



**DEVELOPING AN EDUCATION & INTEGRATED CRITICAL EVENT MODEL (ICEM) RESEARCH TRAINING BY USING A MENTORING STRATEGY FOR HEALTH COLLEGE LECTURERS**

**Mulastin<sup>✉</sup>, Samsudi, Rusdarti**

Postgraduate Program, Semarang State University, Indonesia

**Article Info**

*Article History:*

Accepted April 2016

Approved May 2016

Published June 2016

*Keywords:*

*Research Education and Training, mentoring Strategy.*

**Abstract**

As part of the three functions of higher education, lecturers should be able to develop new findings through research activities and use them for teaching materials for their students. However, there are still lecturers who do not have adequate competence in carrying out research activities and publish their research findings in scientific journals. Therefore, a model for education and training ICEM for lecturers of Health Colleges in Central Java is still needed. The model is combined with a tutorial strategy for all stages of research activities. This study is meant to develop a research education and training ICEM model combined with a mentoring strategy, including planning, implementation, and evaluation. After three states of preliminary study, development, and testing, the model is significantly effective and can be used as an alternative model for training research activities for lecturers of Health Colleges in Central Java.

© 2016 Semarang State University

<sup>✉</sup> Correspondence Address :

Kampus Unnes Bendan Ngisor Semarang 50233

E-mail: [jed@mail.unnes.ac.id](mailto:jed@mail.unnes.ac.id)

p-ISSN 2085-4943

e-ISSN 2502-4469

## INTRODUCTION

The role of lecturers in higher education is very important to maintain the quality of education. They have three main functions, known as Higher Education Triple Functions – teaching, research and community service. Research as one of the three functions is essential because through research, lecturers can develop new findings and apply them to solve various problems. Findings of the research will enrich the lecturers' knowledge and improve the quality of their teaching in the classroom.

For higher education, research conducted by lecturers, in addition to improving their academic references, will improve the image of the institutions and make them known as the source of science development. Higher institutions are expected to contribute to the solution of the development problems for the people's prosperity. Therefore, research activities should be continuously improved in a quantitative and qualitative way.

Given the importance of the research for lecturers, Health Colleges have set up research activities as important agenda for their program. As a result of the current development both in the country and overseas, Health Colleges encourage the revision of Research Guidelines for Lecturers as stipulated in Decree No. 045a/SK.P/III/IKPIA/2011 on Provisions of Grants for Academic Writing, Research, and Publication for lecturers in Health Colleges.

Research Guidelines for Lecturers will describe the mechanism and procedures of research activities in Health Colleges and at the same time serve as a reference for monitoring, quality control, evaluation, and research development to produce high quality and beneficial research for the community. They will also standardize the lecturers' research.

The people's demand for high quality higher institutions is increasing. Higher institutions are expected to produce independent and innovative scientists to develop the communities (Tiara, 1997:167). The innovation should be suitable with changing people's needs. Higher institutions develop high quality human

resources, with academic, professional, and intellectual competences. Other than improving the quality of human resources with the mastery of science and technology, higher institutions should also develop science and technology to be advancing and competitive (Anwar, 2003:69).

Various factors influence higher education. One dominant factor that influences the quality of higher education is the quality of human resources, particularly academic staff (Syarif, 2003: 1-6). Academic staff plays a key role within internal higher education and determine the success of the organization of higher education. This internal factor can be controlled by organizing management of higher education to achieve their goals (Prasetyo, 2000: 53-67).

Human resources are the most valuable assets for higher institutions, and often regarded as competitive edge as compared to industry, business and government sector (Depdiknas, 2004). One of the internal strengths of higher institutions is high quality academic staff, indicated by the number of lecturers with specific expertise and holding masters and doctorate degree and professorship qualification (Sufyarma, 2003:130). Therefore, developing human resources is very important for each higher institution.

Lecturers are appointed by higher institution management on the basis of their education and expertise and assigned to teach in their institutions. They have strategic position and directly influence the teaching and learning process of their students. The quality of the learning process and achievement is surely determined by the quality of the meeting between lecturers and students (Uwes, 1999:11).

The higher education database (<http://pdpt.dikti.go.id>, 2014) shows that the academic qualification of the lecturers of Health Colleges in Central Java have not complied with the Government Regulation No 4 Year 2014 on Organization and Management of Higher institution in which lecturers must hold at least a master's degree, as also stipulated in Act No 14 Year 2005 on Teachers and Lecturers.

