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Research Article

Global Relevance of Radiologic Technology Education in the Philippines: An Overseas Competitiveness Perspective

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ABSTRACT

Using information from alumni employed in the UAE, mostly in Abu Dhabi, Dubai, and Sharjah, the study examines how radiologic technology education is globally relevant in the Philippines. It examines the present curriculum and covers topics such as student learning policies, teaching methods, teaching personnel, learning materials, assessment procedures, and internship opportunities. Additionally, it looks into the ability of Philippine graduates in radiologic technology to work abroad in professions that adhere to international standards. Additionally, the analysis examines how their careers have developed, how they adapt to various work contexts, if they apply the skills they have acquired, any challenges they have faced in finding employment in the UAE, and what they still need to learn. Based on the updated Area of Practice data, the results show that Philippine RT programs offer a moderate level of preparation for international certification, with strengths in foundational knowledge and updated articulation of weaknesses in specific modality experience, especially in areas like General Radiography, Sonography, Interventional Radiography, CT, and MRI. These insights inform targeted action plans to enhance the global competitiveness and contemporary relevance of Philippine radiologic technology education.

Keywords: *Radiologic Technology*, *Global Relevance*, *Philippine Education*, *UAE Employment*, *Curriculum Evaluation*

Introduction

Due to its emphasis on the global relevance of radiologic technology education in the Philippines, as perceived by its graduates working in the United Arab Emirates (UAE). In the world of healthcare, radiologic technology is very important, and radiologic technologists help in both the infirmary and in treating patients. An increase in demand for skilled RT specialists has occurred, mainly because of new developments I n imaging and more people living with long-term health problems. The World Health Organization says that differences in the availability of radiologic services

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between rich and poor nations highlight the need for skilled radiographers all over the world. In countries such as the United States, the American Society of Radiologic Technologists has put in place thorough training programs to help RT professionals be skilled and qualified (Daquis et al., 2016). They highlight both the technology needed and other abilities, including thinking, patient support, and ethical grounds, to represent all the various skills needed in healthcare all over the world.

Radiologic Technology (RT) should be a part of the healthcare environment worldwide because they enable the correct diagnosis and successful treatment with the aid of modern imaging tools. The basis of such standards is the Sustainable Development Goal 4 (SDG 4), which is intended to promote independent, equitable, and quality education on the premises of such a person to earn lifelong learning. The study aims to find out the applicability and the readiness of the Philippine-trained radiologic technologists to the international medical demands, with special focus on the radiologic technologists in the UAE in Abu Dhabi, Dubai, and Sharjah in relation to the research question.

Radiologic technologists support the healthcare field by assisting in the diagnosis and treatment of different medical diseases through X-rays, CT scans, MRIs, and ultrasound. The field is changing at a rapid pace thanks to technological progress and the growing complications in healthcare. Therefore, today, radiologic technology training requires radiologic technologists to be knowledgeable, adaptable, quick-thinking, and curious about diverse societies, particularly when working abroad.

In the ASEAN region, making education standards the same has helped both medical workers and patients by improving the quality of health care. Places like Singapore and Malaysia have concentrated on upgrading their radiology training to track international standards and add modern imaging instruments. The MRA for medical practitioners introduced by ASEAN seeks to make all qualifications equal and encourage cross-border healthcare staff movements between nationalities (Sison & Rodelas, 2024). In the Philippines, CHED has put in place policies to boost the quality of RT education, for example, by creating outcome-based education frameworks and accrediting programs with agencies such as PAASCU. In spite of these measures, some issues remain, for example, differences in resources for students, training abroad, and the continuous learning of faculty. It is also essential for regional integration that academic institutions in ASEAN join forces in programs, conduct collaborative research, and arrange for faculty trades (Mendoza, 2021). The main objective of these partnerships is to unite the region's educational settings by exchanging knowledge which helps reach the larger objective of increasing professional mobility and health standards.

In the Philippines, CHED is implementing several reforms to improve the quality of radiologic technology education. Such measures involve applying an Outcome-based education (OBE) framework and placing greater importance on being accredited by groups such as PAASCU. As of 2022, 100 institutions are offering Bachelor of Science in Radiologic Technology programs in the Philippines, graduating many students each year. Even with all this development, the country still lacks clarity, infrastructure, skilled teachers, and agreement with worldwide norms (Baladad et al., n.d.).

New studies suggest that Philippine radiologic technology graduates are ready for the local workplace, but there is not enough proof of their readiness for overseas jobs. Cruz and Santos also discovered in a 2021 study that around 30% of affected radiologic technology graduates did not learn major modalities used in hospitals, such as PET-CT and interventional radiography, which are becoming important. Many OFWs employed in radiologic technology fields, especially in the UAE, claim to experience a lot of difficulty as they get used to new things at work.

