

IWALT 2000 Panel - 4

The Development of Science and Technology Education Planning in Vocational and Higher Educational Institutions

Panel Chair: Assoc. Prof. Dr. Ravewan Shinatrakool
*Dean of Industrial Education, Faculty of Industrial Education
King' s Mongkut Institute of Technology Ladkrabang
Charlong Krung Rd. Bangkok 10520 THAILAND*
HOME: Tel. (662) 4342034, 01-8504754
Fax: (662) 4353448 Pager: 152-580616
E-mail: ravewans@hotmail.com

Abstract

Basic Knowledge in science and technology is very important for developing the country. Thailand needs to depend on itself in technology to develop its sectors of industry, agriculture, commerce and service. There was a lack of equilibrium among these sectors especially in the industrial sector, which was prominent and caused labor to emigrate out of their hometowns. Many problems appeared, such as slums, inadequate social welfare in cities and poverty.

1. Research objectives

- To study the needs of manpower in science and technology in workplaces.
- To study the situations of training manpower in science and technology.
- To study the good aspects of manpower in science and technology.
- To study the cooperation between work places and educational institutions.
- To study the feasibility of the needs of manpower in science and technology.

2. Research procedure

-Population (1995): Administrators of 621 work places in 5 industrial estates The workplaces were composed of 80 factories in Ladkrabang, 92 in Bangchan, 115 in Pratuntani, 293 in Bang Phu, and 41 in Mabthapud industrial estates.

-Samples: Administrators of 200 workplaces in 5 industrial estates, which were 55 in Ladkrabang, 37 in Pratuntani, 60 in Bang Phu, and 14 in Mabthapud. All these purposive random samples were personnel administrators who monitored science and technology manpower in workplaces.

-Research instruments: Try out the research instruments in workplaces, which were not the Samples in Ladkrabang industrial estate .

-The research instruments' reliability was .95.

3. Findings

The findings were as follows:

-The needs of manpower in science and technology: 57% of workplaces stated that they were inadequate. Most workplaces needed manpower with Bachelor degree in engineering, and vocational certificate of upper level in industrial technology, respectively.

-The situations of training manpower in science and technology: During the academic years of 1986-1990, there were 276, 315 students who studied in science and technology in Bachelor and certificate levels each year. The ratio of students who studied engineering: agriculture: science was 20:1:3.

-The good aspects of manpower in science and technology: Most workplaces needed good personnel qualities such as responsibility, self discipline, diligence, enthusiasm, carefulness, good relations, healthiness, honesty, appliance usage skills, creativeness, homes near the workplaces, passing the interview and placement test, being able to speak a second language (English), having experience in the position, good personality, and being able to use computers.

-The cooperation between work places and educational institutions on recruitment policy. Most work places stated that they wanted personnel who were suitable to their purposes, passed the interviews, were oriented towards equal rights, passed aptitude tests, passed placement tests, also that they preferred male to female, as well as concerned personnel in the organization more than others, respectively.

-The feasibility of the needs in manpower in science and technology.

- vocational certificate level in industry
- vocational certificate upper level in industry
- Bachelor degree in engineering, respectively

4. Conclusion

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-The good aspects of manpower in science and technology: Most work places needed good personnel qualities, such as responsibility, self-discipline, diligence, enthusiasm, carefulness, good relations, healthiness, honesty, appliance usage skills, creativeness, homes near the workplaces, passing the interview and placement test, being able to speak a second language (English), having experience in the position, good personality, and being able to use computers.

-The cooperation between workplaces and educational institutions on recruitment policy: Most workplaces stated that they wanted personnel who were suitable to their purposes, passed the interviews, were equal rights oriented, passed aptitude tests, passed placement tests, and that they preferred male to female, as well as concerned personnel in the organization more than others, respectively.

-The feasibility of the needs in manpower in science and technology:

-Ladkrabang industrial estate: In the following five years most work places firstly needs personnel who graduated vocational certificate level in industry, secondly, vocational certificate upper level in industry and thirdly, Bachelor degree in industry.

-Bang Chan industrial estate: In the following five years most workplaces firstly needed personnel who graduated vocational certificate upper level in industry and Bachelor degree in engineering and science study, respectively.

-Pratumthani industrial estate: In the following five years most work places firstly needed personnel who graduated vocational certificate level in Industry, secondly, vocational certificate upper level in industry and thirdly, Bachelor degree in science study, respectively.

-Bang Phu industrial estate: In the following five years most work places firstly needed personnel who graduated Bachelor degree in engineering, secondly, technological certificate level in industry, and thirdly, vocational certificate level in industry, respectively.

-Mabthapud industrial estate: In the following five years most work places firstly needed vocational certificate upper level and vocational certificate level in industry, and Bachelor degree in engineering, respectively.

5. Panel Overview

This panel concentrates on the efforts made in various parts of the world towards the improvement of the science and technology education, and towards planning of a better educational system, with special focus on higher and/or vocational education. Professor Greenberg's paper presents how the using of laptop computers at the University of the Incarnate Word, USA can help in reshaping the attitudinal bias and lead to advanced technology skills in higher Educational Institutions. Next, professor Ichikawa from Japan gives us a different angle, by discussing a visualization and simulation perspective for social science education. His paper, by presenting the visualization and simulation of cause-and effect relations in the society, focuses on the progresses in computer-based learning environments, that are applicable for social science education. Dr. Hsiang shows us how the advances of technology influence the planning of new curricula for students, with the goal of increasing their interest in technology and enhance their design and evaluation skills. Our last panellist, Mr. Reclaitis presents the efforts done in Lithuania, at the Kaunas University of Technology, towards creating Web-based services for Technology Education.

6. References

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