

**PERFORMANCE EVALUATION TOOL FOR RADIOLOGIC TECHNOLOGY INTERNS  
OF LORMA COLLEGES**

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## ENDORSEMENT

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## ABSTRACT

Radiologic Technology Internships are vital for developing clinical competence. However, the lack of standardization in performance evaluation tool poses a challenge to the accuracy, reliability, and fairness of assessing the Radiologic Technology intern's clinical competencies. This study describes the development and implementation of a performance evaluation tool to assess the clinical competencies of Radiologic Technology interns at Lorma Colleges, aligned with the program outcomes outlined in CHED Memorandum Order No. 7, Series of 2018. Utilizing a descriptive-comparative approach, the study compared self-assessments from 48 interns with evaluations from 3 clinical instructors and 30 hospital affiliation staff to identify strengths and areas for improvement. Results showed that interns were rated from "Highly Proficient" to "Outstanding" across all areas, with the highest scores in ethical practice (4.91), nationalism (4.86), and patient care (4.82). Lower scores were noted in academic research and lifelong learning. Statistical analysis revealed significant differences in ratings among evaluator groups in seven out of eight areas ( $p < 0.05$ ), yet overall performance remained at or above the expected competency level. These result validates the evaluation tool's applicability in assessing intern's performance and confirm its alignment with CHED's program outcomes. It is therefore recommended that the evaluation tool continue to be used, with enhancements focused on leadership, research engagement, and lifelong learning to ensure the holistic development of future radiologic technologists in line with both professional standards and evolving demands of healthcare.

*Keywords: clinical performance, clinical skills, Internship, evaluation, performance evaluation, Radiologic Technologist*

## CHAPTER I

### The Problem

#### Background of the Study

Medical professionals are an essential and integral component of healthcare systems worldwide. The actions and practices of medical professionals significantly impact the health and well-being of individuals and societies. Medical professionals face challenging situations daily, often working in unpredictable, unregulated environments with limited resources. Due to the demanding nature of work and the diverse scenarios they regularly encounter, medical professionals are required to communicate effectively with patients and their families while managing high levels of stress and time constraints. They must be independent, resourceful problem solvers, and capable of handling significant responsibilities. Before becoming a medical professional, students will undergo an internship program.

Internships offer both academic and emotional growth, equipping students with essential skills for their future careers (Hora et al., 2020). These experiences bridge classroom learning with professional practice, fostering independence and competency in the field. It helps students transition from a phase of dependent, supervised practice to one of independent, collaborative practice. This experience serves as a foundation for applying knowledge, developing skills, and integrating into professional environments. In essence, internships offer students practical exposure to real-world situations that involve actual patients, while also incorporating the attitudes, values, and beliefs associated with professional practice. An internship provides the first orientation for students to apply academic knowledge to real-world problems through engagement in job-relevant activities (To & Lung, 2020). Internship comprises an array of several

learning experiences, such as academic learning, cooperative learning, applied practicum, and community service learning (Bae et al., 2022).

The field of radiologic education has evolved significantly over time, and some of its innovations are now being used nationwide, (Cerbito, et.al 2020). Clinical experiences remain a fundamental part of radiography education, providing students with the necessary foundation to practice safely and effectively. A strong educational framework ensures that radiography professionals have the competence, knowledge, and skills needed to excel in their roles (McNulty, 2021). According to Ampaso et al. (2022), academic success is essential to any educational institution and that preparation is the key ingredient of success. As specified by Cerbito et. al (2021), radiologic education has evolved significantly over the years, with certain breakthroughs that have left the country catching up. The field has transitioned from analog to digital imaging, a shift that has left many developing countries behind. With the rapid advancement of technology over the past two decades, the demand for medical radiography at all levels of patient care has grown substantially (Gholami, 2018). Recent progress in radiologic sciences has opened up new imaging possibilities for technologists and educators, as well as innovative methods for integrating didactic and clinical learning and training in radiology programs.

