

Basic Science for Sustainable Marine Development

PROCEEDING

INTERNATIONAL SEMINAR 2015

Ambon, 3-4 June 2015

Organized by
Faculty of Mathematics and Natural Sciences
Pattimura University



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1st International Seminar of Basic Science, FMIPA Unpatti - Ambon
June, 3rd – 4th 2015

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Welcoming Address by The Organizing Committee

The honorable, the rector of Pattimura University

The honorable, the vice rector of academic affair, Pattimura University

The honorable, the vice rector of administration and financial affair, Pattimura University

The honorable, the vice rector of planning, cooperation and information affair, Pattimura University

The honorable, all the deans in Pattimura University

The honorable, the key note speakers and other guests.

We have to thank The Almighty God for the blessings that allow this International seminar can be held today. This is the first seminar about MIPA Science in which the Faculty of MIPA Pattimura University becomes the host. The seminar under the title Basic Science for Sustainable Marine Development will be carried out on 3 June 2015 at Rectorate Building, the second floor. There are 250 participants from lecturers, research institute, students, and also there are 34 papers will be presented.

This International seminar is supported by the amazing people who always give financial as well as moral supports. My special thanks refer to the rector of Pattimura University, Prof. Dr. Thomas Pentury, M.Si, and the Dean of MIPA Faculty, Prof. Dr. Pieter Kakissina, M. Si. I also would like to express my deepest gratitude to Dr. Kotaro Ichikawa, the director of CSEAS Kyoto University, Prof. Bohari M. Yamin, University of Kebangsaan Malaysia, Prof. Dr. Budi Nurani Ruchjana (Prisident of Indonesian Mathematical Society/Indo-MS), Dr. Ir. A. Syailatua, M.Sc (Director of LIPI Ambon), and Hendry Ishak Elim, PhD as the key note speakers. We expect that this international seminar can give valuable information and contribution especially in developing basic science for sustainable marine development in the future.

Last but not least, we realize that as human we have weaknesses in holding this seminar, but personally I believe that there are pearls behind this seminar. Thank you very much.

Chairman

Dr. Netty Siahaya, M.Si.

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Opening Remarks By Dean of Mathematic and Natural Science Faculty

I express my deepest gratitude to The Almighty God for every single blessing He provides us especially in the process of holding the seminar until publishing the proceeding of International Seminar in celebrating the 17th anniversary of MIPA Faculty, Pattimura University. The theme of the anniversary is under the title Basic Science for Sustainable Marine Development. The reason of choosing this theme is that Maluku is one of five areas in Techno Park Marine in Indonesia. Furthermore, it is expected that this development can be means where the process of innovation, it is the conversion of science and technology into economic value can be worthwhile for public welfare especially coastal communities.

Having the second big variety of biological resources in the world, Indonesia is rich of its marine flora and fauna. These potential resources can be treated as high value products that demand by international market. Basic science of MIPA plays important role in developing the management of sustainable marine biological resources.

The scientific articles in this proceeding are the results of research and they are analyzed scientifically. It is expected that this proceeding can be valuable information in terms of developing science and technology for public welfare, especially people in Maluku.

My special thanks refer to all researchers and reviewers for your brilliant ideas in completing and publishing this proceeding. I also would like to express my gratefulness to the dies committee-anniversary of MIPA Faculty for your creativity and hard working in finishing this proceeding, God Bless you all.

Dean of Mathematic and Natural Science Faculty

Prof. Dr. Pieter Kakisina, M.Si.

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Life Skills in Sector Marine Product Processing through Nonformal Education Approach In Maluku Province

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ABSTRACT

This study is based on the fundamental problem, namely how to develop life skills in sector marine product processing through nonformal education approach in Maluku Province?. The objectives of this research, namely: to know the progress develop life skills in sector marine product processing through nonformal education approach in Maluku Province. To answer the questions above, the researcher used phenomenological research by using qualitative approach. The data were collected by using in-depth interview and observations in the field. Technique of data analysis was the interactive model analysis. The results of the research prove that the fluency that life skills development occurs in three stages approach to non-formal education, namely: (i) identification of learning needs, (ii) training courses and interactive learning, constructive and innovative, (iii) continued through apprenticeship, and (iv) assistance in seafood processing company.