Many Filipino radiologic technologists working in other countries underline the need for educational programs to be important worldwide. Based on statistics from the POEA, there are over 3,000 healthcare professionals, such as radiologic technologists, who work abroad every year in the Middle East, North

America, and Asia-Pacific countries (Jainal & Lantaka, n.d.). Still, not much is clear about how Philippine schools help them succeed in global positions and if working abroad affects their views on Philippine education.

Furthermore, the curriculum is not the only matter, since Philippine radiologic technology programs have different clinical training experiences. Tertiary hospitals are partnered with some institutions, while others use hospitals with fewer advanced tools, which causes an imbalance in trainees' practical experience and competence. Such inconsistency in education might affect the readiness of students, making it harder for them to adjust when they work in international settings that rely on advanced technology and proper clinical guidelines (Harris, 2018). Evening out students' clinical experience matters for keeping education constant, and also preparing graduates for success around the world.

While these dynamics exist, the study will look into the lives of Filipino radiologic technologists working in the UAE to understand how much their learned skills meet international requirements. It is important to carry out this investigation now because it will guide the development of the curriculum, improve faculty, preserve the country's competitiveness, and elevate the quality of radiologic technology workers globally.

The research aims to address the question of whether education in radiologic technology (RT) in the Philippines is relevant to the globe with a critical eye, as held by workers residing in Abu Dhabi (UAE), Dubai (UAE), and Sharjah (UAE). Specifically, the research problem tries to gauge how much the Philippine RT curricula, faculty qualifications, and transnational ties prepare the graduates towards international models and practices in health care.

Figure 1
Paradigm of the Study

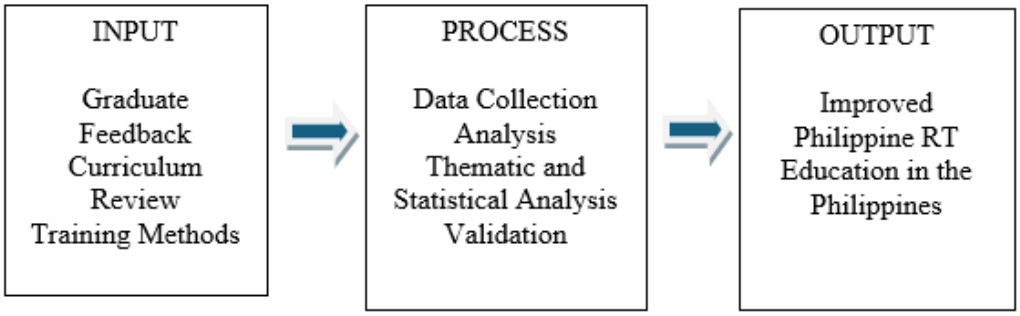

Figure 1 shows the paradigm of the study. This model clearly illustrates how input and subsequent analysis will lead to creating useful recommendations for this study. It demonstrates the relationship between components of the study that help produce beneficial conclusions about improving RT education around the world.

Objectives Of The Study

The research will: compare participants in terms of their age, sex, years of experience as professionals in the UAE, place of employment, and the type of healthcare facility they worked in to identify the demographic variables that can potentially influence the perceptions.

Quantify how globally relevant they are by gauging the perceptions that the graduates have on the contents of the curriculum, faculty competence, teaching methods, clinical and technical experience, provision of infrastructure and amenities, avenues to participate in research, being prepared to go beyond the country as certified professionals, and being exposed to international integration in the provision of healthcare.

Evaluate the curriculum against international standards in communication and other aspects of the curriculum where Philippine RT education does not supersede the internationally acceptable standards in the practice of the radiologic profession.

Evaluate the capability of graduates to practice in the global healthcare setting, including the aptitude to cope with self-management in multicultural and interprofessional settings.

Compare and contrast the differences in understanding of global relevance about the categories of groups of demographic profiles, and identify particular gaps and strengths in each group.

Formulate evidence-based recommendations about the enhancement of the delivery of the curriculum to ensure that the competitiveness and employability of Philippine-trained radiologic technologists are enhanced within the international market.

It is the purpose of this paper to assist in formulating an integrated, evidence-based foundation on which curriculum development can be built to address the realities of the global healthcare needs, as well as reintegrate the Philippines as a contributor of competent, internationally competitive radiologic technologists.

