

# Interprofessional Education A Study of Curriculum Development

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# Interprofessional Education: A Study of Curriculum Development and Implementation in Learning Process in Applied Bachelor Study Program in Health Polytechnic of Tanjungkarang

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## Abstract

One of the global problems in the health system is health service fragmented and overlaps among the health profession. This phenomenon occurs due to a lack of communication and cooperation among health personnel so that the health service is not effective and efficient. The transformation of health service is needed through a comprehensive and collaborative health service, which focuses on the client. Inter collaboration capability cannot be formed spontaneously, but need training since they are on campus. So that interprofessional education (IPE) should be integrated into the curriculum and the learning process should give meaningful learning experiences that can make students from different professions interact and cooperate. This study is a descriptive study that aims to describe curriculum development and the implementation of IPE in four applied bachelor study programs in Poltekkes Tanjungkarang. In curriculum development activity it was obtained the agreement of IPE learning was implemented through a theoretical lecture with one credit inserted in a related course, one credit of practicum, and three credits of clinical practicum in community. Curriculum development and IPE learning development in Poltekkes Tanjungkarang was implemented based on the commitment and cooperation of all parties. The implementation of IPE learning using Team-Based Learning (TBL) and evaluation with a website-based survey.

**Keywords:** interprofessional education (IPE), curriculum development

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## 1. Introduction

One of global problems in health service in many countries is the health service not optimally integrated. Health services are often fragmented, and overlapping services occur due to lack of communication and cooperation among the health workers. The complexity of health problems requires the optimalization and transformation in the health care system that is the formation of a comprehensive health care system, includes promotive, preventive, curative and rehabilitative aspects with a "people-centered care" approach [1]. Some research shows that health services will be more effective and efficient if it is organized with a interprofessional collaborative (IPC) practice. IPC is a comprehensive service provided by two or more health workers from different professional backgrounds, through collaboration with patients, families and communities to provide optimal health services in various situations. The benefits of collaborative practice are reducing the incidence of disease complications, length of stay, number of hospital visits, malpractice, treatment costs and mortality so that it can reduce health costs and increase patient satisfaction [2]. The results of the study mentioned that IPE learning through interprofessional education workshops was able to improve attitudes towards the importance of collaborative learning, teamwork and communication in conducting health services.

Collaborative health service systems can not be established without initiation. This can be realized if health workers have been trained to carry out collaboration interprofessional service since they having education (pre-service). Interprofessional education is a form of education that occurs when students from two or more health professions learn together, from, and regarding one another to realize effective collaboration and improve health services [3]. Interprofessional education (IPE) aims to foster communication between professions, mutual respect and cooperation among health workers. Emphasized the importance of learning experiences for prospective health workers to learn to interact and work together with other professions, thus forming interprofessional collaboration competencies. Interprofessional education from an early stage of education introduces and accustoms prospective health professionals to interact together and collaborate, in line with the development of professional and technical competencies. Interprofessional education is expected to be able to produce health professions with good knowledge, attitudes, and skills in dealing with complex and dynamic health problems in a dynamic health problem in a collaborative team.

Health Polytechnic of Tanjungkarang started to develop IPE since 2017 with the full support of the BPPSDM Center for Health Personnel Education at the Ministry of

<sup>1</sup> Health. The development of the IPE began with the formation of the Health Professional Education Development Unit (UP3K) which has task to develop learning programs, including IPE. In order to provide meaningful learning experiences about IPE that can make students from different profession interact and cooperate each other, we decide to deliver the concept of IPE using Team Based Learning (TBL) method. There is one of active learning method that can make positive interdependence among the students. It is not only give many chances to interprofession students develop their communication and cooperation skills but also make interprofession students learn each other role [4]. The purpose of this study is to provide an overview of curriculum development and the application of IPE in Health Polytechnic of Tanjungkarang.

## 2. Methods and Equipment

### 2.1. Methods

This study was using a descriptive method with process approaches on curriculum development and implementation of IPE through TBL methods in four applied bachelor study programs in Health Polytechnic of Tanjungkarang, namely Nursing, Midwifery, Environmental Sanitation, and Medical Laboratory Engineering in September 2019. We arranged five times TBL sessions for each module of IPE. Total students from four applied bachelor study programs are 179 students. They were divided into 26 teams and every team consist of six-seven students that represent each study program. At the end of TBL session, we conducted a learning process evaluation about implementation of IPE using TBL method. Presentation refers with observe to several references including curriculum institution, guidelines curriculum development, policies and scientific journals relevant to IPE.

### 2.2. Equipment

The instrument used to evaluate learning process was held by using website based survey application.