Keywords: life skills, courses and training, apprenticeship, mentoring

INTRODUCTION

Indonesia has the very large marine resources potential, which requires the professional management so that can bring benefits to Indonesian society. The process production of seafood can compete in Free Market of ASEAN at the end of 2015. Maluku province is rich in fishing, seaweed cultivation, various shells and pearls and other marine products. However, the potential of maritime has not been managed professionally, whereas, in terms of age, the potential of labor force are available in large numbers in coastal areas.

The coastal community, in typology, is fishing community. The people in the community tend to be the subsistence community; they are relatively undifferentiated and egalitarian as well. The scattered fishing community is settling into small groups. According to Nasdian (2014) *"Unsur-unsur perasaan komunitas antara lain: (1) seperasaan. Semua merasa dirinya sebagai kelompok kami", perasaan kami". (2) sepenanggungan. Setiap individu sadar akan peranannya dalam kelompok dan keadaan dalam komunitas sendiri memungkinkan peranannya dapat dijalankan. (3) saling memerlukan. Individu yang tergabung dalam komunitas merasakan dirinya tergantung "komunitas'nya"* Based on these three elements, the developers of community are helped to develop the strategies and also approach for the development of fishing communities, especially the development of life skills in the management of marine production.

Purpose of this study was to know the development of life skills at the seafood processing sector through non-formal education approach in Maluku province. The target of life skill development is to create a potential labor force that cannot be trained through formal

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education or schooling, yet, can be fostered through non-formal education. So far, there are two departments that train life skills for community members. These two departments are: (1) *Departemen Tenaga Kerja melalui Balai Latihan Kerja (BLK)*, and (2) *Departemen Pendidikan Anak Usia Dini dan Pendidikan Masyarakat melalui Balai Pengembangan Kegiatan Belajar (BPKB) dan Sanggar Kegiatan Belajar (SKB)*. BLK only organizes the training approach, while BPKB and SKB organizes the learning needs approach, courses approach and training approach as well as the approach to internships in company. Therefore, the non-formal educational approach has the possibility to increase the chance of the development of life skills.

BASIC THEORY

Non-formal education can be defined as “*Jalur pendidikan di luar pendidikan formal yang dapat dilaksanakan secara terstruktur dan berjenjang*” (Undang-Undang RI Nomor 20 Tahun 2003). Meanwhile, according Axin (1976, dalam Soedomo, 1989), non-formal education is “*Kegiatan belajar yang disengaja oleh warga belajar dan pembelajar di dalam suatu latar yang diorganisasi (berstruktur) yang terjadi di luar system persekolahan*”. Furthermore, according to Faisal (1981) non-formal education has the following characteristics: (1) *berjangka pendek pendidikannya*, (2) *program pendidikannya merupakan paket yang sangat khusus*, (3) *persyaratan pendaftarannya lebih fleksibel*, (4) *sekuensi materi lebih luwes*, (5) *tidak berjenjang kronologis*, (6) *perolehan dan keberartian ijazah tidak seberapa terstandarisasi*.

Community-based education can be defined as an educational process by which individuals (in this case adult) become more competent in their skills, attitudes, and concepts in an effort to live in and gain more control over local aspects of their communities through democratic participation. Community-based is a process that designed to enrich the live of individuals and groups by engaging with people living within a geographical area, or sharing a common interest, to develop voluntar-ily a range of learning, action, and reflection opportunities, determined by their personal, social, econornic and political need.

PTK-PAUDNI (dalam Walang Ilmu 2014) states that Pamong Belajar refers to *Pendidik dan Tenaga Kependidikan Nonformal berasal dari pegawai BPKB dan SKB memiliki peran dan tugas melaksanakan perencanaan dan pelaksanaan proses pembelajaran, menilai hasil pembelajaran dan melakukan pembimbingan dan pelatihan bagi warga belajar pendidikan nonformal*.