The researcher utilized a convergent parallel design in mixed methods research, quantitative and qualitative data collection and analysis are done during the same phase of the research process, and the results are then integrated for an overall interpretation

In order to better comprehend a study challenge, the design aims to gather various but complementary data regarding the same subject. It is employed when a researcher wants to compare and contrast quantitative and qualitative data for validation and confirmation in order to triangulate methodologies (Creswell, Piano Clark, 2017). Additionally, it is used to compare different levels within a system to gain a more comprehensive understanding of a phenomenon and to illustrate quantitative results with qualitative data.

It is also employed when gathering and evaluating both quantitative and qualitative data to comprehend a problem is equally valuable; additionally, simultaneous data collection can be useful when time is of the essence. The study team must oversee substantial data collection and analysis; thus, having proficiency in both approaches is crucial.

In order to determine whether qualitative findings may be extrapolated to a sample and a population, researchers employ this design. The researcher is unsure about the main constructs for the study, and the research challenge is generally more qualitative in nature.

Methodology

Research Design

This design is used when a researcher seeks to generalize, assess, or test qualitative results to see if they can be generalized to a sample and a population. Overall, the research problem is more qualitatively oriented, and the researcher doesn't know what constructs are key for the study.

Interviews with Filipino radiologic technologists who work in medical facilities across Abu Dhabi, Dubai, and Sharjah, United Arab Emirates, these interviews address the global relevance of radiologic technology education in the Philippines from the perspective of graduates working in the United Arab Emirates. Open-ended questions were used to collect rich qualitative information on their thoughts, opinions, and experiences (Harizan and Hilmi, 2021). Thematic analysis was used to analyze the data from the qualitative interviews. As part of this analytical process, it is critical to search the data for recurring themes, patterns, and connections. Thematic analysis offered a more comprehensive understanding of the factors from the viewpoint of radiologic technologists regarding the worldwide relevance of their education in the Philippines, impacting graduates' employability, and the unique challenges they face in the global labor market.

The research proceeds to the quantitative phase after the qualitative phase. To gather quantitative data from Filipino radiologic technologists now employed in the United Arab Emirates, a survey questionnaire was created. The survey inquires about their employment status, academic accomplishments, and

general job-seeking experiences. To make it easier to gather numerical data for statistical analysis, the survey employed a bigger sample of graduates. Filipino graduates' views, skill levels, and employment outcomes were revealed through the comparison and generalization of the quantitative data.

The qualitative and quantitative data were combined to create a thorough understanding of the research problem after these stages were finished. To ascertain if the qualitative and quantitative data are converging or diverging, a comparison and contrast research was carried out. A comprehensive and nuanced understanding of how radiologic technology education in the Philippines impacts graduates' employment abroad is produced by this integrative approach. The study's design emphasizes how important ethical issues are. Participants' informed consent was acquired, confidentiality was maintained, and the moral standards set forth by the pertinent study ethics committees were adhered to.

This study design incorporates mixed methods, whereby both qualitative and quantitative data collection and analysis methods are used. The reason for choosing this method is to provide a systematic comprehension of targeted research and multiple aspects of specific research questions. During the second phase of the research, we conducted an unstructured face-to-face questionnaire among graduates who were employed abroad and relevant stakeholders. The interviews covered their perceptions and experiences of employment abroad. The interviews were transcribed verbatim, and the thematic analysis was applied to detect the recurring topics and patterns in the data. In contrast, the qualitative part embodied focused group interviews of a larger number of Filipino graduates participating in the survey questionnaire distribution. The collected data through the surveys was employed for various statistical analyses, as was explained before, to quantify and analysed the trends and relationships that were inherent within the set. Through employing both qualitative and quantitative data, the study was able to reach a conclusion, support the results and provide a comprehensive analysis from more than one aspect.

Research Site

The study was conducted in Abu Dhabi, Dubai, and Sharjah, United Arab Emirates. United Arab Emirates (UAE), also known as the Emirates. It is a Middle Eastern nation in West Asia. situated at the easternmost point of the Arabian Peninsula. It borders Saudi Arabia, Oman, and Iran on the sea, as well as Qatar and Iran on land. The capital of the nation is Abu Dhabi, and its most populous city, Dubai, serves as a global hub.

Participants

The participants in the survey were 100 Filipino radiologic technologists who work in different medical facilities across the United Arab Emirates. They were selected using purposive sampling, where only those who responded to the request to answer the Google Form version of the instrument or the hard copy of the instrument were included. There was a total of 100 requests to answer, but only 92 returned their responses.

Table 1 presents descriptive statistics for the socio-demographic and professional profiles of the 92 respondents. Age, sex, practice area, years of employment in the UAE, employment location (Emirate), and kind of employing facility are summarized in Tables 1–6. Each table is followed by a brief explanation and discussion that connects the profile to the study's theoretical stances and implications for perceived global importance.