Clinical learning is an area that emphasizes and explains the importance of a Radiologic Technology student's performance in the clinical setting, which helps them to practice their skills, development of professional identity, enhance knowledge, and application of theoretical and practical knowledge in the clinical setting and readiness among interns to assume professional practice has to be critically attended, particularly due to increasing demands in the healthcare sectors for competent Radiologic Technologists. Before becoming professionals, paramedics must complete an internship program. The internship is the most anticipated and dreaded part of

college for paramedical students since it allows them to apply the knowledge they have learned from books and lecturers when they start their duty and begin working in a hospital. In Radiologic Technology, The Bachelor of Science in Radiologic Technology program requires students to complete an eleven-month practical clinical rotation in the following areas: General Radiography and the different subspecialties of Radiology, including CT Scan, MRI, Interventional Radiology, Nuclear Medicine, Radiation Therapy, and Ultrasonography, at various hospitals.

The fourth-year Bachelor of Science in Radiologic Technology degree is dedicated to the Radiologic Technology Clinical Education Training Program, which was divided into Clinical Education I and Clinical Education II, each lasting at least five and a half (5-1/2) months. Girn et al. (2022) stated that students will inevitably encounter challenging circumstances when working in diverse and dynamic clinical settings. For the duration of their training, interns must work and undergo a minimum of eight hours of duty a day, five days a week, in the hospital. They must also observe, assist, and participate in about two hundred (200) specialized radiologic procedures (such as CT-Scan, MRI, radiation therapy, and nuclear medicine) and eight hundred (800) general radiographic examinations. For the eleven-month training period, the internship requires forty-eight (48) hours each week, for a total of two thousand one hundred twelve (2,112) hours.

The objective of the program is to help them apply their knowledge in anatomy, physiology, positioning, and radiographic techniques so they can accurately demonstrate the part they are studying and enhance their ability to choose the appropriate exposure factors and evaluate radiographs accurately. The program also aims to improve their knowledge, skills, and attitudes regarding the use of radiation protection principles, laws, and regulations governing the use of ionizing and non-ionizing radiation in medicine. Another purpose of this program is to increase their confidence in using independent judgment and discretion when performing

technical medical and diagnostic imaging and therapeutic procedures and to create competent, moral, and globally competitive radiologic technologists who are interested in using cutting-edge scientific techniques in medical imaging and therapy. Furthermore, this program also aims to cultivate an understanding of technological advancements in the field of radiologic sciences and critical thinking abilities. The interns are expected to gain a deep understanding of anatomy and physiology, proficiency in radiographic techniques, a strong sense of professional ethics, and the ability to adapt to technological advancements in the field.

The radiologic technology curriculum is designed to meet the profession's requirements as stated in the program outcome based on the CMO 07 of the R.A. NO. 7722, otherwise known as the "Higher Education Act of 1994," pursues an outcome-based quality assurance as advocated under CMO no. 46. s. 2012, and under Commission en Banc Resolution No. 932-2017 dated December 4, 2017, the following policies, standards, and guidelines (PSG) are hereby promulgated by the Commission. One of the major features of outcomes-based education for interns is the clinical evaluation tool. This tool helps to assess student progress concerning much more defined criteria and stated course objectives (Cleveland University, 2018). Clinical internships are vital to the training curriculum, requiring students to meet established standards and demonstrate consistent progression throughout each academic year. However, students' clinical competency seems to be declining during their internship, highlighting the urgent need for the proposed enhancement program.

Clinical competency is a critical measure of a radiologic technology student's readiness to practice in real-world healthcare settings. It encompasses performing technical procedures accurately, making sound clinical decisions, and adhering to ethical and safety standards. Despite rigorous academic and clinical training, some students exhibit poor clinical competency, raising

