

Discussion on the Establishment of Partnerships for Marine & Fisheries Vocational Schools

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Abstract ---- Taiwan, an island limited with land resources, should inevitably make the most use of marine resources to make up its disadvantage. On the other hand, as international trade and advanced industry depend on the ocean transportation, the related manpower is rather demanded. Taiwan has created a prospective era of ocean transportation and aquiculture; however, the factors of population structure change, social value change, citizen's living standard promotion and degree diplomaism have influenced the recruitment, the guidance of students' further study and employment service of marine & fisheries vocational schools. Thus, the purpose of this study is to discuss the establishment of educational partnership for marine & fisheries vocational schools and their related schools, the government, neighborhood communities and related industries. This may help to resolve the problems and obstacle mentioned above, then reestablish the prospective of marine industry in Taiwan.

Keywords: Partnership, Marine & Fisheries schools,
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Introduction

Over the forty years, educated by vocational schools, the entry-level personnel made great contributions to economic development to all in Taiwan. Marine and fisheries vocational schools have no exceptions. Taiwan is mountainous which leads to the shortage of land resources. However, surrounded by sea, Taiwan is also located in the Kuroshio Current Migration Region and the north-south side of the Tropic of Cancer, which makes it warm and abundant with fishery resources. Exploiting offshore, coastal and far seas fisheries becomes one of the primary economy policies. Furthermore, Southeast Asia is the aquaculture center of the world. Taiwan has the best manpower, high technology and outstanding aquaculture achievement providing Taiwanese a rich in fish products and earn a high foreign exchange (Jun-yan Lin and Wen-chang Lin, 2000). With Taiwan's advanced development and busy import and export trade, manpower in sea transport is rather needed. Besides, the authority is to establish Taiwan as a "Regional Operations Center" for the Asia-Pacific region including the sea transport center. All make the related manpower wanted.

However, most teenagers prefer to study in academic high schools rather than vocational high schools due to the rapid change of society, income raising and value change. Studying marine and fisheries becomes the last thinking for teenagers, which makes many marine and fisheries schools get in trouble when recruiting students. On the other hand, water pollution and serious environmental protection problem also make depletion of resources in offshore fishing areas. Fishermen from Mainland China are hired and get lower wage paid. Eventually, the employment environment on marine and fisheries vocational schools goes worse. Marine and fisheries schools are encountering a big challenge.

Since Taiwan is an island, it is inevitable to explore and exploit ocean resources. Training and educating related manpower importantly necessitates. In order to achieve the goal, marine and fisheries high schools should cooperate with related industry and schools to establish good partnerships with each other.

I. Marine and Fisheries Vocational Education in Taiwan

Marine and fisheries vocational schools in Taiwan consist of three levels: senior high schools, junior colleges, and institutes or universities, which are indicated as follows: The first senior vocational high school was founded in Penghu in 1922. Taiwan Governor's Institute of Marine Products was set up in Keelung in 1936 and was renamed as Keelung Vocational High School of Marine Technology later. Then, senior high schools in Kaohsiung, Suao, Tainan, Tungkang, Chenggong were set up one by one. Meanwhile, department of fishery categories were founded in National Kinmen Senior Vocational School,

National Lukang Senior High School, and National Matsu Senior High School to rapidly develop the marine and fisheries vocational education. The current three levels are indicated as follows:

1. Senior High Schools

Five schools (National Keelung Vocational High School of Marine Technology, National Suao Marine & Fisheries Vocational High School, National Tungkang Marine Vocational High School, National Tainan Marine Vocational High School and National Penghu Marine Vocational High School) are included. There are departments of Navigation, Marine Engineering, Telecommunications, Fishery, Seafood Technology, Fishery Navigation Management, Marine Products Cultivation, Fishery Management, Household Management, Sightseeing Career, which consist of 172 classes with about 6,350 students. In addition, National Lukang Senior High School, National Chenggong Commercial and Fisheries Vocational High School, National Kinmen Senior Vocational School and National Matsu Senior High School set up departments of fishery and aquaculture for 15 classes with students about 450.