Table 1
Age distribution of respondents (n=92)

Age group (years)	Frequency	Percentage (%)
25–29	30	32.6
30–35	36	39.1
36–40	26	28.3
Total	92	100.0

The respondent poll is relatively young: 71.7 % are between 25 and 35 years old, and the remaining 28.3% are 36-40. This level of concentration during mid-career periods implies that the sample reflects recent graduates and early-career migrant RT professionals. In terms of Human Capital, this age trend follows the active upskilling and mobility stages during which individuals are expected to consider global work opportunities to get the best out of their professional training. Younger generations might be better adjusted to new technologies and work cultures, and this may have a positive impact on how they perceive the relevance of the curriculum (Kolb's experiential learning model indicates that early career professionals often resort to active experimentation as they face work-related challenges) (Eckhardt, 2024).

Table 2
Sex Distribution of respondents (n = 92)

Sex	Frequency	Percentage (%)
Male	44	47.8
Female	48	52.2
Total	92	100

The gender distribution of respondents shows a higher proportion of females (48%) compared to males (44%). This pattern reflects the employment practices in the UAE healthcare service sector, where female radiologic technologists are frequently employed due to cultural considerations related to patient care and gender-sensitive clinical procedures. The fact that women made up the majority of participants ensures that it accurately depicts the actual work environment in which Filipino RT graduates are employed. Without introducing gender bias into the overall findings, this distribution can also be utilized to understand how gender intersects with migration and professional practice in a global healthcare setting.

Table 3
Area of practice (n = 92)

Area of practice	Frequency	Percentage (%)
General radiography	41	41.0
Ultrasound	28	28.0
Interventional	16	16.0
CT Scan	5	5.0
MRI	2	2.0
Total	92	100

The majority of respondents work in a variety of clinical specialties, including general radiography (41%) and sonography (28%), followed by interventional (16%), CT scan (5%), and MRI (2%). The distribution shows that both traditional diagnostic practitioners and those working in more specialized interventional professions are included in the sample. Because advanced modalities (such CT/MRI) frequently call for particular hands-on exposure and training, this combination may lead to differences in perceptions of curriculum adequacy; students in specialized fields may report larger gaps if their programs did not include tailored modality training. According to constructivist learning theory, students who receive practical, context-rich instruction will feel more prepared in those specialized fields (Gavrilas & Kotsis, 2025).

Table 4

Number of years working as RT in the UAE (n = 92)

Years working in UAE	Frequency	Percentage (%)
Less than 1 year	41	44.7
1–2 years	15	16.3
3–4 years	10	10.9
5–6 years	12	13.0
7–8 years	5	5.4
9–10 years	4	4.3
11–12 years	4	4.3
13–14 years	1	1.0
Total	92	100

44.7% of them have lived in the UAE for less than a year. There are very few long-tenured employees (only 9% with ≥9 years), while the remaining are spread among growing experience bands. A significant percentage of recent arrivals suggests that, rather than long-term retrospective adjustment, many participants' perceptions are influenced by current curricular workplace fit. The reported preparation also reflects the most recent curricula and internship experiences in the Philippines due to this bias towards recent migrants. From the standpoint of Human Capital Flight, a significant percentage of recent migrants highlights the continuous global demand for the probability that many Filipino RT professionals will graduate shortly after training (Dempsey, 2024).

Table 5

Location (Emirate) of employment (n = 92)

Emirate	Frequency	Percentage (%)
Abu Dhabi	33	33.0
Dubai	34	34.0
Sharjah	25	25.0
Total	92	100.0

The study's external validity across the major UAE healthcare settings is improved by its even distribution in Abu Dhabi (33%), Dubai (34%), and Sharjah (25%). Because each

Emirate has different health systems (public vs. private, tertiary vs. community) and regulatory environments (licensing procedures may vary operationally), even distribution is a means to ensure that the results reflect a range of practice situations.

Table 6
Type of healthcare facility currently employed in (n = 92)

Facility type	Frequency	Percentage (%)
Government hospital	62	62.0
Private hospital/clinic	14	14.0
Diagnostic center	10	10.0
Others	06	0.06
Total	92	100.0

The majority of respondents (62%) are employed by government hospitals, followed by private clinics and hospitals (14%), diagnostic centers (10%), and other facilities (0.06%). RTs working in government hospitals in the United Arab Emirates may report higher expectations for initial preparation and may be more critical of gaps in pre-migration training because these facilities frequently serve as sizable tertiary centers with access to advanced modalities and structured continuing professional development (CPD) programs. According to Turin et al. (2021), the concentration at government hospitals also implies that employment channels (such as government hiring methods and bilateral recruitment) are significant contextual factors influencing views of curriculum relevance and certification readiness.