The data also show that 10 institutions in Central Java have adequate minimum number of lecturers but the academic qualification for each study program has not met the government regulation so it is still important to improve the lecturers' competence on Triple Functions of higher institution, particularly in research by using a suitable education and training model.

The lecturers' quality development and improvement is very important to improve the quality of human resources within higher institution. The quality improvement of academic staff is meant to improve their professionalism, in their competence in teaching, doing research, serving the community (Sumantri, 2000). Therefore, it is necessary to develop professional and pedagogical development for the lecturers (Pidarta, 1999:278-284).

Research in higher education is important and vital because it has both academic content and community service. With research, the community's problem can also be solved. With respect to academic content, research is part of scientific development. So, the existence of a College is questionable when there are no research activities. According to Article 2, Chapter 2 of Government Regulation No 12 Year 2014, colleges have a strategic role in terms of the achievement of the goal of higher education. First, they provide the students with academic and professional competence to be able to apply, develop, and enrich science and arts. Second, they provide students with skills to develop and disseminate science and arts, and attempt to apply them to improve the life quality of the community, and enrich the national culture.

A number of issues emerge in Health Colleges in Central Java. Among others are (1) research findings are not yet applied by the community and are replicated so no significant advancement is made, (2) most of the research are literature-based and normative, not empirically-realistically based, and plagiarism is found in many places, (3) there is a lack of good quality human resources and lack of attention from Health College management, (4) lecturers

have low competence for conducting research, in fact they have to give lectures based on their own research. When lecturers only present materials from textbook, they are not different from high school teachers, (5) no research culture is highly adopted so the quality of students' final projects and theses is low, (6) there is a lack of research cooperation between institutions and low level of research publication in national and international journals, and (7) no monitoring and evaluation on research activities as required by Directorate of Higher Education.

Based on the preliminary observation, the low quality of research among Health College lecturers are caused by a number of factors:

- 1) There is lack of attention from Health College management on research issues. Additionally, researchers have low competence. So, even if the management pay high attention to the research, the same condition will emerge because the bad quality of the researchers.
- 2) Research findings are not relevant with the people's needs. When the research cannot provide good contribution to the problem solving, no one will use it.
- 3) Adequate facilities for research activities should be available, including computer, internet, literature and other support facilities.
- 4) Research fund is available (sponsorship, college budget).
- 5) Research culture should be developed in colleges.
- 6) Education and training management is still conventional and it is conducted only to implement the planned activities without any strong monitoring.

Researchers are required to have a number of competences. First, they must be able to relate their topics with the community's actual needs. This is important because any research is approved because of this factor, that is, the researcher's ability to be smart in responding and packaging actual issues into their research proposal. Second, they must be knowledgeable to the topic under investigation. The research topic should not be too idealistic

but it can be completed or unsatisfactory. You should select a topic that you are competent with. Third, they must be able to choose an appropriate methodology. Methodology is like a tool and if researchers do not have good knowledge of methodology, their research findings will be “dry”, even can be wrong. Researchers must know a lot of formula and knowledge to be able to conduct sharp and deep analysis. Fourth, they must have scientific commitment and integrity. They must be honest, telling that the truth is true and vice versa. Many studies are conducted based on imaginary respondents and data. For honest researchers, they will not abuse their research. Fifth, Researchers must be able to a clear and convincing proposal. This is related to the ability to catch the “taste” of the target sponsor. Sixth, researchers must be able to write a clear and convincing report. The report must be well-written, relevant with the topic of the research, not “digressing” and proportional. Finally, researchers must find a sponsor, be able to sell the proposal to the sponsor. This needs a special skill. All weaknesses mentioned above are not idealistic condition and should be avoided by Health College.

Preliminary studies are conducted in ten private higher institutions in Central Java, they are (1) Karya Husada Health College of Semarang, (2) Telogorejo Health College of Semarang, (3) Bhakti Mandala Husada Health College of Slawi Tegal, (4) Widya Husada Health College of Semarang, (5) Elisabeth Health College of Semarang, (6) Harapan Bangsa Health College of Purwokerto, (7) Muhammadiyah Health College of Klaten, (8) Ngudi Waluyo Health College of Semarang, (9) Kusuma Husada Health College of Surakarta, and (10) PKU Muhammadiyah Health College of Surakarta. Based on the interview with Head of Health College and Head of Research and Community Service, it is found that there is no close monitoring and supervision on the implementation of the lecturers’ research proposals, reports, and scientific articles, as a result the research findings are not validated in detail. In addition, not all institutions hold

research training so that the supervision is limited only to the research methodology.