2. Junior College

Five-year Day Division of CCMTC (China Junior College of Marine Technology and Commerce) includes seven departments, which are Departments of Navigation, Marine Engineering, Fishery, Seafood Technology, Navigation Management, International Trade, Computer and Telecommunications with 59classes 2,600 students. Two-year Day and Night Divisions include five departments, which are Departments of Navigation Management, Food Science, Marine Engineering, International Trade, Computer and Telecommunications. The total of classes are fifty-five. There are 2,600 students, too.

3. Institutes or Universities

Two-year program of NKIMT (National Kaohsiung Institute of Marine Technology) and NPIMT(National Penghu Institute of Marine Technology) includes departments of Navigation Technology, Marine Engineering, Hydrosphere Science, Seafood Science, Aquaculture, Navigation Management. The total number of students in both schools is about 4,500. In addition, two-year program of NTOU(National Taiwan Ocean University) includes Fishery Dept., Marine Engineering Dept., Navigation and Communication Technology Dept. There are ten classes. The number of students is about 400. Four-year program includes Fishery Dept., and Marine Engineering Dept. There are eight classes. The total number of students is about 300. This program also includes a research institute of Navigation Technology.

The number of students in senior vocational high August 18-21,2002,Manchester,U.K.

schools and colleges is about 7,000 respectively. That in institute of technology is about 2,500.

II. The Challenge of Marine and Fisheries Vocational Education

In Taiwan, marine & fisheries vocational education is not widespread, but a complete education system from senior high schools to graduate schools has been built up. Related departments and all kinds of teaching facilities are in readiness to foster a large number of professionals in the ocean business in the past forty years and to create a prospective era of ocean transportation and aquaculture for Taiwan. Marine and fisheries vocational education has played an important role in Taiwan's economic stage.

However in recent years, the environment changes and brings a big difference in politics, economy and society. Even education has no exceptions buy marine and fisheries vocational education is encountering more challenges as the following.

1. Challenge of Change in Domestic Environment

In recent two decades, the government has exerted its greatest efforts in promoting high technology of electron, communication and information. Jobs of well-paid crews on the sea are not attractive anymore. Besides, as the living standard upgrades, teenagers prefer jobs of service industry to those on board. Excessive manpower, long working hours, poor working environment and dull routines are reducing young generation's interests in the ocean business.

Low birth rate also makes the recruitment of marine and fishery schools more difficult. Since many graduates are not willing to work on board, there are 1,858 foreign crews among the crew number of 5,672 in Taiwan, most from Mainland China or Philippines. Culture difference and communication problems usually lead to the tragedies of wrecks or murders on board. All these obstruct the development of ocean transportation and aquaculture.

2. Challenge of the STCW95

There is no safe and effective ocean transportation business without excellent navigators. Therefore, the U.N. International Maritime Organization set up the Standard for Training, Certification and Watchkeeping for Seafarers (STCW) in 1978. A certified navigator should be trained on board for at least six months.

However, many requirements can't be fulfilled in marine and fishery schools to meet the request of STCW95, such as the training hours on board; besides, many professional subjects are less presented than those academic ones for students' preparation of further study in universities of general education. Then, graduates will encounter difficulties in getting a license without practical training and lose the advantage in

employment searching.

Not being the alliance of STCW95, Taiwan is not on the White List. Therefore, the certificates of Taiwanese crews should be issued by overseas organizations.

3. Challenge of Joining in WTO

Taiwan has become a member of WTO (World Trade Organization) and the impact on all industries including ocean transportation, fishery and aquaculture is expected. According to the statistics in 2000 by Fisheries Administration of Council of Agriculture, the overall fisheries production suppressed 260,000 tons, with a value of nearly NT\$17.7 billion. Now the tariff of fishery products is 27.9 percent and will be 18.2 percent in 2007. The proportion of people involving in the work of fisheries production is about 90 percent in ocean production. The average overall production for every fishing worker is only 142,465 NT dollars. It is much lower than the average of national income. After Taiwan's joining the WTO, it would become worse. For aquaculture, tariff of fishing products would reduce after Taiwan becomes a member of WTO. Naturally, imports of aquaculture fishing products would rise.

In a word, these problems can be analyzed as three parts---policy, economy and sense of value. The part of sense of value in whole social culture is hard to change at once, but still depends on our government and people taking efforts to rebuild a correct sense of employment value. Problems involving in other two parts can be overcome by establishing a good partnership between schools and related organizations.