concerns about the effectiveness of current educational approaches. Several factors may contribute to the decline in clinical competency among students. One primary factor is the gap between theoretical knowledge and practical application. While students may excel in classroom learning, transitioning to hands-on clinical tasks can be challenging, particularly when encountering unfamiliar procedures, complex cases, or high-pressure environments. A study by Moore and Hawkins-Walsh (2020) highlighted that virtual patient scenarios and case studies can narrow the theory–practice gap by allowing students to apply knowledge through simulated patient experiences, emphasizing the importance of practical application in clinical education. Additionally, insufficient exposure to diverse clinical cases during internships may limit their ability to effectively adapt and apply learned concepts. Research by Abloushi et al. (2023) found that nursing students reported lower confidence in performing advanced clinical skills, attributing this to limited hands-on experience during their training, which underscores the need for diverse clinical exposure. Furthermore, a study by Tambunan (2024) emphasized that nursing students often struggle to apply theoretical knowledge in clinical settings, underscoring the persistent theory-practice gap in nursing education. These findings highlight the urgent need for enhanced educational strategies that provide both theoretical foundations and ample, supervised clinical opportunities to bridge the gap between classroom learning and real-world practice. Another significant factor is the quality and consistency of clinical supervision. Inadequate mentoring by clinical instructors or a lack of timely feedback can hinder students from refining their skills and addressing deficiencies. Similarly, variations in the standards and expectations across clinical training sites may lead to inconsistencies in learning experiences. Other contributory factors include students' challenges, such as low self-confidence, anxiety, or inadequate time management. These issues can impede their ability to focus, perform procedures accurately, and

engage in critical thinking. Institutional factors, such as overcrowded clinical rotations, outdated equipment, or insufficient access to training resources, can further exacerbate the problem.

Performance evaluation tools are essential in assessing the clinical competencies of radiologic technology students, ensuring they meet the standards required for professional practice. Recent studies have focused on developing and refining these tools to enhance their effectiveness and alignment with educational outcomes. Chon (2019) conducted a study to determine the clinical proficiencies of radiologic technology interns, aiming to develop a competency-based performance evaluation tool. The research highlighted the importance of articulating specific clinical proficiencies to create effective assessment instruments. Additionally, the role of technology in assessment has been explored to improve the evaluation process. Modern tools assist in assessing, documenting, and tracking competencies in radiography, enhancing performance evaluations' efficiency and accuracy.

Regular performance evaluations are essential in educational settings, serving as a cornerstone for enhancing teaching quality and student outcomes. Recent studies have underscored the significance of systematic assessments in fostering professional development and ensuring educational excellence. A 2019 National Center for Education Statistics report highlights that teachers perceive evaluations as tools to guide the improvement of teaching skills, recognize and reinforce teaching excellence, and help focus on student outcomes. These formative objectives are pivotal in promoting professional growth and instructional effectiveness. Radiology is a medical specialty that uses more forms of energy from gamma rays, x-rays, radiopharmaceuticals, sound waves, and magnetic resonance imaging in their diagnosis and treatment of disease. Indeed, radiology is fast growing with discoveries each day relevant to the increasing demands of the health industry.

This study sought to evaluate the performance of interns using the Program Outcomes specified to the Bachelor of Science in Radiologic Technology of the interns and propose an enhancement program that can strengthen the low-performing identified Radiologic Technologist interns. The results of this study will be valuable for Radiologic Technology students, interns, instructors, institutions, and future researchers as it enhances intern assessment and training, ensuring graduates are competent and prepared for professional responsibilities. By evaluating intern performance based on program outcomes, the study improves patient care, identifies skill gaps, and provides educators with insights for curriculum improvement. It supports clinical instructors in refining training methods, helps colleges align academic programs with industry standards, and assists healthcare institutions in developing tailored training initiatives. Policymakers can use the findings to shape educational regulations, improving overall radiologic education quality. Additionally, the study serves as a valuable reference for future researchers looking to enhance clinical instruction and assessment methods in radiologic technology.

### **Theoretical Framework and Conceptual Framework**

The study's theoretical framework serves as the foundation for examining the connection between academic preparation and clinical performance. It provides a structured approach to understanding how the specified program outcomes shape the knowledge, skills, and attitudes of radiologic technology interns and influence their readiness for professional practice. This study is grounded on three key educational theories: Outcome-Based Education (OBE), Bloom's Taxonomy of Learning Domains, and Kolb's Experiential Learning Theory.

The foundation of this study is grounded in the principles of Outcome-Based Education (OBE), that has a learner-centered approach that emphasizes what students are expected to

know, do, and value after a learning experience. This focuses on clearly defined learning outcomes, aligning instruction and assessment to guarantee that students meet them by the end of a course (Spady, 1994). The core principles of this educational theory aligns seamlessly with the CHED Memorandum Order No. 07, Series of 2018, which outlines the policies, standards, guidelines, and learning outcomes for the Bachelor of Science in Radiologic Technology program with an emphasis on ensuring competencies meet specified academic and professional standards.