This study is meant to develop a model for a research education and training combined with a mentoring strategy for lecturers of Health Colleges in Central Java and aimed at (1) describing the needs for a research education and training, (2) describing the existing model of a research education and training in Health Colleges, and (3) developing and testing the effectiveness of the proposed model of a research education and training combined with a mentoring strategy for lecturers of Health Colleges.

## METHODS

This study adopts a research and development approach to carry out the research, development and testing a certain product. This study is based on a need analysis and testing the implementation and effectiveness of the product so that the product will be functional and useful for lecturers of Health Colleges in particular and for all lecturers in higher institutions.

The product will be a procedural model, so the research process and development refer to three main steps. First, a preliminary study was conducted, which focuses on reviewing literature relevant to the problems and objectives of the study by using a field survey about the implementation of education and training model to find out the existing model. Second, a development stage was taken, in which the researcher develops a proposed model based on the existing model and its relevance with the expected condition. Third, the researcher made a revision of the proposed product and tested the product.

The quantitative and qualitative data were used in this study. The qualitative data were collected by using observation, interview and documents for the preliminary study to obtain the primary data related to the existing model of research education and training and lecturers’ research activities. The quantitative data were collected for testing the effectiveness of the

proposed model of research education and training ICEM.

The data were classified based on the types and characteristics of the collected data. After the product was tested, the data were analyzed quantitatively to find out the effectiveness of the developed ICEM model.

## RESULTS AND DISCUSSION

The results of the study include a need analysis for a research education and training for lecturers, the quality of the existing model for research education and training, and development and testing of the proposed model for research education and training combined with a mentoring strategy.

### Needs for research education and training

Based on the results of observation, questionnaires and interview to relevant competent parties, including: Head of Health Colleges, lecturers and Research Institutes in 10 Health Colleges in Central Java, the need analysis and the condition of the existing research education and training is described as below:

It is important to provide facilities and infrastructure for research education and training, including rooms supplied with online computers and their supporting softwares, internet network for accessing internet, Health College website with scientific journal portals for publication so the model for research education and training with a mentoring strategy for 10 Health Colleges can be implemented. In addition, instructors for the training should also be improved, including their ability to plan, implement, and evaluate the research education and training, their ability to deliver materials interactively, systematically, in a practically-organized way, and their ability to develop their productivity, working discipline and ethos in the implementation of research education and training. The materials for training should also be presented based on the needs of the participants, in accordance with the topics,

hence helping the lecturers to develop their competence in conducting research activities.

Good planning for research education and training should also be made including structured timetable, distributing assignment to all lecturers to join the training in a number of stages, the plan for training implementation made in a senate meeting, and also made on the basis of actual needs. The budget for research education and training should be made in Revenue and Academic Budget Plan. The research education and training should be implemented in accordance with the schedule based on the academic calendar, as part of lecturers' development. The evaluation to the research education and training should be made on the basis of need and carried out as scheduled in the academic calendar.

### Existing model of research education and training

Based on the analysis on the existing model of research training, a number of issues are described. With respect to determining organizational needs, the instructors of education and training do not have adequate competences required, including their limited ability and skills in delivering materials in an organized way. Instructors do not yet have the ability to develop the research productivity, have low discipline, attitude and work ethos especially in carrying out research activities, and have low quality to plan, implement, and evaluate the activities of research education and training by using the existing model. In addition, the implementation is still based on the budget of education and training from the limited budget of college foundation.

About the learning facilities, the infrastructures and other supporting facilities for the education and training are still limited. Room facilities for the education and training completed with online computers, printers, scanners, LCD projectors, and other softwares for the training are far from sufficient. Internet network, websites for Health Colleges with links to scientific journals are not sufficiently available.

The activities of education and training are not yet scheduled regularly in accordance with the academic calendar. The materials for education and training are not relevant with the participants' needs. The activities of education and training are not oriented toward the improvement of the lecturers' competence. The planning of the programs for education and training are not well-scheduled and are not accessible to all lecturers. The implementation of education and training are not made as scheduled in the academic calendar. The materials for the education and training are not based on the lecturers' needs. Also, the learning strategies have not fully maximized the participants. Evaluation of the education and training are not conducted on the basis of the needs and are not in accordance with the academic calendar. Lecturers do not have adequate knowledge on the research systematic procedures. Finally, after the training, no follow-up activities are conducted and the lecturers are not motivated to write research proposals.

