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ICSMTR 2015

*Increasing Statistical and Mathematical Literacy through
High Quality Teaching and Research*

October 9-10, 2015

Makassar, South Sulawesi, Indonesia

STATISTICS DEPARTMENT AND MATHEMATICS DEPARTMENT
STATE UNIVERSITY OF MAKASSAR
INDONESIA

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Department
Faculty of Mathematics and Natural Sciences
State University of Makassar
Indonesia**

**ICSMTR 2015: INCREASING STATISTICAL AND MATHEMATICAL
LITERACY THROUGH HIGH QUALITY TEACHING
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WELCOME SPEECH

Forewords from the Head of Committee

Bismillahirrahmanirrahim

Assalamu'alaikum Warahmatullahi Wabarakatuh

First, I want to give our welcome to all the delegates, speakers, and participants coming today. Welcome to the State University of Makassar, UNM.

This International Conference on Statistics, Mathematics, Teaching, and Research (ICSMTR) 2015 is primarily organized by Statistics Department and Mathematics Department, Faculty of Mathematics and Sciences, State University of Makassar. It is conducted in two days from 9th to 10th October 2015. It involves one keynote speaker, Governor of South Sulawesi, eight invited speakers, and approximately 80 parallel speakers. Besides, this conference also invites delegates from twelve LPTKs (Institute of Teacher Education) to conduct a scientific meeting reviewing KKNi for Mathematics Education curriculum in higher education.

Ladies and gentlemen, as I previously said, the conference proudly invites eight invited speakers coming from several countries. Therefore, on behalf of the committee members, I would like to express my sincere thanks to the invited speakers, specifically:

1. Professor Kerrie Mengersen (Queensland University of Technology, Australia)
2. Professor Shigehiko Kanaya (Nara Institute of Science and Technology, Japan)
3. Professor Ahmad A. Bahnassy (Faculty of Medicine, King Fahd Medical City, Saudi Arabia)
4. Professor I Gusti Ngurah Agung (State University of Makassar, Indonesia)
5. Professor Hamzah Upu (State University of Makassar, Indonesia)
6. Professor Muhammad Arif Tiro (State University of Makassar, Indonesia)
7. Professor Mohd. Salmi Md Noorani (Universiti Kebangsaan Malaysia, Malaysia)
8. Dr. Darfiana Nur (Flinders University, Australia)

Next, it is my privilege to thank all organizing committee members for their contributions to the success of this event. I would like also to apologize for all of you if there are some inconvenience during this conference.

Finally, I would like to thank to the speakers and participants. I wish you all have two fruitful days in Makassar.

Thank you very much for the attention.

Wassalamu'alaikum Warahmatullahi Wabarakatuh

Suwardi Annas, Ph.D.

Head of Committee



**Forewords from the Dean of Mathematics and Sciences Faculty,
State University of Makassar**

*Bismillahirrahmanirrahim
Assalamu'alaikum Warahmatullahi Wabarakatuh*

Alhamdulillah, all praises be to the Almighty God, Allah subhanahu wata'ala.

I would like to say that I welcome and highly appreciate any attempts of both the Statistics Department and Mathematics Department to organize this International Conference on Statistics, Mathematics, Teaching, and Research in the State University of Makassar. I do hope that this conference would be a great chance for you as researchers or scholars in enhancing your research quality within a framework of evolving sciences. May Allah *subhanahu wata'ala* opens our mind, widens our view, strengthens our soul, and blesses our conference that it will be useful as we are hoping.

At last, as the Dean of the Faculty of Mathematics and Natural Sciences, State University of Makassar (FMIPA UNM), I am sure that there are some weaknesses and mistakes in performing this conference. I therefore do apologize to you and may Allah *subhanahu wata'ala* forgive all of us.

Wassalamu'alaikum Warahmatullahi Wabarakatuh

Professor Abdul Rahman

Dean of Faculty of Mathematics and Sciences
State University of Makassar



Forewords from Rector of UNM

*Bismillahirrahmanirrahim
Assalamu'alaikum Warahmatullahi Wabarakatuh*

Your respectable, the high officials of State University of Makassar, the committee, the speakers, and the participants of conference.

It gives me great pleasure to extend to you all a very warm welcome, especially to our keynote speakers who have accepted our invitation to convene the conference. ICSMTR is one of our educational activities that covers a wide range of very interesting items relating to statistics, mathematics, teaching and research.

By taking participation of this conference, it is highly expected to all of us to share our research findings to society and continuously develop new ideas and knowledge. Those things are two significant steps in improving the quality of nations around the world, increasing our familiarity to each other, and even avoiding underdevelopment.