III. The Establishment of Educational Partnerships for Marine & Fisheries Vocational Schools

A firm educational partnership not only can promote the efficiency of education, but also achieve the mutually beneficial goal. The challenges, which marine and fisheries vocational schools have encountered may be solved by the establishment of good partnerships.

1. Discussion on Educational Partnership

Technological and vocational education emphasizes both theory and practice. In October 1998, the Ministry of Education drew up a program: "Establishing Diverse Learning Organizations --- Encouraging College Schools to Build up Partnership with Other Learning Organizations." From then on, Colleges and vocational high schools have carried out a variety of cooperation. The concept of partnership is mainly derived from enterprises. Xi-qi Xiao(2000) indicates that partnership is a two-way cooperative relationship among individuals or organizations. Sharing both resources to achieve mutual benefits. As society become diverse, schools have to maintain a

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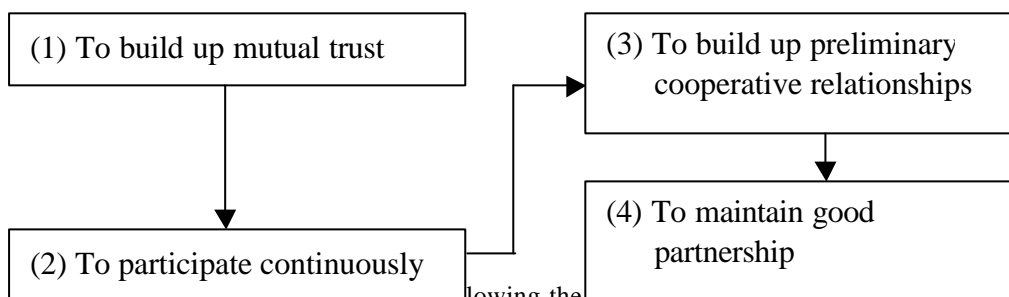
good interactive relationship with other organizations in hope of effectively achieving educational goal.

Educational partnership can be defined as a kind of school relationships with other organizations, such as government, enterprises, communities, parents, related schools, and members in school and so on. Such relationships lead to cooperate and share resources with each other and achieve mutual benefits. This study stresses on those organizations out of school.

2. Strategies of Partnership Establishment

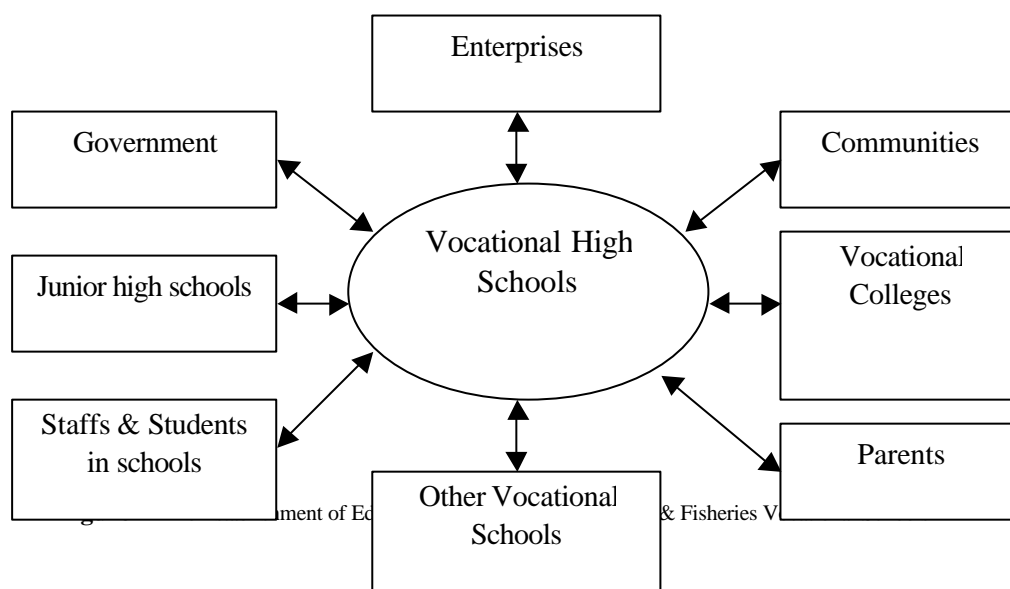
The good partnership established between employees and employers is based on the balanced duties and benefactors, and provides good communication for each other. In accordance with Tompkins' idea (1955), Chong-Xiong Fang (1998) proposed four steps to establish enterprise partnerships: (1) preliminary communication to get mutual trust; (2) continuous participation of both sides; (3) building up preliminary cooperative relationships; (4) both sides maintaining good partnership in action, which is illustrated as the following Figure 1.

