialization training for tertiary institutions, especially in the fields of chemistry, physics, biology, language and computers with the concept of independent learning while increasing the ability to become proficient in the laboratory world later.

The background of the problem in this research is developing accuracy and understanding of the world of laboratory assistants through training workshops and socialization of independent learning at the tertiary level. Based on the formulation of the problem above, the purpose of this service is to develop the concept of independent learning at the tertiary level through training workshops and socialization of independent learning for students and lecturers to run better.
Theoretical benefits in increasing the role of higher education laboratories in overcoming current problems in society, improving laboratory quality, increasing the ability of laboratory services to support the Tridharma of higher education.
Keywords: *Training, Laboratory, College.*

Introduction

The Ministry of Education and Culture's Directorate General of Higher Education continues to work improve laboratory competence through the development of infrastructure and resources laboratory manager. Infrastructure development such as laboratory buildings,

Procurement of equipment and material facilities and other physical facilities is carried out in a programmed manner sustainable, meanwhile for the development of human resources, carried out with development of a career system through the functional position of Education Laboratory.

As a laboratory manager has a clear career path in accordance with the position other functional such as librarians, archivists, teachers, lecturers, researchers, etc.

The laboratory is one of the strategic supporting elements of academic activities in universities, as well as facilities for students and lecturers in carrying out activities education, research, and community service. Order laboratory support for the Tridharma activities to take place effectively, university laboratories are necessary professionally managed so that all laboratory resources including personnel, equipment, materials, and methods are managed optimally, so as to produce data valid.

Refers to the data type and scope university laboratory work in Indonesia, there are 3 basic areas of the family science that is commonly used in carrying out various laboratory activities, viz chemistry, mechanics and biology. Based on this, it is necessary to carry out activities Laboratory Management Technical Guidance for the three fields.

The laboratory must also have and implement quality management system standards so that all available resources are managed professionally, oriented towards competent laboratories capable of producing valid data or quality product prototypes by taking into account aspects of safety, health, security and environmental requirements in a sustainable manner . Occupational Health and Safety management system, BIOSAFETY, Good Laboratory Practices, ISO-9001, ISO-14000, ISO-15189, or ISO/IEC 17025 are standards that need to be considered for implementation in laboratories.

The Directorate of Educators and Education Personnel, the Director General of SDID has also regulated laboratory level nomenclature into type 1 and 2 laboratories which are focused on facilitating educational activities, type 3 laboratories to facilitate educational and research activities, and type 4 laboratories to facilitate educational, research and community service activities. (*Permenpan and Bureaucratic Reform No.3/2010*).

There are 3 (three) ways to practice independent learning in the process of teaching and learning activities (KBM). That is :

Build commitment to goals.
At the stage of building commitment to goals, there are several things that must be done, including:
1. Cultivate internal motivation
2. Involve students in setting goals
3. Show interest in learning
4. provide constructive feedback
5. Provide graded and meaningful challenges
Build learning independence
At the stage of building learning independence, there are several things that educators need to do, including:
1. Ask students to look for information.
2. Facilitate the experience of success.
3. Establish a positive class routine.
4. Ask students to monitor their progress.
5. Differentiate teaching.
Cultivating the habit of reflection
At the stage of cultivating the habit of reflection, there are several things that educators need to do, including:
1. Variation of questions during study.
2. Documentation of the learning process and results.
3. Involve students in self-assessment.
4. Provide unstructured study time.
5. Demonstrate tolerance for error.
Based on the problems that occurred, the author thinks there is a need for training on workshops and socialization of basic laboratory to learn at college to improve the competence of laboratory personnel in laboratory management in accordance with the needs and developments that occur in society, increase the ability of laboratory personnel in carrying out their duties and career advancement, improve basic laboratory management skills. Hard skills must be accompanied by qualified soft skills. With increased socialization of teachers in schools can affect interest in learning and student learning outcomes. Therefore, it is necessary to hold training workshops and socialization to teachers, lecture, techinician, librarian, and researcher, so that the soft skills of teachers can develop and improve. One of the trainings is training socialization of learning with the concept of independent learning as well as improving the soft skills of them.

Implementation Method

The method used in this activity is in the form of practice in the field and training. One of these trainings is basic laboratory socialization training for tertiary institutions, especially in the fields of chemistry, physics, biology, language and computers with the concept of independent learning while increasing the ability to become proficient in the laboratory world later.

1. Therefore it is necessary to hold trainings, workshops and outreach to teachers, lecturers, researchers, librarians, laboratory assistants, technicians, educators so that their soft skills develop and improve.

a. Librarian
b. Teacher
c. Lecture

d. Researcher
e. Laboratory assistants
f. technicians, etc.

2. One of these trainings is basic laboratory socialization training for tertiary institutions, especially in the fields of chemistry, physics, biology, language and computers
a. chemistry laboratory
b. physics laboratory
c. biology laboratory
d. language laboratory
e. computer laboratory.

3. The systematics of the training implementation are as follows:
However, detailed knowledge and experience are needed to translate into operational activities.
a. Strategic matters that need to be understood include leadership issues.
b. Training of laboratory personnel, utilization and maintenance of equipment, management of information sources
c. Quality control of analysis results, occupational safety and health, waste management, as well as administration and reporting systems.

HKBP Nommensen University Medan as a well-known private university in Medan City has always consistently implemented the Tri Dharma of Higher Education, as stated in the Higher Education Law. Basically, the Tri Dharma of Higher Education is one of the goals that must be achieved and implemented by every university.
The Tri Dharma of Higher Education includes 3 things, namely:
1. Education and teaching
2. Research and development
3. Community service.
In principle, these standards and guidelines regulate how an organization carries out comprehensive laboratory management starting from management aspects, technical aspects, occupational health and safety, risk management, to the management and handling of laboratory waste. Through the practice of implementing quality management, it is hoped that the laboratory will be able to make continuous improvements, achieve the set targets, ensure the health and safety of personnel and be responsible for the environment and surroundings. In order to ensure consistent application and formal recognition, laboratories generally follow accreditation and certification schemes.
At the beginning of the training, the resource persons first explained the concept of independent learning to all participants. Then the participants were instructed to create an account (login) on the online platform first, guided by the resource person. When finished, the homepage of the online platform will appear, at this stage the resource person explains the functions and uses of the features available on the online platform.
The training was preceded by a question and answer activity between the resource persons and the training participants. The resource persons especially asked what online learning applications were used by the laboran in conducting distance learning. That who attended the training, they stated that they only used the Whatsapp, Zoom and Youtube applications. Then the resource persons asked whether the laboran of already knew about the online application and they stated that they did not know about

the online application. Based on this statement, the resource persons immediately started training on online applications. After the resource persons explained the material about the online platform, the training was continued with a question and answer activity to find out the responses and feedback from them.

Figure 1. Documentation in room

Conclusion

Understand general management principles. Understand laboratory management and the importance of a strong commitment regarding the role of the laboratory as a reliable and trustworthy "data generator". Have thorough knowledge of HR management, equipment, chemicals, and waste handling. Able to coordinate and motivate laboratory staff and personnel to work together, conscientiously and dedicatedly. Have the ability to manage the laboratory cleanly, neatly and safely. Understand the latest laboratory management system. Understand the principles of occupational safety and health in the laboratory. Able to compile documents and record laboratory management activities based on the latest laboratory management system. Able to manage equipment, materials, and laboratory methods according to the scope of work Technical guidance.

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