Furthermore, I would like to take this opportunity to express my heartfelt gratitude to all organizing committee especially for Statistics Department and Mathematics Department of Faculty Mathematics and Natural Sciences that primarily hosts this conference.

Finally, this is a great time for me to declare the official opening of the International Conference on Statistics, Mathematics, Teaching, and Research (ICSMTR) 2015.

I wish you a very enjoyable stay in Makassar
I warmly welcome you again, as in Makassar, we say “*salamakki battu ri mangkasara*”

Wassalamu'alaikum Warahmatullahi Wabarakatuh.

Prof. Dr. H. Arismunandar, M.Pd.

Rector of State University of Makassar



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THE MODEL DEVELOPMENT OF INTERPROFESSIONAL EDUCATION (IPE) IN THE FACULTY OF HEALTH SCIENCES (FIK) ISLAMIC STATE UNIVERSITY (UIN) ALAUDDIN MAKASSAR

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ABSTRACT

Efforts to improve the quality of health care continues to be done and we need a system of collaboration between healthcare professionals or interprofessional collaboration (IPC). To achieve this goal, the interprofessional education (IPE) is very important to prepare for a more professional health workers. IPE occurs when some health professions to learn together, and learn from other health professionals and understand their respective roles with the goal of increasing the capability of collaboration in health care. This study uses a mixed method design is quantitative and qualitative phases. Quantitative designs are used to determine the perception and readiness of students and faculty to the application of IPE. Qualitative design is used to obtain data on IPE models that can be applied. This study uses the approach of research and development (Research and Development / R & D). This research describes the analysis of perception and readiness of students and professors FIK UIN Alauddin Makassar, as well as the technical implementation of the IPE get a model that can be recommended to be applied in FIK UIN Alauddin Makassar. The developed model can also be a reference material for medical colleges who wish to apply learning IPE.

Keywords: interprofessional education, IPE, collaborative learning

1. INTRODUCTION

The relationship between health personnel both nurses, doctors, midwives, pharmacists and public health has been going on for a long time (Nursalam and Ferry, 2012). This relationship must be marked with the developments towards a more professional relationship. To improve the quality of health care, we need a system of collaboration between healthcare professionals or interprofessional collaboration (IPC). Lack of IPC can have a negative impact on health services, such as the lack of communication between health professionals can lead to a decrease in the quality of patient care and increase the number of medical errors. Lack of collaboration through effective communication also improves occupational stress that can lead to poor job satisfaction and fatigue.



A change of paradigm becomes a patient-oriented health care has long been echoed in quality improvement. Patient as the focus of the provision of health care requires solutions and breakthroughs that make a better quality of service. Collaboration among health professionals is an effort to improve the quality of health services. The ability to collaborate require the establishment of early namely through education (A'la, 2010).

One of the efforts to realize the collaboration among health professionals is to introduce the practice of collaboration through education (WHO, 2010). A grand design of the character formation of collaborative orinterprofessional collaboration (IPC) is in a form of education in the form of interprofessional education.

Interprofessional education (IPE) occurs when two or more health professions learn together, learn from other health professionals, and study the role of each health profession to improve collaboration and quality of health services (CAIPE, 2002).

Interprofessional education is one of the integrated educational concept to increase collaboration capabilities that has the objective to improve the quality of health services. With IPE, it is expected to reduce problems in the health service as described previously.

IPE which has been designed by WHO, is an instructional design for health professions education, at UIN Alauddin Makassar contained Faculty of Health Sciences, with the integration of science Islam has four health professions education programs, namely: 1) nursing, 2) midwifery, 3) pharmaceuticals, and 4) public health, so on that basis, the IPE can be a learning that can be applied, in order to create graduates who are ready to collaborate in order to improve the quality of health services.

Based on the description above, conducted research for the development of models of IPE in the Faculty of Health Sciences UIN Alauddin Makassar.

2. METHOD

This study uses a mixed method design is quantitative and qualitative phases. Quantitative designs are used to determine the perception and readiness of students and lecturer to the application of IPE. This type of research is descriptive analysis with cross sectional approach means that the measurement of variable is only done once in a while. Qualitative design is used to obtain data on IPE models that can be applied. Stage of development model used is adopting the Plomp model's (1997) consists of



five stages: 1) the initial assessment phase, 2) design phase, 3) Phase of realization / construction, 4) Phase of test, evaluation, and revision. 5) Implementation. The approach used in this research is a quantitative approach and qualitative approach with methods of research and development (Research and Development / R & D).