Figure 1 Establishment of Partnerships (source from Chong-Xiong Fang)



Following the above steps, each one can base on the actual necessity and capability to choose a willing partner among the different level government agencies, enterprises, communities, parents, related junior high schools,

the other same level vocational schools. Then a two-way cooperation is built up to share both resources and to achieve a firm partnership for the mutually beneficial goal, like the following Figure2.



3. Feasible Policies of Establishment of Educational Partnership for Marine & Fisheries Vocational Schools

Marine & fisheries vocational schools have been faced with many problems from the above, which may be solved by establishing good partnership with many related organizations. Government agencies, like the Department of Technological and Vocational Education, and the Department of Aviation & Navigation of MOTC (Ministry of Transportation and Communications), and Coast Guard Administration should be chosen to have a close relationship with schools.

The relationships between schools and communities are also getting closer. Schools cultivate

professionals for their neighborhood communities; on the other hands, communities also support school teaching. Schools have close relationships with Agriculture Administration or Fisheries Administration nearby may share the abundant resources from the government. And the enterprises possess enormous productive equipment and become a good partner offering students practical training.

(1) To Establish Educational Partnership with Different Level Schools

Marine and fisheries schools may have close relationships with junior high schools, junior colleges and the same level vocational schools, shown on the following Table 1.

Table 1

Partnerships among Marine & Fisheries Schools and Different Level Schools

Cooperative Objects	Cooperative Contents	Anticipated benefits
Junior High Schools	<ol style="list-style-type: none"> 1. Activities of Vocational exploration and vocational guidance 2. To offer the minimum quota for entrance and scholarship 3. To set up skills training or skills education 	<ol style="list-style-type: none"> 1. To assist students to have scope for development suitable to their needs 2. To solve the problems of students' educational advancement 3. To solve the problems of recruitment
Technological and Vocational (Junior) Colleges	<ol style="list-style-type: none"> 1. To have exchange visits or exchange between teachers and students 2. To carry curriculum cooperation out 3. To offer the minimum quota for entrance and scholarship 	<ol style="list-style-type: none"> 1. To assist students to have scope for development suitable to their needs 2. To upgrade the quality of education 3. To solve the problems of recruitment
Other Vocational High Schools	<ol style="list-style-type: none"> 1. To establish curriculum development centers 2. To carry out skill competitions, teaching demonstration 3. To set up teaching resources centers 	<ol style="list-style-type: none"> 1. To raise teacher's specialized knowledge 2. To upgrade the quality of teaching 3. To lighten government financial burden

(2) The Establishment of educational partnership with the government agencies

Marine & Fisheries Schools can establish good partnership with different level government

agencies, for examples, with the Ministry of Education which directly supervises all the schools, with Department of Aviation & Navigation of MOTC (Ministry of Transportation

and Communications), Fisheries Administration, Coast Guard Administration and harbor bureaus which are related to employment of graduates, and with the local government agencies such as the

governments of counties, villages and towns, they have geographic relationships with them, indicated as the following Table 2.

Table 2 Partnerships among Marine & Fisheries Schools and Different Level Government Agencies

Cooperative Objects	Cooperative Contents	Anticipated benefits
The Ministry of Education	<ol style="list-style-type: none"> To proceeding a case research of Education of Marine & Fisheries Schools To exploit teaching materials, media, aids and so on. 	<ol style="list-style-type: none"> To raise teacher's specialized knowledge To upgrade the quality of education
Aviation & Navigation Administration, Fisheries Administration and Vocational Training Unit	<ol style="list-style-type: none"> To be assigned to conduct short period training courses and skills tests and so on To offer students chances to internship and training To provide teaching facilities and resources To offer positions for social substitute for the military services 	<ol style="list-style-type: none"> To raise teacher's specialized knowledge To upgrade the quality of teaching To lighten government financial burden To fully make use of manpower resources
Local Government Agencies	<ol style="list-style-type: none"> To be assigned to conduct short period training courses To assist in conducting related social communicative activities To offer positions for social substitute for the military services 	<ol style="list-style-type: none"> To raise teacher's specialized knowledge To lighten government financial burden To fully make use of manpower resources

(3) The Establishment of educational partnership with communities

Schools not only cultivate the personnel for what the communities need, but also take advantages of their huge educational resources to offer the communities services of “recurrent

education” and lifelong education. Schools act as a hand to push the communities to become a learning organization. Communities also have abundant and diverse resources, which would be a great help to elevate the teaching quality of schools, shown as the following Table 3.