Table 7
Perceived Level of Global Relevance of Philippine RT Education In terms of Curriculum

Item (Curriculum)	Mean	SD	Interpretation
1. Strong foundation in fundamental courses (anatomy, procedures, physics, patient care)	3.70	0.78	High
2. Topics aligned with international RT standards (ARRT, HAAD, DHA, MOH)	3.60	0.82	High
3. Adequate skill development for global radiology practice (radiation safety, image assessment)	3.30	0.85	Moderate–High
4. Enhancement of critical thinking and problem-solving for complex imaging cases	2.80	0.90	Moderate
5. Exposure to recent trends and advancements (digital imaging, PACS, AI, advanced modalities)	2.57	0.95	Moderate–Low
Total / Grand Mean (sum of items)	15.97	—	—

Table 7 presents the respondents' assessment of the extent to which the Philippine RT curriculum provided globally relevant theoretical and technical foundations. *Curriculum Content* refers to the coursework, foundational sciences, imaging procedures, digital systems, and problem-solving competencies that shape graduates' readiness for international radiology practice. The sub-items under this area measure the strength of theoretical grounding (e.g., anatomy, physics, radiographic procedures), alignment with international standards

(ARRT, HAAD, DHA, MOH), adequacy of clinical and safety principles, problem-solving preparation, and exposure to advanced technologies such as PACS, digital imaging, and AI-assisted systems.

Higher means indicate stronger perceived curriculum adequacy. Qualitative interpretation ranges: 4.20–5.00 = Very High; 3.40–4.19 = High; 2.60–3.39 = Moderate; 1.80-2.59 = Low; 1.00-1.79 = Very Low. Means sharing a common subscript are not statistically different at $p < .05$.

Table 8

Perceived Level of Global Relevance of Philippine RT Education in Terms of Highest and Lowest Indicators for Curriculum Content (n = 92)

Category	Indicator	Mean	Qualitative Interpretation
Highest-Rated	Strong foundation in fundamental courses (anatomy, procedures, physics, patient care)	3.70	High
Lowest-Rated	Exposure to recent trends and advancements (digital imaging, PACS, AI, advanced modalities)	2.57	Moderate–Low

Table 8 clearly shows that foundational theoretical preparation is the strongest component of the curriculum, whereas exposure to advanced technologies represents the weakest area. This disparity provides a concrete basis for recommending curriculum modernization and increased advanced modality integration in the proposed action plan.

Table 9

Perceived Level of Global Relevance of Philippine RT Education in Terms of Faculty Qualification

Item (Faculty)	Mean	SD	Interpretation
1. Faculty provide up-to-date / foreign expertise in RT	3.70	0.76	High
2. Teaching methods (case-based, simulation, demonstrations) align with global standards	3.50	0.80	High
3. Faculty encourages critical thinking and clinical reasoning	3.30	0.84	Moderate–High
4. Clinical instructors equip graduates for global practice (patient safety, multicultural professionalism)	2.90	0.92	Moderate
5. Hands-on introduction to advanced imaging technologies (CT/MRI/PACS) by faculty	2.1657	0.98	Low
Total / Grand Mean (sum of items)	15.5657	—	—

Table 9 indicates how the respondents perceived faculty competence and quality of instruction in the process of developing global radiology preparedness. Faculty Qualification consists of the knowledge of professors, application of globally consistent instruction techniques, focus on critical analysis, clinical reasoning, multicultural professionalism, and the capacity to provide practical exposure to sophisticated imaging apparatus like CT, MRI, and digital radiography. The sub-items capture the role of the faculty in integrating theory and practice, foreign standards, and equipping students with international clinical settings.

Higher scores denote stronger agreement regarding the faculty's qualifications and

teaching effectiveness. Interpretation ranges follow the standardized scale used in Table 7. Means sharing a common subscript do not differ significantly at $p < .05$.

Table 10

Perceived Level of Global Relevance of Philippine RT Education in Terms of International Certification Preparedness

Item (Certification)	Mean	SD	Interpretation
1. Curriculum clarity relative to international certification requirements (ARRT/DHA/MOH)	3.20	0.88	Moderate–High
2. Institutional exposure to foreign institutions/ webinars / exchanges	2.90	0.95	Moderate
3. Training in both global and local healthcare models (protocols, ethics)	2.60	0.90	Moderate
4. Self-reported confidence to work in international radiology environments after graduation	2.40	0.98	Low–Moderate
5. Inclusion of credential/competency verification and licensing preparation in training	3.05	0.89	Moderate–High
Total / Grand Mean (sum of items)	14.15	—	—

Table 10 presents the results of respondents' perceptions of how well their education prepared them for international certification and licensing requirements. *International Certification Preparedness* encompasses curriculum clarity related to ARRT and UAE licensing competencies, exposure to global professional networks, knowledge of international healthcare models, confidence in overseas work settings, and integration of certification-related processes during training. These subitems reflect how effectively the program equipped graduates to meet global regulatory and practice standards.