This research was conducted at the Faculty of Health Sciences UIN Alauddin Makassar, the population is students and lecturer of the Faculty of Health Sciences UIN Alauddin Makassar spread over four majors. According to data that researchers get from the Division of Administration at FIK UIN Alauddin Makassar there are 1,426 active students. Then there are 49 permanent lecturer spread over four majors. The sampling technique used in this study on the quantitative stage students using quota sampling taken from each department at FIK UIN Alauddin Makassar. Sampling using a ten percent quota of students in each department. While the sampling technique used in the quantitative stage of lecturers using purposive sampling taken from each department at FIK UIN Alauddin Makassar. Sampling refers to the criteria for inclusion and exclusion criteria set by the researcher.

Then the sampling technique used in qualitative stages using purposive sampling taken from each department at FIK UIN Alauddin Makassar. Sampling refers to the criteria that are key informants and strategic or policy makers within the scope of FIK UIN Alauddin Makassar. As we know that there are no rules of the number of samples in qualitative research. Determination of the number of samples based on the needs researcher to dig up information obtained no new information. The key informant can explain and discuss the development of IPE in FIK UIN Alauddin Makassar.

3. RESULT AND DISCUSSION

3.1 Result of Quantitative Research

3.1.1 Perceptions of IPE

a. Student perceptions of the IPE

The perception of students of the Faculty of Health Sciences (FIK) UIN Alauddin Makassar to IPE described using a percentage formula and classified into good, moderate and bad.

Table 1. Frequency Distribution the Perception of student at FIK UIN Alauddin Makassar to IPE in February 2015 (n = 143)

| Category | Total (f) | Percentage (%) |
|--------------|------------|----------------|
| Good | 132 | 92.3 |
| Moderate | 11 | 7.7 |
| Bad | 0 | 0 |
| Total | 143 | 100 |

Source: Primary data, 2015

Table 1 shows that the majority of students Nikken UIN Alauddin Makassar have the perception of the IPE in good category (92.3%), 7.7% in the medium category and no student with a bad perception.

b. Lecturer perceptions of the IPE

Table 2. Frequency distribution the Perception of Lecturer at FIK UIN Alauddin Makassar to IPE in February 2015 (n = 22)

| Category | Total (f) | Percentage (%) |
|--------------|-----------|----------------|
| Good | 20 | 90.9 |
| Moderate | 2 | 9.1 |
| Bad | 0 | 0 |
| Total | 22 | 100 |

Source: Primary data, 2015

Table 2 shows that the lecturers of FIK UIN Alauddin Makassar have the perception of the IPE in good category (90.9%), 9.1% in the medium category and there are no lecturers with bad perception.

3.1.2 Readiness of IPE

a. Student readiness of the IPE

Table 3. Frequency Distribution the Readiness of students at FIK UIN Alauddin Makassar to IPE in February 2015 (n = 143)

| Category | Total (f) | Percentage (%) |
|--------------|------------|----------------|
| Good | 132 | 92.3 |
| Moderate | 11 | 7.7 |
| Bad | 0 | 0 |
| Total | 143 | 100 |

Source: Primary data, 2015



Table 3 shows that the majority of students of UIN Alauddin Makassar has the readiness to IPE in good category (92.3%), 7.7% in the medium category and there are no students with poor readiness.

b. Student readiness of the IPE

Table 4. Frequency distribution the Readiness of Lecturer at FIK UIN Alauddin Makassar to IPE in February 2015 (n = 22)

| Category | Total (f) | Percentage (%) |
|--------------|-----------|----------------|
| Good | 22 | 100 |
| Moderate | 0 | 0 |
| Bad | 0 | 0 |
| Total | 22 | 100 |

Source: Primary data, 2015

Table 4 shows that all of the lecturer of FIK UIN Alauddin Makassar has the readiness of the IPE in both categories (100%).

3.1.3 Model development of Interprofessional Education (IPE) at the Faculty of Health Sciences UIN Alauddin Makassar

In the process of the development of this model adopted from theory Plomp (1997) on the stage of development of the model consists of five phases: the initial assessment, planning stage, the stage of realization / construction, stage of test / evaluation / revision and implementation phase. In this research, the development of a model made up to three stages namely initial assesment stage is done by analyzing perception and readiness of students and lecturer of the Interprofessional Education (IPE) by using instruments Interdisciplinary Education Perception Scale (IEPS) and Readiness Interprofessional Learning Scale (RIPLS). Then the planning stages used Focused Group Discussion (FGD) method to draft a model IPE at the Faculty of Health Sciences UIN Alauddin Makassar involving key informants from both students and lecturer. The last stage of this research is the realization stage / construction models, at this stage, based on the initial assessment and planning, the researchers made a model of IPE in FIK UIN Alauddin Makassar. The model can be described by the following figure:

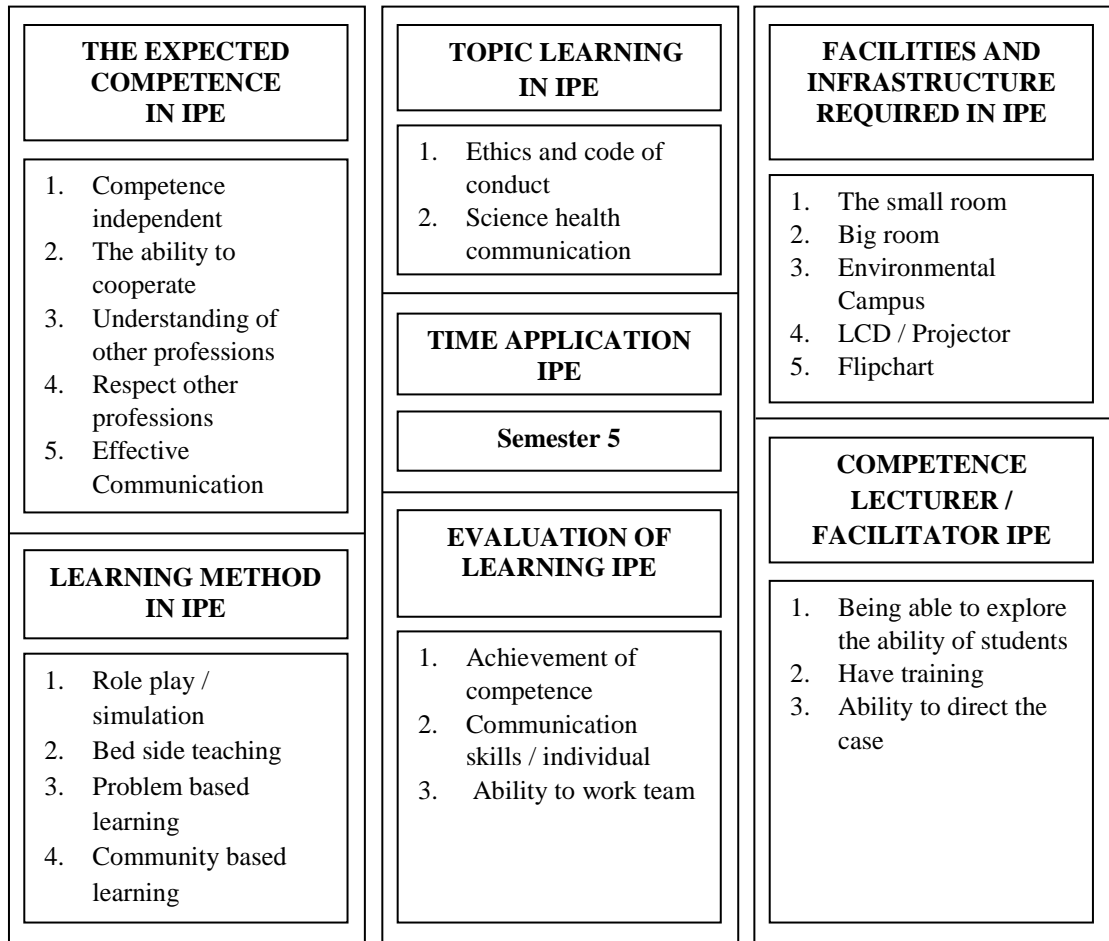


Figure 1. IPE (Interprofessional Education) model at the Faculty of Health Sciences UIN Alauddin Makassar

4. CONCLUSION AND ACKNOWLEDGEMENT

From the results of research on development model of Interprofessional Education (IPE) at the Faculty of Health Sciences UIN Alauddin Makassar can be summarized as follows:

1. The majority of students of the Faculty of Health Sciences (FIK) UIN Alauddin Makassar has a good perception of the IPE with the percentage of 92.3% and no perception of poor value. Then the majority of lecturers also have a good perception of the IPE with the percentage of 90.9%, and there is no perception of poor value.



2. Readiness of student FIK UIN Alauddin Makassar to learning the majority IPE well with the percentage of 92.3%, with no bad category. Then the readiness of lecturers in FIK UIN Alauddin Makassar to facilitate learning with all good IPE the percentage of 100% with no category average and poor.
3. IPE application models produced recommendations in FIK UIN Alauddin Makassar with some implementations themes namely; 1) the expected competencies in IPE, 2) learning methods in IPE, 3) learning topics in IPE, 4) Time to application of IPE, 5) Evaluation of learning IPE, 6) Facilities and infrastructure are needed in IPE, and 7) Competence lecturer / facilitator IPE.

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