In health-profession education, Outcome-Based Education has been widely adopted to align training programs with the real-world demands of medical practice. It ensures that graduates are evaluated on their capacity to carry out necessary duties rather than simply completing the coursework. By integrating Outcome-Based Education to Performance evaluation tool, it provides a reliable framework for assessing interns' readiness for clinical practice, promoting higher-quality education and better-prepared professionals in the actual radiologic field.

Bloom's Taxonomy of Learning Domains was developed by Benjamin S. Bloom and a group of educational psychologists in 1956. Bloom's Taxonomy provides a structured approach to evaluating Radiologic Technology interns across cognitive, psychomotor, and affective domains, ensuring alignment with field-specific competencies. Bloom's Taxonomy of Learning Domains is relevant to the study because it provides a comprehensive framework for evaluating the various competencies expected from Radiologic Technology interns. The taxonomy's three domains—cognitive, psychomotor, and affective—address the essential knowledge, skills, and attitudes required in clinical practice.

By incorporating these domains, the study ensures that interns are assessed not only on their technical abilities but also on their ethical behavior, professionalism, and ability to make informed decisions. This aligns with the Program Outcomes specified in CHED Memorandum Order No. 07, Series of 2018, which emphasizes a well-rounded approach to training that includes both theoretical understanding and practical application. Therefore, Bloom's Taxonomy serves as a valuable tool for evaluating interns' overall readiness for professional practice.

Kolb's Experiential Learning Theory was developed by David A. Kolb in 1984. David Kolb's experiential learning theory states that learning happens through a continuous cycle of gaining and changing experiences. It revolves around the idea that learning occurs through a cyclical process of grasping and transforming experiences. Because it emphasizes the value of experiential learning throughout clinical training, this theory is relevant to our research. We may examine how fourth-year health sciences students interact with and adjust to their clinical experiences using this paradigm. Gaining an understanding of Kolb's learning cycle, which consists of concrete experience, abstract conceptualization, reflective observation, and active experimentation, might help one better understand how people learn and interpret their clinical experiences.

Kolb's Experiential Learning Theory is relevant to the study because it emphasizes the importance of learning through direct experience, reflection, and application. In the context of Radiologic Technology internships, interns gain practical, hands-on experience in clinical settings, allowing them to develop and refine their skills through real-world exposure. Kolb's four-stage model—concrete experience, reflective observation, abstract conceptualization, and active experimentation—aligns with the stages of learning that interns go through. This theory ensures

that their learning is not just theoretical but deeply rooted in practical application, helping them apply knowledge, adapt to challenges, and grow professionally.

The conceptual framework is designed to analyze how these outcomes align with the interns' practical performance, focusing on their clinical competencies, critical thinking, ethical standards, and professional growth. It integrates the program outcomes as evaluation criteria and examines their application in real-world clinical settings. This approach provides a structured and evidence-based perspective for assessing the alignment between academic preparation and clinical performance, highlighting the relevance of CHED's prescribed standards in shaping future healthcare professionals

The paradigm used the Input-Process-Output Model. The input consists of the level of performance of Radiologic Technology interns as evaluated by interns, clinical instructors, and hospital staff. The process incorporates collecting data from the respondents through the distribution of survey questionnaires, followed by compilation, interpretation, and analysis using statistical tools. The output of the study is the assessment of interns' performance in key indicators, with recommendations to enhance the evaluation tool.