Higher means reflect stronger confidence in international certification readiness. Qualitative interpretation uses the same cutoffs as Table 7. Means sharing a common subscript are not statistically different at $p < .05$.

How prepared do radiologic technology graduates feel to work in global healthcare settings

Table 11

Perceived Level of Global Relevance of Philippine RT Education in Terms of Global Relevance

Item (Global Relevance)	Mean	SD	Interpretation
1. Perceived applicability of PH training to international radiology practice (digital imaging, patient safety, modalities)	3.60	0.80	High
2. Education's preparation for actual international job responsibilities	3.40	0.85	High
3. Curriculum's global focus (procedures, standards, expectations)	3.20	0.88	Moderate–High
4. Faculty's role in global readiness	2.80	0.95	Moderate
5. Helpfulness of RT education for certification/licensing	2.00	0.98	Low
Total / Grand Mean (sum of items)	16.00	—	—

Table 11 summarizes the respondents' perceived global preparedness of their RT education. This construct includes applicability to international radiology environments, readiness for real workplace responsibilities, integration of global procedures and expectations, faculty influence on international preparation, and the program's contribution toward certification and licensing requirements abroad. These sub-items measure how well the curriculum, faculty, and training collectively align with global radiologic practice.

Higher means denote a stronger perceived global relevance to the education received. Interpretation follows the same ranges applied in earlier tables. Means with identical subscripts show no significant difference at $p <$ .05 based on post-hoc analysis.

Instrumentation

The first phase in the study process was a review of the literature on the global relevance of radiologic technology education in the Philippine radiologic technology influences its graduates' ability to find jobs overseas. This made it possible for the researcher to concentrate on the gaps in the corpus of previous work and formulate research questions that cut to the heart of the most pressing issues. As part of the study, the researcher also drafted the focus group instructions and survey. demographic, educational, occupational, and overall satisfaction with the survey's radiologic technologists program-related items. The researcher asked participants about their thoughts and experiences on how the radiologic technology education affects their chances of finding work abroad. The survey items were influenced by the works of Budhrani et al. (2018) and Malbas et al. (2023), which provided detailed frameworks for assessing educational program outcomes and employability. The focus group discussion guide was similarly informed by these references, aiming to elicit participants' thoughts and experiences with the radiologic technology educational system and its relevance to their employment prospects abroad.

To examine the Philippines' radiologic technology education in relation to worldwide standards of curriculum, faculty qualifications, and international certification preparedness, to contribute to the ongoing conversation over the effectiveness of the program (Carada et al., 2022). The study provides details on the skills, traits, and credentials that make Filipino graduates more marketable in the global job market and evaluates how well radiologic technology programs equip graduates with these skills and credentials.

The study's conclusions educate policymakers on how successfully the senior high school program achieves its goals and provide recommendations for improving its execution.

The results of the study shed light on the difficulties faced by Filipino graduates who were looking for work overseas and helped shape policies and initiatives that will address these difficulties. The report also highlights how the radiologic technology education has affected the standard of education in the Philippines and points out areas that still need improvement. Future studies on the nation's education and workforce development policies might build on the study's suggestions (Barrot, 2019).

Validation and reliability become even more critical when researching sensitive themes such as education and employment (Marlow, 2023).

A specific precaution was taken in this study to ensure the validity and integrity of our data. Participants were surveyed using proven procedures. The tools are examined in the study's pilot phase to verify that they can reliably collect data. The questions were clear, objective, and related to the study's goals. A 10-person pilot test ensured that the survey's validity and reliability were examined.

Since the median score was 70, responses to typical surveys were awarded 70 points. A 5-standard deviation suggests mediocre responder consistency. The internal consistency of a survey instrument is good if it has a Cronbach's alpha of 0.85 and reliable ratings of the research variables. Variables were measured with accuracy and dependability by the

survey equipment. The survey instrument data are reliable as a result of this.

To guarantee the validity and reliability of the research instruments adopted in this study, a validation process was conducted. Experts' validation of the survey and interview instruments was done through a panel of three experts with vast experience in education and employment research. The panel consisted of one university professor with a doctoral degree in Education and a focus on curriculum development, assessment, and education technology. These professors have published their works in reputable refereed journals and have had active participation in different educational research activities that are concerned with the implementation of educational reforms and the acquisition of employability skills. The other expert was a former dean of the college of radiologic technology and now a member of the board of radiologic technology, Philippine Regulatory Commission (PRC, Manila), with 20 years of experience in the international education system and policies. Their knowledge offered a broad insight into the general use of the research instruments and the specific relevance of the findings to the evaluation of the global impact of the Philippine radiologic technology education employability in foreign countries. The last expert was a psychologist with 20 years of experience in the field who assessed the instrument and the overall methodology used are rigorous, valid, credible, and accurate.