Table3
The Establishment of educational partnerships with communities

Cooperative Objects	Cooperative Contents	Anticipated benefits
Social cultural foundations	<ol style="list-style-type: none"> To provide teaching facilities and resources To conduct educational training courses To mutually exchange between teachers and social cultural workers 	<ol style="list-style-type: none"> To elevate teaching efficiency To raise community culture To raise teacher's specialized knowledge

Folk associations	<ol style="list-style-type: none"> 1. To provide teaching facilities and resources 2. To offer scholarships and student aid funds 3. To conduct activities together 4. To support native education 	<ol style="list-style-type: none"> 1. To elevate teaching efficiency 2. To reward and aid excellent and poor students 3. To arouse native consciousness and bring prosperity 4. To inspire students studying in the neighborhood
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(4) The Establishment of Educational Partnership with Enterprises

One of technological vocational education goals is to cultivate professionals for the enterprises. The enterprises could offer chances of practical training or internship for teachers and

students. Students can take practical training on ships, at factories, at fish farms, at some other places by the cooperative partnership between schools and enterprises. shown on the following Table 4.

Table 4

The Establishment of Educational Partnership with Enterprises

Cooperative Objects	Cooperative Contents	Anticipated benefits
Accreditation Agencies	<ol style="list-style-type: none"> 1. To assist in designing the syllabus 2. To conduct training of in-service teachers 3. To conduct tests for teachers and students to receive licenses 	<ol style="list-style-type: none"> 1. To upgrade the quality of teaching 2. To raise teacher's specialized knowledge 3. To solve the problems of employment
Industrial circles	<ol style="list-style-type: none"> 1. To offer chances for visit and internship 2. To offer chances for training of in-service teachers 3. To provide teaching facilities 4. To offer chances for employment 	<ol style="list-style-type: none"> 1. To assist students to have scope for development suitable to their needs 2. To raise teacher's specialized knowledge 3. To upgrade the quality of teaching 4. To solve the problems of enroll new students
Agriculture	<ol style="list-style-type: none"> 1. To offer chances for training of 	<ol style="list-style-type: none"> 1. To raise teacher's specialized

Administration, Fisheries Administration, or some related agencies	in-service teachers 2. To offer scholarships and student aid funds 3. To offer chances for training and internship	knowledge 2. To reward and aid excellent and poor students 3. To lighten government financial burden 4. To assist students to receive skills certification and licenses
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IV. Conclusion

The ways of establishing educational partnerships are diverse, such as curriculum design, students' practical training and teachers' in-service training. Besides, good education partnerships also carry out student exchange, educational counseling, research and development, and equipment exchange to gain the mutual benefits. Furthermore, the establishment of educational partnerships could be rich and diverse and if the schools can design the plan well, find the right partners, and implement exactly, it may bring the school with the following expected benefits:

1. The establishment of educational partnerships for marine and fishery vocational schools and their related schooling level can be accordance with the sequential curriculum of vocational education system to foster marine and fishery professionals, solve the lose of recruitment and eventually elevate the teaching quality.
2. To cope with the educational policies of cultivating the professionals on marine and fisheries industry to enhance industry advantage.
3. To corporate with the neighborhood community development for the establishment of school features to prosper local economy for achieving mutual benefits.
4. To enhance expertise and skills to up-grade the industry and also to improve practical experience of teachers for elevating teaching quality.

The categories of educational partnerships are rather extensive including cooperation among schools, enterprises and government agencies, exchange activities among schools and community organizations. To bring their distinguishing features into full play, choose proper objects to establish good educational partnerships, marine and fisheries vocational schools will not only gain the anticipated benefits mentioned above, but get past the current dilemma.

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