Figure 1. Research Paradigm

### **Statement of the Problem**

This research aimed to evaluate the performance of Radiologic Technology interns in relation to the program outcomes specified in the Bachelor of Science in Radiologic Technology curriculum. It is to identify strengths and areas of their performance. Specifically, the study aimed to answer the following questions:

1. What is the level of performance of Radiologic Technology interns as evaluated by the Radiologic Technology Interns, Clinical Instructors, and Hospital of Affiliation Staff:
  - a. Application of Scientific Knowledge, Technical Skills, and Professional Values;
  - b. Local and International Professional Ethical Practice;
  - c. Radiation Safety and Protection Measurement;
  - d. Patient Care;
  - e. Leadership, Management, and Entrepreneurial Skills;
  - f. Academic and Research Activities;
  - g. Continuous Life-long Learning; and
  - h. Nationalism
2. Are there significant differences in the level of performance of Radiologic Technology interns according to the evaluation of the Radiologic Technology Interns, Clinical Instructors, and Hospital of Affiliation Staff?
3. Based on the findings of the study, what enhancements can be proposed for the performance evaluation tool?

**Hypothesis**

There are no significant differences in the level of performance of Radiologic Technology interns as evaluated by Radiologic Technology Interns, Clinical Instructors, and Hospital of Affiliation Staff.

## **CHAPTER II**

### **Methodology**

Chapter 2 presents the research methodology used in this study. It includes the research design, population and locale of the study, data gathering tools, data collection procedures, and data treatment. These components guided the researchers in collecting, analyzing, and interpreting the findings of the study.

#### **Research Design**

This research utilized a descriptive-comparative approach, which compares the likenesses and differences among phenomena to determine whether certain factors or circumstances (e.g., professional development) tend to accompany certain events, conditions, or processes, in this case, classroom quality (Goodwin & Goodwin, 1996). The descriptive component assessed the interns' performance based on specific program outcomes, while the comparative component determined if significant differences exist in performance evaluations between interns, clinical instructors, and hospital of affiliation (HA) staff .

#### **Population and Locale of the Study**

This study was conducted at two affiliated hospitals, namely Lorma Medical Center and Ilocos Training Regional Medical Center (ITRMC) with the respondents of Lorma Colleges Radiologic Technology interns, clinical instructors, and hospital of affiliation (HA) staff for the school year 2024-2025. This study used total enumeration sampling to the (48) Radiologic Technology interns and three (30) clinical instructors from both affiliation hospitals. Meanwhile, due to time constraints and limitations in accessibility and availability during the data collection period, convenience sampling was employed. Out of the total population of sixty (60) hospital of

affiliation (HA) staff from Lorma Medical Center and Ilocos Training and Regional Medical Center (ITRMC), only thirty (30) were selected as respondents, representing 50% of the total staff.

All of the respondents were given informed consent and were asked to participate fully, noting that their participation is entirely voluntary and that they are free to withdraw anytime. Their identity remained anonymous and identified according to the codename given by the researchers, such as R1, R2, and so on. They were assured that all the information they provided will be treated with utmost confidentiality by maintaining trust, ensuring compliance with ethical standards and regulations, and preventing unauthorized access to sensitive data that could harm individuals or compromise the integrity of the study, as required by the Data Privacy Act of 2012 (RA 10173), and solely for this study only.

#### **Data Gathering Tool**

The researchers disseminated the created sets of survey questionnaires to gather the necessary data. In addition, the questions are based on program outcomes specified to the Bachelor of Science in Radiologic Technology under CHED Memorandum Order No. 7 series of 2018 and included questions using a five-point Likert scale. The survey questionnaire is fixed-alternative as closed-ended questions.

The questionnaire is divided into eight parts. The first part measures the application of scientific knowledge, technical skills, proper work attitude, and values with five items. The second part has two choices that measure local and international professional ethical practices. The third part has six choices that measure radiation safety and protection measures. The fourth part measures patient care with six items, while the fifth part measures leadership, management, and entrepreneurship with six items. Furthermore, the sixth part measures academic and research activities with three items. The seventh part measures continuous life-long learning with five

items. Lastly, the eighth part measures nationalism with three items, and the choice of the questionnaire is a five-point Likert scale.

To check the validity of the questionnaire, the researchers presented it to validators who had professional experience as radiologic technology instructors, radiologic technologists, or department dean of health allied course to ensure the reliability and overall quality of the developed tool.