### <sup>1</sup> 3. Results

IPE development in Health Polytechnic of Tanjungkarang is carried out together in the form of collaboration between leader institution, lecturers, students, related units and stakeholders as follows:

#### 3.1. Policy of leader and joint commitment

IPE learning can take place after the policy of Poltekkes Tanjungkarang Director began to be initiated in five applied bachelor study programs. The implementation of interprofessional education require policies from leaders and the existence of a clear commitment from all elements of the leadership involved in interprofessional education.

#### 3.2. Curriculum development

Following with National Standart of Ministry Research and Technology [5] states "Curriculum is aset of plans and arrangements regarding graduate learning outcomes, study materials, processes and assessments that are used as guidelines for organizing study programs". The curriculum must be constantly updated in accordance with the development of science and technology as outlined in the achievement of graduate learning. Curriculum development is an effort so that plans on the objectives, content and study materials as well as the methods used to guide the implementation of activities in accordance with the progress of science and technology and the user community needs.

Curriculum development in the Health Polytechnic of Tanjungkarang refers to curriculum development guidelines. The mechanism is: 1. Compilation of curriculum structure; 2. Determination of graduate profile; 3. Determination of Learning Outcomes consisting of elements of attitudes, knowledge, general skills, and special skills; 4. Determination of Learning Load/credits; 5. Preparation of Learning Plans [6].

Poltekkes Tanjungkarang integrates IPE into the curriculum by including IPE's core competencies in the Graduate Learning Achievement. IPE core competencies according to Barr and A National Interprofessional Competency Framework by Canadian Interprofessional Health Collaborative [1] there are five competencies, namely: 1). Interprofession communication; 2). Interprofession collaboration; 3). Values and Ethics; 4). Roles and responsibilities of the health profession; 5). Health services that are centered on individuals, families and communities. Following the curriculum framework of the consortium

<sup>1</sup> results of the Ministry of Research and Technology and Ministry of Health of the Republic of Indonesia IPE competencies are included in the learning achievements of specific knowledge and skills [7].

The results of the review and identification of communal competencies by the Quality Assurance Unit, Learning Development Centre Unit (UP3K) and major/study programs stimulate that IPE learning is carried out with the theory of one SKS learning strategy inserted in related subjects, one SKS Practicum and Inter-Collaboration Field Work Practice (IPC) of three credits (see Table 1).

TABLE 1: Competencies Illustration, Achievement of Interprofessional Learning and Inserting Subjects in Applied Bachelor Study Program of Polytechnic of Tanjungkarang

Competency Area	Learning achievement		Applied Bachelor	Course
	Knowledge	Special skill	study program	
Interprofessional Communication	Explain the organizational system and information communication to individuals, families, communities and team member clearly and if possible prevent discipline-specific terminology	2. Implement effective communication among health professionals in managing health problems. 3. Able to communicate with team members to clarify the responsibilities of each team member in managing individual, family, and community health 4. Can listed	•Nursing Tanjungkarang  •Midwifery Tanjungkarang •Midwifery Metro •Environmet sanitation •Medical Laboratory Enignering	<sup>1</sup> •Nursing communication  •Community Midwifery Service •Midwifery communication •Community Empowerment •Communication
Team work	<sup>1</sup> 1. Apply the principles of management and development of the interproessional team including leadership 2. Able to integrate knowledge and experience from other professions in accordance with the conditions of patients and public health services.	Able to work cooperatively with health services providers, patients, communities who receive health services and other parties who contribute to disease prevention and health services.	•Nursing Tanjungkarang •Midwifery Tanjungkarang  •Midwifery Metr •Environmet sanitation •Medical Laboratory Enignering	•Nursing management •Community Midwifery Service  •Community Midwifery Service •Community Service Program •Profession ethic

Competency Area	Learning achievement	Applied Bachelor	Course
	Knowledge	Special skill	study program
<b>Ethic and values</b>	Applying the principle of patient safety to collaboration-based health services	1. Implementing competency-based health services by considering social culture 2. Able to work in an interprofessional team by applying the principles of culture, values, role, responsibilities, expertise mutual trust and can be accounted for/from other health professional	•Nursing Tanjungkarang •Midwifery Tanjungkarang •Midwifery Metro Tanjungkarang •Environmet sanitation •Medical Laboratory Enignering
<b>Role and responsibility of health professional</b>	Explain the principle of teamwork in a patient-centered and community-focused context.	1. Applying the values and principles the relationship of team dynamics so that they can play an effective role in planning and providing services centered safety, efficiently, effective, and fairly 2. Being able to engage in professional development and ongoing interpretation improves team performance.	•Nursing management Tanjungkarang •Community midwifery Tanjungkarang •Community midwifery Metro Tanjungkarang •Environmet sanitation •Medical Laboratory Enignering
<b>Health services centered on individuals, families and communities</b>	Explain the principle of teamwork in a patient-centered and community-focused context.	1. Applying the principles of the individual, family and community health approach which includes planning, implementing and evaluating the inter-profession team's health-based health program	•Nursing Tanjungkarang •Midwifery Tanjungkarang •Midwifery Metro Tanjungkarang •Environmet sanitation •Medical Laboratory Enignering