In the existing model of research education and training for Health College lecturers, only pretest, and no posttest is given, therefore, no feedback is obtained. Therefore, this existing model of education and training does not intensively encourage the lecturers' research performance.

### **Developing the proposed model of research education and training**

The proposed model of research education and training combined with a mentoring strategy is described below.

With respect to determining organizational needs, the instructors have the required competence, including the excellent ability and skills in delivering materials in an organized way, the very good ability to develop research productivity, high discipline,

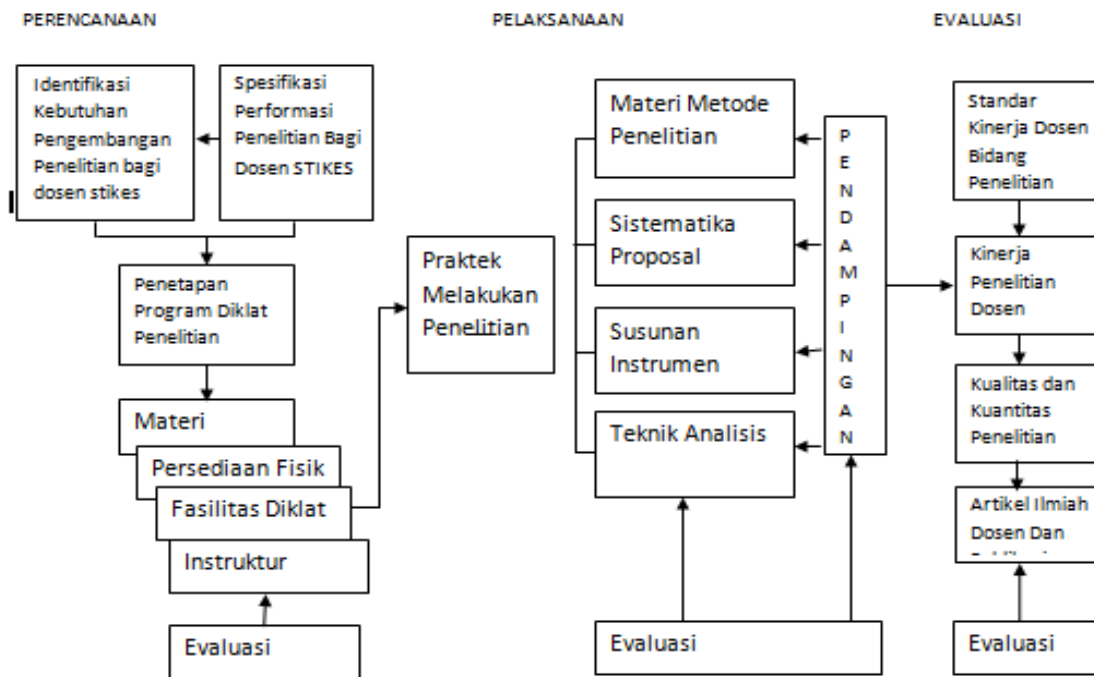
attitude and work ethos especially in carrying out research activities. They are also able to plan, implement and evaluate the activities in the research education and training. Detail implementation of the training is specified in the Budget Academic Plan made regularly every year. With respect to learning needs, the facilities for education and training are fully available, where the rooms for the training are completed with online computers, printers, scanners, LCD projectors, and other supporting softwares. Internet network with hotspot facilities are provided to access the internet and Health College websites with portals for scientific journals are made fully available.

In addition, with determining the objectives, the programs in the proposed model of education and training are scheduled regularly in accordance with the academic calendar. The materials for the activities of education and training are relevant with the needs and the activities for education and training are oriented toward the improvement of the lecturers' competence. About the curriculum, the programs for education and training is structurally scheduled and are accessible to all lecturers.

With the selection and use of learning resources and strategies, the materials for the training are based on the needs. The learning strategies in the education and training have maximized the participants' activities. The evaluation of the education and training is implemented on the basis of the needs and plans in the academic calendar. Lecturers are competent in the systematic research procedures. Finally, there are follow-up activities after the training, so that the lecturers are motivated to write research proposals.

The proposed model of research education and training for Health College lecturers as described above is illustrated in the following figure.

## MODEL DIKLAT EFEKTIF



**Figure 1.** Model of Research education and training for Health College Lecturers

In this proposed model of research education and training, a pretest and posttest are given to the participants. Also, a mentoring strategy is intensively given from the beginning of the proposal preparation, research implementation, and writing research report, until the preparation of research articles.