### **Data Gathering Procedure**

Before collecting data, the researchers followed a structured process to ensure ethical integrity and with careful attention to the methods used. The researchers submitted a research proposal to the Research Ethics Committee, and the Dean of the College of Radiologic Technology reviewed and approved the research proposal to ensure academic integrity and confirmed adherence to the ethical principles of our research study to protect respondents' welfare. Ethical considerations were prioritized, including obtaining informed consent from all respondents, ensuring that all ethical guidelines were followed, and ensuring the respondents' anonymity is protected throughout the study. After permission had been granted, the researchers disseminated the questionnaire to the respondents. The researchers provided an electronic copy using Google Forms that they responded to in their leisure time.

All respondents were informed about the potential risks and benefits, the study's purpose, methodology, and their role in the research. The researchers respected the respondents' identities by coding them as respondents R1, R2, and so on. Each participant will be asked to sign an informed consent form before participation, acknowledging their understanding of the study's goals and their voluntary involvement. The study used a structured questionnaire that was distributed to all respondents via Google Forms. The interns completed a self-assessment section

regarding their clinical performance, while clinical instructors and hospital of affiliation staff provided their assessments based on direct observations of the interns.

The researchers explained the instructions for completing the questionnaires and were available to clarify any questions participants had. To maintain participant privacy, all data was anonymized before analysis. No personally identifiable information was shared, and all results were reported in aggregate form. Participation in the study is voluntary, and participants could withdraw at any time without consequences. Informed consent was obtained, ensuring that respondents understood the study's purpose, the procedures involved, and how their data will be utilized.

The completed questionnaires were collected one week from the day the researchers distributed the questionnaires to ensure thoughtful and comprehensive answers. All collected data was securely stored in a protected database, and the responses were entered into this system for systematic analysis. The electronic copy of the data was kept on a computer only the researchers can access. The data collected will be stored for five years and will be destroyed after that period of time. The results of this study were shared with the researchers and respondents alone and will not be shared with anyone else. The performance data was averaged to provide an overall assessment of the Radiologic Technology interns' clinical competencies.

### **Treatment of Data**

Upon completion of data collection from Radiologic Technology interns, clinical instructors, and hospital of affiliation staff, appropriate statistical tools were utilized to analyze the data.

The weighted mean were analyzed and interpreted using a Likert scale to assess the level of performance of Radiologic Technology interns.

**Table 1. Descriptive Equivalent Rating for the Level of Performance of Radiologic Technology Interns.**

| Rating Scale | Weighted Mean | Descriptive Equivalent | Interpretation   |
|--------------|---------------|------------------------|--|
| 5            | 4.51-5.00     | Outstanding            | Performs Radiologic Procedures according to protocols and demonstrates all tasks and procedures independently and correctly. |
| 4            | 3.51-4.50     | Highly Proficient      | Show strong competence with minor areas for improvement.   |
| 3            | 2.51-3.50     | Proficient             | Show competence in some areas but may need guidance and improvement.   |
| 2            | 1.51-2.50     | Moderately Proficient  | Show basic understanding but needs major improvement and supervision.  |
| 1            | 1.00-1.50     | Developing Proficiency | Failed to perform all the tasks and procedures assigned.   |

**Statistical Tools for Each Objective (SOP):** To address the research objectives effectively, the following statistical tools were utilized:

Frequency Distribution and Weighted Mean were used to summarize the level of performance of Radiologic Technology interns as evaluated by: Radiologic Technology Interns, Clinical Instructors, Hospital of Affiliation Staff in terms of: 1.a. Application of Scientific Knowledge, Technical Skills, and Professional Values; 1.b. Local and International Professional Ethical Practice; 1.c. Radiation Safety and Protection Measurement; 1.d. Patient Care; 1.e. Leadership, Management, and Entrepreneurial Skills; 1.f. Academic and Research Activities; 1.g. Continuous Life-long Learning; and 1.h. Nationalism. These tools gave a clear understanding of the overall level of performance of the Radiologic Technology interns as evaluated by Radiologic Technology Interns, Clinical Instructors, and Hospital of Affiliation Staff, as well as the variability within their responses.

Analysis of Variance (ANOVA) was used to compare the significant difference in the level of performance of Radiologic Technology interns as evaluated by Radiologic Technology Interns, Clinical Instructors, and Hospital of Affiliation Staff. This statistical tool determined whether the differences between the three groups are statistically significant. If significant differences are found, post-hoc tukey tests were used to identify the specific areas where the evaluations differ.