### 3.3. Implementing IPE learning

IPE learning at Polytechnic of Tanjungkarang was carried out in three stages of Miller [1] as follows:

#### a. Step of Exposure

At this stage it is an introduction stage where students begin to reflect on themselves through individual experiences in learning IPE. In the Polytechnic of Tanjungkarang, the



<sup>1</sup> form of exposure to IPE to students was carried out in the activities of introducing new student study programs and project activities to equip theory learning in class.

#### b. Step of involvement

The involvement of students together with friends from other professions in IPE learning was carried out in practical learning. The method in this learning uses a combination of active learning (blended learning) such as assignments, simulations, case studies and role play. In these learning students can develop the ability of their personnel in management and conflict resolution.

#### c. Step of competency completion

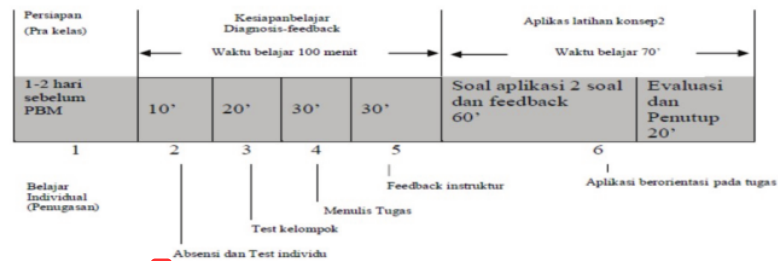
It is a stage of consolidation in a real situation, where students can integrate and apply their professional and interprofessional abilities in the collaborative street intership activities.

### 3.4. Learning methods

Currently, there has been a fundamental change in learning methods, which initially focused more on lecturers/instructors (teacher-centered) to focus on students (student-centered). The application of learning methods with a student-centered approach requires students to be more active in the learning process and get used to learning and cooperating in small groups so as to achieve learning goals and obtain longer knowledge retention.

In IPE practicum learning at the Polytechnic of Tanjungkarang using the Team-Based Learning (TBL) learning method which is one of the active learning methods where learning has four characteristics including: 1) Emphasis on the learning process not on the delivery of information by the instructor. TBL develops students' analytical and critical thinking on the topics discussed. 2) Students not only listen to passively, but actively work on something related to lecture material. 3) Emphasis on the exploration of values and attitudes regarding the subject matter. More students are required to think critically, analyze and evaluate. 4) Fast feedback on the learning process [4]. TBL learning allocates practicum time that is 5 X 170 minutes/face to face with the division of time as follows which one as (see Figure 1).





**Figure 1:** IPE learning sequence with TBL design

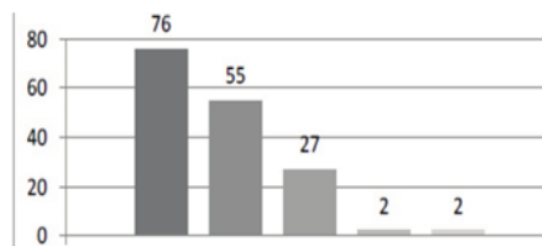
### 3.5. Learning resources

UP3K together with the advanced IPE team and IPE facilitators have developed the IPE learning resources in the form of an interprofessional module compiled together with the TBL approach.

### 3.6. Support from management including infrastructure: large classes and audio-visual equipment, logistical, financial and administrative support

### 3.7. Learning Evaluation

There are two types of evaluations in the IPE learning: process and outcome evaluations. Process evaluation is intended to improve the quality of the curriculum and the implementation of educational programs, while evaluating the results of knowing the achievement of student competencies. Also, the results of a survey of TBL learning trials in IPE debriefing activities at the Polytechnic of Tanjungkarang (see Figure 2). while the evaluation of learning outcomes is focused on the success of students in interprofessional learning. The assessment aspect refers to the achievement of the interprofessional competency domain



**Figure 2:** Survey results of tbi implementation in IPE learning

<sup>1</sup> The results of a survey of 163 from 179 students showed the majority of students rated the TBL method 47 percent very well applied in IPE learning, 34 percent good, 17 percent enough, 1 percent less and 1percent very less. Qualitatively the majority of students felt happy following IPE learning because study with colleagues from different professions.

