De La Salle University – Dasmariñas
GRADUATE PROGRAM

# RELEVANT SKILLS REQUIRED IN THE GLOBAL MARKET NEEDED BY RADIOGRAPHERS IN THE PHILIPPINES

A Dissertation
Presented to
the Graduate School of Education, Arts and Sciences
De La Salle University-Dasmariñas
Dasmariñas, Cavite

In Partial Fulfillment
of the Requirements for the Degree
Doctor of Education
Major in Educational Management

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March 2003

## ABSTRACT

**Name of Institution** : De La Salle University-Dasmariñas

**Address** : Dasmariñas, Cavite

**Title** : **Relevant Skills Required in the Global Market Needed by Radiographers in the Philippines**

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**Degree** : Doctor of Education

**Major** : Educational Management

**Date Started** : June 2002

**Date Completed** : March 2003

**STATEMENT OF THE PROBLEM:**

This study determined the extent of the basic skills of radiographers in the six imaging modalities in the Philippines.

Specifically, the study answered the following questions.

1. What are the basic skills of radiographers in the Philippines?

2. What are the relevant skills of radiographers required in the global market?

3. What are the relevant skills of radiographers in selected hospitals in the Philippines in terms of the six imaging modalities?

4. What is the extent of the relevant skills of radiographers in

selected hospitals in the Philippines in terms of the six imaging modalities?

5. Is there congruence between the relevant skills of radiographers in selected hospitals in the Philippines and the global market demands in terms of the six imaging modalities?

6. Is there discrepancy between the relevant skills of radiographers in selected hospitals in the Philippines and the global market demands in terms of the six imaging modalities?

**SCOPE AND DELIMITATION:**

This study dealt with the analysis of the basic skills of radiographers in the Philippines and the relevant skills required in the global market. The extent of the basic skills and relevant skills were compared to find out if congruence and discrepancy exist between the said set of skills. The relevant skills of radiographers in the Philippines were determined by the basic skills practiced by radiographers in the Philippines while the relevant skills required in the global market were determined using the Roles of a Medical Radiation Technologist published by the ISRRT and the Scopes of Practice for Health Care Professionals in the Radiologic Sciences published by the ASRT. For further specificity, the study was delimited only to radiographers currently employed during the data gathering period in the selected hospitals in the Philippines. The bases for hospital selection were: (a) They should be located in Metro

Manila, Metro Cebu and Metro Davao; (b) They should be categorized as tertiary hospitals by the Department of Health (DOH); (c) They should be providing radiological services using at least 3 imaging modalities; and (d) They should have at least 100 bed-capacity.

**METHODOLOGY:**

The descriptive research design utilizing the normative survey was employed in the study. The respondents were 369 radiographers practicing at least three of the six modalities, namely general radiography, computed tomography, magnetic resonance imaging, nuclear medicine, ultrasonography and radiotherapy from the 28 selected hospitals in the Philippines.

Self-structured questionnaires were in six sets corresponding to the six imaging modalities included in the study. The data were statistically treated using frequency count, mean, percentage and standard deviation.

**MAJOR FINDINGS:**

1. The basic skills of radiographers in the six imaging modalities were identified as follows:

**General Radiography.** Out of the 47 relevant skills required in the global market, there were 3 or 6.38 per cent identified as basic skills. The predominant skills were preparing patient for procedures, operating radiographic equipment and determining radiographic technique exposure factors.