Moreover, the researchers utilized Microsoft Excel to quantitatively analyze complex data to gather accurate computations and decrease the chance of committing an error. Microsoft Excel improved the calculation performance since it minimizes the calculation time of data in the study by continuously tracking the precedents and dependencies for each formula and any changes made. It also reduced the need to plot data, increasing data interpretation difficulty (Fast et al., 2022). To ensure the accuracy of the treated data, the statistician statistically checked the data that the researchers computed. These treatments aided the researchers in the data interpretation and broadened the scope of information and conclusions drawn for the beneficiaries.

## CHAPTER III

### Results and Discussion

This chapter presents the presentation, analysis, and interpretation of the data gathered from the survey questionnaires floated in the two affiliated hospitals regarding the performance level of the Radiologic Technology interns.

#### Level of Performance of Radiologic Technology Interns

The level of performance was assessed in eight key competency areas based on CHED Memorandum Order No. 7, Series of 2018. Table presentations reflect the weighted mean and descriptive interpretation of each competency area from the perspectives of the three respondent groups.

##### a. Application of Scientific Knowledge, Technical Skills, Proper Work Attitude, and Values

Table 2 presents the Level of Performance of Radiologic Technology Interns in terms of Application of Scientific Knowledge, Technical Skills, Proper Work Attitude, and Values.

**Table 2. Level of Performance of Radiologic Technology Interns in terms of Application of Scientific Knowledge, Technical Skills, Proper Work Attitude, and Values**

| Indicators  | Weighted Mean |             |             | Overall     | DER                |
|---|---------------|-------------|-------------|-------------|--------------------|
|   | RTI           | CI          | HAS         | WM          |                    |
| 1. Performs radiologic procedures according to protocols                        | 4.67          | 5           | 4.80        | <b>4.82</b> | Outstanding        |
| 2. Positions the patient correctly during a procedure                           | 4.83          | 4           | 4.50        | <b>4.44</b> | Highly Proficient  |
| 3. Recognizes problems in image quality and institutes measures to address them | 4.58          | 4.33        | 4.40        | <b>4.44</b> | Highly Proficient  |
| 4. Practices good housekeeping after every procedure                            | 4.81          | 5           | 4.63        | <b>4.81</b> | Outstanding        |
| 5. Demonstrates a good working relationship with colleagues                     | 4.69          | 5           | 4.60        | <b>4.76</b> | Outstanding        |
| <b>Overall WM</b>   | <b>4.72</b>   | <b>4.67</b> | <b>4.59</b> | <b>4.66</b> | <b>Outstanding</b> |

**Legend:** RTI = Radiologic Technology Interns; CI = Clinical Instructors; HAS = Hospital Affiliation Staff; WM = Weighted Mean; DER = Descriptive Equivalent Rating.

The table displays the performance evaluation results for Radiologic Technology Interns based on the four categories: scientific knowledge, technical skills, work attitude, and values. The overall rating is “Outstanding” with a general weighted mean of 4.66. The interns performed strongest in technical execution and professional conduct. The lowest mean score (4.44) was noted in the area of recognizing image quality issues, indicating a need for further development in critical analysis skills.

All three evaluator groups—interns, clinical instructors, and hospital affiliation staff—rated the interns highly proficient in areas such as protocol adherence, good housekeeping, and collaboration. However, slightly lower scores were observed in patient positioning and image quality recognition, particularly from hospital staff and clinical instructors, indicating room for improvement in technical judgment and situational decision-making. This suggests that while interns are competent in performing routine tasks, they may need further training in dynamic, non-standard procedures.

Awadallah et al. (2023) emphasized that while students often excel in structured clinical tasks, exposure to diverse, complex cases is critical for developing independent decision-making skills. Similarly, Ampaso et al. (2022) found that high academic performance does not always correlate with clinical precision, particularly in rapidly evolving radiologic environments. These results highlight the importance of targeted support in advanced technical areas—such as patient positioning accuracy and radiograph assessment—which are essential for diagnostic quality and patient safety.