Life skills development is necessary for productive workers who want to be independence industrial. WHO (World Health Organization, 1997) gives the sense that life skills are various skills and abilities for adapting and behaving positively, which enables one person to face the demands and challenges of everyday life effectively. WHO classifies life skills into five groups, namely: (1) *personal skills*, (2) *social skills*, (3) *thinking skills*, (4) *academic skills and* (5) *vokasional skills*.

METHODS

The development of life skills in the seafood processing sector is arranging in non-formal education activities phases that is complex. It starts from the approach of community learning skills, courses and training, apprenticeship and ended with the assistance process in the company so that it needs to be studied intensively. The focus of this research was the development of life skills in the seafood processing sector through the identification of learning needs approach, courses and training as well as the activities of apprenticeship. The type of the research was qualitative research. The objective was to study, analyze and to

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interpret the data and information that was obtained through in-depth interviews with the informant who controls the steps of non-formal education approach.

The data was obtained through two sources, namely: (1) the informant, which consists of key informants namely Pamong Belajar, BPKB and SKB leadership, as well as the company manager. The informant supporters were the citizens and documents, such as the Annual Report BPKB and SKB. The data were collected through in-depth interviews, observation and document tracking.

The instrument of this research was the researcher himself as the person who will examine and explore the data, information, and documents a careful, orderly, and freely. The researcher himself was equipped with the ability in a qualitative approach, research ethics and academic skills in the field of non-formal education Sciences. The data analysis will use the interactive analysis (Miles, 1992).

RESULTS AND DISCUSSION

Development of life skills in the seafood processing sector through non-formal education activities were the identification of learning needs, courses and training and continued to the apprenticeship approach in companies that managed the marine products.

The activities of identifying the learning needs were aimed for coastal community members coastal. These community members were responsible to select the number of courses and training participants who really needed the ability of life skills in seafood processing sector. The citizens who were qualified will be trained various Public Education Institutions such as BPKB, SKB and PKBM. The result of the research showed that the course participants demonstrated the following attitudes and behaviors: (1) they were more sensitive and responsive in developing life skills; (2) they were more ready in the process of developing life skills; and (3) they had confidence for the successfulness in developing life skills. Furthermore, the result of the research supported the notion of Morrison (2001) who said that the identification of learning needs is a tool to identify the problems of learning needs in order to determine the appropriate action.

Course and training approach was addressed to the candidates who were really motivated and better prepared for training. The next task of *Pamong Belajar* or the Civil Learning was to prepare the course and training through planning the decree of learning needs, goal, learning resources, schedule and to recognize the obstacles as well as to determine alternative solutions. PKBM Makmur Jaya Ambon manages the course and training of shell crafts; *Lembaga Kursus dan Pelatihan Edelweis Tual* manages the craft of flower from fish scales; SKB Tual manages training and courses of various foods from seaweed, fish preservation as well as Abon. The result of the research showed that: (1) Participants have basic skill of seafood processing; (2) The skills of the participants still not guarantee the independence of working and trying; (3) There is still the need of guidance, education and continuous training. Moreover, the result of this research was in agreement with Malon (1984) who said that the courses and vocational training is a systematic program of performing ability and work skills.

The apprenticeship approach, in which the graduates of course and training by Civil Learning were distributed to work while studying into several companies and craft from marine products. The participants were apprenticed in several companies that process the marine products. The Civil Learning monitors and evaluates the development of the apprenticeship process. The result of this research showed that: (1) Participants have conscientious attitude, bold and honest in work; (2) Grow the attitude of independence; (3)

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The management of the company were trained as well. They were trained to build good cooperation among workers and with partners and to do the transactions with the consumers.

CONCLUSIONS

Non-formal education through BPKB, SKB and PKBM was success in fostering the citizens to have life skills so that they are ready to fill the jobs in seafood processing sector in Maluku province. Civil Learning as non-formal education identified the learning needs and was success to recruit the citizens who really in need of life skills for seafood processing. Furthermore, involving them in courses and training for vocational skills. After graduating from the course, they were programmed to follow an apprenticeship in some seafood processing company, in order to develop life skills.

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