In the context of content validity, the experts scrutinized the instruments in order to ascertain that the questions posed were neutral, lucid, and appropriate to the study's aims. They reviewed survey and interview questions based on relevance, clarity, and sufficiency of the questions. The opinions of the experts were then carefully integrated to enhance the instruments and avoid influencing the data collected with bias or ambiguity.

In order to increase confidence in the instruments' validity, a pilot test was conducted on 10 respondents who were selected purposively and were similar to the actual study sample population. The pilot test focuses on such questions for the survey and interview to determine any problems that might occur and the degree of inter-observer reliability of the answers. The reliability analysis also provided a Cronbach's alpha of 0. 85 which reveals that there is a high internal consistency and the reliability of the constructed survey instrument. It helped to establish that the questions that we asked in the survey were indeed tapping into the variables of interest, and it gave the researcher confidence in the stability of the outcomes.

The processes of validation and reliability testing helped to establish that the research instruments applied in this study were both valid and reliable. A combination of structured and open-ended questions was used as this approach enhances the reliability of the data collected in relation to the global relevance of radiologic technologic education in the Philippines, perceived by radiologic technologists working in Abu Dhabi, Dubai, Sharjah, United Arab Emirates.

Data Collection

Both qualitative interviews and quantitative surveys were used in the data collection process. To better understand the variables on the global relevance of radiologic technology education in the Philippines, semi-structured interviews were performed with graduates currently employed in Abu Dhabi, Dubai, Sharjah, United Arab Emirates. Open-ended questions to get specific qualitative information. The interviews were recorded on audio and then verbatim transcribed for additional theme analysis.

The quantitative phase involved administering an online survey to a wider sample of Filipino radiologic technologists who are currently working in the different medical facilities in the United Arab Emirates. The survey questionnaire was sent through the appropriate channels to ensure a wide range of participation. The survey included both multiple-choice and open-ended questions to collect both quantitative and qualitative data. To do further data analysis, the responses were securely gathered.

To get more participants in faraway locations, a Google Form for the survey instrument

was sent to the target participants. For those residing near the location of the researcher, hard copies were provided. Interviews to gather data for qualitative analysis were done one-on-one via Messenger Chat, Zoom Chat, and face-to-face.

Results and Discussion

The work experience of the participants covered a set of major fields of radiologic practice: general radiology (41%), sonography (28%), interventional radiography (16%), CT scan (5%), and MRI (2%). These distributions show that graduates were exposed to a variety of clinical environments, which shows the extent of their training and the variety of skills needed to operate successfully in specialized healthcare environments. The educational settings were mostly government hospitals (57%), and there were also private hospitals/clinics (13%) and diagnostic centers (9%). The respondents were well spread in Abu Dhabi, Dubai, and Sharjah, such that the results captured differences in workplace settings, facility resources, and patient population.

These features of participants are consistent with the literature of labor migration, which highlights the fact that younger medical workers are prone to international opportunities at the beginning of their careers (Sweileh, 2024). Further, the sample size spread of the participants to the specialized radiologic areas follows the current trends in the workforce in the UAE, which is increasingly dependent on a skilled and mobile health workforce to address the technological and patient care needs. Another framework used to interpret the movement of the highly trained RT graduates out of the Philippines into the UAE is the human capital flight theory, which underlines the synergy between investment in education and international mobility of careers.

Quantitative analysis indicated that the participants rated the Philippine RT curriculum to be mostly high on representative theory and problem-solving competencies, and the overall mean score of 15.97 (out of the possible 25). Table 7 revealed that sub-items corresponding to foundational sciences, i.e., anatomy, physics, and radiographic procedures, had the most positive ratings, and it can be assumed that the curriculum is strong in the provision of core knowledge. Issues that were in agreement with international standards, like radiation safety, assessment of patients, and basic imaging practices, were also rated well. Nevertheless, the exposure to high-level technologies, such as digital imaging, PACS, and AI-assisted imaging, was relatively low, which can be improved to achieve the current global practice standards.

These quantitative tendencies were supported by qualitative findings. All the respondents repeatedly focused on the power of their background education. One of the respondents said, the RT program gave a great foundation in anatomy and radiographic procedures, and another one said, we were well prepared in fundamental physics and patient safety measures. Concurrently, the respondents pointed out the weaknesses of advanced modality training. One of the participants said, “I was not ready to work with CT and MRI machines in the UAE,” and another one explained, “AI-assisted imaging was not included in our practical training, which needed further learning after I had taken up the job”.