**Nuclear Medicine.** Out of the 52 relevant skills required in the global market, there were 4 or 7.69 per cent identified as basic skills. The predominant skills were confirming the patient's clinical history with the procedure, preparing patients for examination, providing instructions to the patient, gaining the cooperation of the patient, minimizing the anxiety of the patient, undertaking calculations pertaining to radiopharmaceuticals, identifying radiopharmaceuticals, selecting radiation detection equipment appropriate for the examination, operating radiation detection equipment appropriate for the examination, selecting imaging equipment appropriate for the examination, operating imaging equipment appropriate for the examination, positioning the patient appropriate for the examination, positioning equipment appropriate for the examination, respecting the patient ability to conform to the examination, assuring patient comfort to conform to the examination, immobilizing the patient as required for appropriate examination, applying principles of radiation protection to minimize exposure to the patient, applying principles of radiation protection to minimize exposure to self, applying principles of radiation protection to minimize exposure to general public, evaluating images for technical quality, evaluating data for technical quality, assuring proper identification of images, verifying informed consent of the patient prior to examination, practicing aseptic technique, providing for the physical needs of the patient during examination, providing for the psychological needs of

the patient during examination, providing patient education prior to examination, maintaining pertinent records, respecting the confidentiality of records, respecting the confidentiality of established policies in the department, assuming responsibility in the assigned area in the department, reporting equipment malfunction, providing input for supply purchases, providing practical instruction for students, providing practical instruction for other health care professionals, controlling of inventory, maintaining knowledge of universal safety precautions, undertaking universal safety precautions, undertaking patient relations skills, application of ethical responsibilities in undertaking procedures, and application of legal responsibilities in undertaking procedures.

**Ultrasound.** Out of the 38 relevant skills required in the global market, there were 7 or 18.42 per cent identified as basic skills. The predominant skills were preparing patients for examination, providing instructions to obtain desired results, gaining cooperation of the patient, minimizing anxiety of the patient, selecting ultrasound equipment and accessories, operating ultrasound equipment and accessories, positioning the patient appropriate for the examination, respecting the biological needs of the patients during examination, respecting confidentiality of records, and reporting equipment malfunction.

**Computed Tomography.** Out of the 45 relevant skills required in the global market, there were 10 or 22.22 per cent identified as basic

skills. The predominant skills were preparing patients for examination, gaining cooperation of the patient, positioning the patient appropriate for the examination, immobilizing the patient, applying the principles of radiation protection to self, verifying informed consent before examination, assuring proper identification of the images, respecting confidentiality of patient records, and reporting equipment malfunction.

**Magnetic Resonance Imaging.** Out of the 49 relevant skills required in the global market, there were 28 or 59.18 per cent identified as basic skills. The predominant skills were confirming patient's clinical history with the procedure, preparing patient for examination, gaining the cooperation of the patient, minimizing the anxiety of the patient, applying the principles of MRI safety to minimize risk to patient, applying the principles of MRI safety to minimize risk to self, applying the principles of MRI safety to minimize risk to general public, operating MRI equipment, selecting MRI accessories (coils, gating devices, etc.), positioning the patient appropriate for the examination, respecting patient ability to conform to the examination, assuring patient comfort to conform to the examination, immobilizing the patient, selecting appropriate pulse sequences for the examination, respecting established protocols of the examination, recognizing factors influencing data acquisition, understanding methods of examination, manipulating display parameters, providing patient education prior to examination, maintaining pertinent

records, respecting confidentiality of records, assuming responsibility in assigned area, reporting equipment malfunction, respecting confidentiality of established policies in the department, application of ethical responsibilities in undertaking procedures, and application of legal responsibilities in undertaking procedures.

**Radiotherapy.** Out of the 88 relevant skills required in the global market, there were 15 or 17.04 per cent identified as basic skills. The predominant skills were providing radiotherapy treatment delivery services, maintaining values congruent to the profession's Code of Ethics, maintaining flexible stance towards patients, maintaining flexible stance towards visitors, maintaining flexible stance towards other health professionals, reporting untoward effect of treatment, monitoring untoward reactions to treatment, monitoring untoward therapeutic responses to treatment, reporting untoward therapeutic responses to treatment, consulting oncologist before proceeding with the treatment, ensuring safe patient care, detecting equipment malfunction, and reporting significant changes in patient conditions.

2. The number of nuclear medicine technologists employed in selected hospitals were minimal. Out of the 11 hospitals offering nuclear medicine services, only 5 employed radiologic technologists as nuclear medicine technologists. It was also found out that most of the nuclear medicine facility in the Philippines employed non-radiographers.