By developing various activities in utilizing resources and materials of research education and training combined with a mentoring strategy, this model of education and training is expected to be used as an alternative model to develop the lecturers' research activities as part of the improvement of their teaching quality.

### Testing the proposed model of research education and training

The testing is conducted to find out the effectiveness of the proposed ICEM model and is undertaken by (a) limited try-out, including one to one evaluation, small group evaluation, and middle group evaluation, (b) expert validation, including management experts, content experts, textbook design

experts and experts on guidelines for education and training, (c) try-out to large groups, (d) implementation process for the model of research education and training combined with a mentoring strategy for the participants after the training, and (e) validation process.

The limited try-out to the model of research education and training combined with a mentoring strategy and all its related supporting facilities include 3 stages, namely one to one evaluation, small group evaluation and middle group evaluation.

One to one evaluation involves three participants to find out the effectiveness of the proposed model as a hypothetical model of research education and training combined with a mentoring strategy and includes a number of evaluation aspects: (1) determining organizational needs, (2) specification of program implementation, (3) determining learning needs, (4) determining objectives, (5) determining curriculum, (6) implementation of education and training, (7) selection and use of learning resources, (8) selection of learning strategies, and (9) evaluation of the specification

of program implementation. The result of the try-out shows that the mean scores from the pretest is 45 and those of posttest is 76.67 and statistically significant so it can be concluded that the application of the model of education and training combined with a mentoring strategy is found to be effective.

The small group evaluation involves 5 respondents. The mean scores from the pretest is 55.5 and after the implementation of the model of research education and training combined with a mentoring strategy, the mean scores from the posttest is 78.5, which is higher than that of the pretest. Because the difference of the two mean score is statistically significant, the application of the model of education and training ICEM combined with a mentoring strategy is found to be effective. Middle-scale group evaluation involves 10 participants. The mean scores from the pretest is 48.5 and the mean scores from the posttest is 77.5. In the large-scale try out, the mean scores from the pretest is 67 and the mean scores from the posttest is 88.1. Because the difference of the two mean score is statistically significant, the application of the model of education and training ICEM combined with a mentoring strategy is found to be effective (ICEM).

## CONCLUSION

The model of education and training ICEM combined with a mentoring strategy for Health College lecturers is designed to improve the lecturers' ability in conducting stages of research activities from the preparation of the proposal, research implementation, preparing the research report and writing research articles. This model of education and training consists of planning, implementation and evaluation of the education and training. The results of the try-out

shows that the model of research education and training combined with a mentoring strategy is found to be effective. It is suggested that Health Colleges in Central Java can use this model of education and training as one of the alternative models for training research activities for lecturers in their institutions.

## REFERENCES

- Anwar, Idochi. 2003. *Administrasi Pendidikan and Manajemen Biaya Pendidikan*, Bandung: Alfabeta.
- Depdiknas. 2004. *Visi and strategi pembangunan pendidikan untuk tahun 2020 tuntutan terhadap kualitas*. Ceramah menteri pendidikan and kebudayaan pada Konvensi Nasional Pendidikan Indonesia III. Ujungpandang, 4-7 Maret 1996. Jakarta : Direktorat Pendidikan Tinggi.
- Peraturan Pemerintah No 4 Tahun 2014 tentang Penyelenggaraan Perguruan Tinggi and Pengelolaan Perguruan Tinggi
- Pidarta, Made. 2000. Etos kerja lecturers, *Jurnal Ilmu Pendidikan*. Jilid 6 No 4: 278-284
- Prasetyo, Teguh. 2000. Praktek sumber daya manusia yang progresif upaya membangun keunggulan bersaing. *Jurnal Ekonomi and Manajemen*. Vol 1, No. 1: 53-67
- Sufyarma. 2003. *Manajemen Pendidikan Bandung*: Alfabeta.
- Sumantri, S. 2000. *Pelatihan and Pengembangan Sumber Daya Manusia*, Bandung: Fakultas Psikologi Unpad.
- Syarief, Djohan. 2013. Strategi Pembinaan and Pengembangan SDM Perguruan Tinggi dalam meningkatkan Mutu Pendidikan. *Jurnal Ekonomi STEI Vol. XII No 1*: 1-6
- Tilaar, H.A.R. 1997. *Pengembangan Sumber Daya Manusia dalam Era Globalisasi*. Jakarta: Gramedia.
- UU No 14 Tahun 2005 tentang Guru and Lecturers.
- Uwes, Sanusi. 1999. *Manajemen Pengembangan Mutu Lecturers*. Jakarta: Logos Wacana Ilmu.