This is in line with constructivist learning theory that stressed the significance of engagement and the preliminary knowledge as a scaffold to support subsequent learning (Piaget, 1972). With this approach, students guide their education, and this is important in their presence abroad. Through role-playing lessons in the Philippines, discussing experiences in a report group, joining groups with other radiologic technologists from different nations, and examining international radiography cases to obtain deeper knowledge. Also, there is the theory of experiential learning (Adriano & Rosa, 2023; Mendoza et al., 2020), which indicates that, although graduates are well-versed in essential knowledge, further training is usually required to adjust to the more advanced modalities in the international environment. It also noted that gaining adaptive expertise depends on learning from various repeated experiences. Filipino radiologic technologists

moving to the United Arab Emirates healthcare sector keep learning and adjusting as they encounter a new culture.

The quality of the faculty appeared to be a major factor in the competence of graduates. Quantitative data of faculty qualification produced a mean of 15.56 with high ratings at the item level in terms of mentoring, clinical instruction, and development of critical thinking. The participants marked that tutors were good at influencing the students in clinical reasoning and evidence-based practice. One participant said, "My clinical instructor always encouraged us to think critically when evaluating patients, "and another participant said, "Faculty guidance helped me feel confident when managing routine cases involving imaging".

Although these strengths exist, there was a recurrent lack of exposure to the advanced imaging technologies. Respondents highlighted, "the faculty were good, however, we lacked practical exposure to highly-developed CT and MRI machines and technology, and the theory was taught well, however, we could have more technology integration". These lessons echo human capital theory (Becker, 1964), which states that faculty expertise is a key contributor to the knowledge base of graduates, but technological and global orientation are necessary to enhance labor mobility and international competitiveness.

The comparison of the standards with the UAE standards showed that faculty teaching is of satisfactory quality in the foundational and clinical spheres, but it needs improvement in terms of international exposure, technological up-to-date learning, and international protocols awareness. The qualitative data support the necessity to implement the faculty development programs, which concentrate on the new modalities, evidence-based practices, and international trends in the profession.

The willingness of the participants to get an international certification was rated fairly, with a mean of 14.15. Quantitative findings showed that respondents were overall confident in their awareness of the ARRT competencies, but they were not familiar with some specific licensing provisions in the UAE (HAAD/DHA/MOH) and other global credentialing mechanisms. These gaps were manifested in qualitative comments. One of them said, "I knew the theory of ARRT exams, but the UAE protocols were very different, and another claimed local patient management procedures were very different, and at first, initial adjustment was a problem."

The above findings highlight the significance of international alignment of Philippine RT curricula with international professional standards in facilitating the mobility of the workforce across the globe. Professionalization theory highlights the importance of systematic preparation to credentialing and licensing as an attribute of professional credibility and employability (Demazière, 2024). Past studies (Jonbekova et al., 2021) also find that certification training lowers the time of adaptation and enhances the confidence of the graduates in foreign working environments.

In general, the respondents scored the global relevance of their Philippine RT training between medium and high. Graduates valued the knowledge basics, problem-solving, and clinical skills their programs gave them. One of the respondents commented, the program made me ready to work with patients and do basic radiographic procedures, which are universal, but another one replied, I needed more training concerning digital systems and PACS in the UAE. Clinical internships were observed to be advantageous in terms of confidence, skill enhancement, but the respondents pointed out that various aspects of operating within different equipment standards, patient protocols, and hospital settings were difficult to adapt.

The combination of quantitative and qualitative results indicates that the Philippine RT education is beneficial in the formation of fundamental competencies but needs specific improvements in the areas of technology exposure, familiarity with international procedures, and certification preparedness. These results are similar to human capital flight theory, which identifies the transfer of well-trained professionals in search of high-skilled opportunities in other countries, and the theory of experiential learning, which puts a strong emphasis on the relevance of practical experience in developing global competencies.

Conclusions

The research concludes that the Philippine RT education is efficient in preparing graduates with the basic theoretical knowledge, clinical, and problem-solving skills that are needed in the international practice in radiologic technology. The quality of the faculty helps to develop the competence of the graduates, but there are still some gaps in the areas of advanced modality exposure, global orientation, and preparation for international certification. Philippine RT graduates have a high level of basic competencies, which need additional training to attain full global preparedness. The rationale is in favor of the combination of constructivist and experiential learning practices, focusing on the cognitive underlying framework as well as the practical involvement to enhance global employability.

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