3. The extent of the basic skills in the six imaging modalities ranged from highly competent to fully competent.

4. The relevant skills of radiographers in the Philippines needed in the global market that need enhancement were identified. The following skills were items with the least summarized as follows:

**General Radiography.** Performing venipuncture, giving input for supply decisions, contributing input for equipment purchase, providing input for purchase of supplies, and preparing medications as prescribed by a licensed physician.

**Nuclear Medicine.** Preparing medications as prescribe by a licensed physician, identifying medications as prescribe by a licensed physician, undertaking calculations pertaining to radiopharmaceuticals, initiating basic life support action (CPR/AR), providing practical instruction for other health care professional, and performing venipuncture.

**Ultrasound.** Initiating basic life support action (CPR/AR), providing patient education prior to examination, controlling inventory, purchasing supplies for the assigned area, and minimizing anxiety of the patient.

**Computed Tomography.** Performing venipuncture, undertaking basic life support action (CPR/AR), providing practical instruction for other health care professional, providing input for purchase of supplies, and controlling inventory.

**Magnetic Resonance Imaging.** Performing venipuncture, initiating basic life support action (CPR/AR), administering basic life support action (CPR/AR), providing input for equipment purchase, and assisting a licensed physician in interventional procedures.

**Radiotherapy.** Participating in clinical research, assisting in the use of brachytherapy sources, defining target volume, practicing basic technique in venipuncture, identifying target volume, performing dosimetric calculations, and participating in patient follow-up.

5. The relevant skills of radiographers in the Philippines that had the least congruence in the all imaging modalities needed in the global market were: performing venipuncture, initiating basic life support action, administering medications as prescribe by a licensed physician, preparing medications as prescribed by a licensed physician, controlling of inventory, and providing input for the purchase of supplies.

The above skills were deficient in satisfying the level of congruency of global market.

6. Radiographers in the Philippines lack competency in areas of research, education, administrative function and patient care.

**CONCLUSIONS:**

1. The basic skills of radiographers in the six imaging modalities are generally minimal compared to the relevant skills required in the global market.

2. The academic preparation of radiographers to assume nuclear medicine procedures were not adequate. Theoretical and clinical skills did not satisfy the required competency in the workplace.

3. Theoretical and clinical preparation of radiographers in the Philippines were deficient compared to the relevant skills in the global market.

4. The BSRT curriculum is deficient in terms of skills development in the six imaging modalities compared to the relevant skills needed in the global market.

5. Competencies of radiographers in the Philippines needs enhancement in the six imaging modalities, and further development to render high standard radiological services.

6. Requirements for radiographers in the six imaging modalities in the international workplace include research, education, administrative function and patient care.

**RECOMMENDATIONS:**

1. It is recommended that learning institutions specifically colleges and universities offering the BSRT program should review the BSRT education for program improvement.

2. Radiographers must be given rigorous theoretical and practical training in nuclear medicine to perform nuclear medicine procedures proficiently.

3. Academic preparation of radiographers should include nuclear medicine examinations and must be intensified by colleges and universities through the BSRT education curriculum.

4. The colleges and universities offering the BSRT education program must continuously improve and develop the required skills in the six imaging modalities needed in the international workplace.

5. There should be extensive linkages and networking with health care institutions to further improve Related Learning Experiences (RLE).

6. Curriculum content should teach the skills needed in the international workplace and must strictly conform to the specific skills needed in the six modalities.

7. The BSRT education program should be restructured in anticipation of the development of the curriculum that will guarantee congruency between the basic skills and the relevant skills needed in the global community.

8. Academic preparations for radiographers must fortify the foundation for theoretical, clinical and administrative aspects of radiography to practice the profession based on global standards.

9. The relevant skills of radiographers that need enhancement should be considered in the policy formulation for the BSRT education.

10. The core competencies of BSRT education must stress on the relevant skills of radiographers in the Philippines needed in the global market.

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