#### 4. Discussion

Applied IPE in the study program or faculty are need leader roles and delivering interprofessional in curriculum. each study program/faculty member must be prepared to face the challenge of this curricular innovation. Tanjungkarang Health Politeknik has five program study to pilot development curriculum for IPE. IPE in Growing a successful IPE program requires leadership and "top-down administrative support. All study programs/faculty participating in this project support and participating in applied IPE [9]

Developing a curriculum in the Polytechnic of Tanjungkarang, it refers to the national standard Ministry Research and Technology, education standards and the competency standards of each profession. Furthermore, these standards are interpreted by each educational institution into a defined and valid curriculum. The curriculum is designed in such a way to enable students to achieve the established competencies. The Use of an outcomes-based design has been recommended in the building of successful faculty development programs aimed at promoting interprofessional collaboration [9]. In the development of the curriculum, the competencies of the five IPE domains were added so that they were explicit as the Achievement of Graduates Learning in the curriculum of the applied bachelor study program in the Health Polytechnic of Tanjungkarang. Inserting IPE competencies and placing IPE internship courses at one time of learning is a quite difficult challenge. This is a natural condition considering the development of each profession is also quite different. According to the biggest challenges in implementing IPE include substance, policy and technical [8]. Substance aspects that include perceptions and collaborative culture among healthcare professionals. Besides the technical aspects of the implementation of education is also a challenge in the application of interprofessional education [2].

IPE learning strategies and methods are also well prepared, including the media and learning resources. There was no one perfect method, the selection of teaching methods needs to be adjusted to the competencies to be achieved and the teaching material delivered is also the needs of students. New learning that can attract

<sup>1</sup> the attention of students and trigger innovations from teaching staff. The principle of choosing an IPE learning method is to ensure that with this method students get as much opportunity as possible to learn and develop communication skills, cooperation, mutual respect and mutual trust in safe and supportive learning situations, through observation, hands-on training, team interaction and giving feedback by teaching staff [10]. Delivering all IPE modules using TBL method can encourage the spirit of IPE; collaboration, team interaction and so on. Health education institutions also need to prepare learning resources that contain all IPE topics that enable students to learn independently and can direct students to be able to complete the ability to collaborate and work in teams.

In the implementation of IPE learning there are several technical obstacles that must be anticipated, including the need for facilities and infrastructure as well as budgeting. IPE learning involves a large number of students, so that in the process of activities requires large classes and other facilities such as loudspeakers and AVA that is appropriate. Besides the learning schedule is also prepared because each meeting involves many health professions that are not easy in setting the schedule.

Lecturers as facilitators in IPE learning also need to pay attention to their preparation before the activity starts, including preparation for module, Readiness Assurance Test (RAT) and cases for Application Exercise. One of the keys to the success of the IPE learning model is the facilitator who is reliable and skilled in carrying out a series of IPE learning processes both in the classroom, practicum and clinical practice area. Facilitators' perceptions and readiness need to be prepared through training, workshops / dissemination and other capacity building activities. Another thing to note is the policy and authority given by the education management and the function of other supporting facilities and infrastructure [1].

The evaluation of IPE learning in accordance with education standards is carried out while still referring to the principles set out in the Guidelines for the Preparation of Higher Education Curriculum which are educative, authentic, objective, accountable and transparent. The evaluation of IPE learning can be done systematically using various evaluation frameworks, one of which is Kirkpatrick's evaluation framework consists of four evaluation levels ranging from reaction, learning, behavior and results. Reaction level assesses the perceptions and satisfaction of students, lecturers, and others about the education program; learning level evaluates the achievement of students competencies, one of which is through the acquisition of students' grades and graduation rates. The third level assesses the change in behavior of students and graduates in the

<sup>1</sup> actual workplace, while the last level identifies the impacts produced and felt by the community as a result of IPE learning in the community.

## 5. Conclusion

IPE curriculum development and learning proses in Polytechnic of Tanjungkarang is carried out on the commitment, cooperation and participation of all parties involved. IPE implementation requires curriculum development and teaching and learning methods, and learning outcomes evaluation of educational programs. IPE learning with TBL is focused on active learning which focuses on increasing interprofessional competence, preparing students for collaborative practice and problem solving skills in community health services. TBL is one of learning methods that can be used in interprofessional education involving hundreds of students which can foster a meaningful collaborative learning experiences.

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## Conflict of Interest

The authors have no conflict of interest to declare.

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