Furthermore, Umbar and Sison (2025) conducted a research study on the attitude, skills, and clinical competency of radiologic technology interns in general radiography, emphasizing the significance of technical proficiency and professional values in achieving higher clinical

competency. The study they conducted shows that interns with good technical skills and a positive work attitude perform better in patient care, positioning, and image acquisition, supporting the theory that structured training programs improve diagnostic accuracy and patient outcomes. This study supports the findings of our research, which found that interns showed good competency in patient care, technical execution, and professional ethics, resulting in higher accuracy in radiography procedures. The findings confirm that clinical training programs and competency-based education models are critical in developing radiologic interns into highly skilled professionals capable of providing quality healthcare services.

#### **b. Local and International Professional Ethical Practice**

Table 3 presents the Level of Performance of Radiologic Technology Interns in terms of Local and International Professional Ethical Practice.

**Table 3. Level of Performance of Radiologic Technology Interns in terms of Local and International Professional Ethical Practice**

| Indicators   | Weighted Mean |          |             | Overall WM  | DER                |
|--|---------------|----------|-------------|-------------|--------------------|
|  | RTI           | CI       | HAS         |             |                    |
| 1. Observes "patient confidentiality" and the other provisions of the Patient's Bill of Rights | 4.92          | 5        | 4.83        | <b>4.92</b> | Outstanding        |
| 2. Practices the Code of Ethics of the profession  | 4.90          | 5        | 4.73        | <b>4.88</b> | Outstanding        |
| <b>Overall WM</b>  | <b>4.91</b>   | <b>5</b> | <b>4.78</b> | <b>4.90</b> | <b>Outstanding</b> |

**Legend:** RTI = Radiologic Technology Interns; CI = Clinical Instructors; HAS = Hospital Affiliation Staff; WM = Weighted Mean; DER = Descriptive Equivalent Rating.

It can be gleaned that the performance of Radiologic Technology interns in terms of Local and International Professional Ethical Practice is commendable. The overall weighted mean of 4.90 classifies the interns' performance in this area as "Outstanding", with interns rating

themselves at 4.91, clinical instructors at a perfect 5.00, and hospital affiliation staff at 4.78. This suggests a strong internalization and demonstration of ethical standards, both in local and international contexts.

The exceptionally high ratings across all groups indicate that the interns are not only knowledgeable about ethical principles but are consistently applying them in clinical practice. This reflects the success of the BSRT curriculum in embedding ethical training within both academic instruction and clinical exposure, aligning with the affective domain of Bloom's Taxonomy, which emphasizes the development of values, attitudes, and ethical reasoning.

This high level of ethical performance implies that the training program has successfully integrated ethics education into both classroom and clinical instruction. As Hlaing et al. (2023) noted, clinical internships are essential in reinforcing ethical behaviors as students face real-world patient care scenarios. Furthermore, Alipour et al. (2020) found that a supportive and well-structured clinical environment helps interns develop a strong sense of professional responsibility and adherence to ethical standards. The slightly lower score from hospital staff may suggest that while interns perform ethically, consistency in unfamiliar or high-pressure situations could still be enhanced. This underscores the importance of reflective practice and mentoring in building ethical resilience.

In addition, the International Society of Radiographers and Radiological Technologists (ISRRT) Code of Ethics (2022) emphasizes patient safety, confidentiality, and informed consent, ensuring that radiologists adhere to the highest ethical standards. Our findings reveal that interns perform well at professional ethics, particularly in patient interaction, privacy protection, and adherence to procedural guidelines. This is consistent with the ISRRT's principles, which

emphasize the significance of maintaining trust and protecting patient rights during medical imaging procedures.

### c. Radiation Safety and Protection Measures

Table 4 presents the Level of Performance of Radiologic Technology Interns in terms of Radiation Safety and Protection Measures.

**Table 4. Level of Performance of Radiologic Technology Interns in terms of Radiation Safety and Protection Measures**

| Indicators   | Weighted Mean     |             |             | Overall WM  | DER         |                    |
|--|-------------------|-------------|-------------|-------------|-------------|--------------------|
|  | RTI               | CI          | HAS         |             |             |                    |
| 1. Wears protective shields, e.g. lead aprons and goggles, when performing radiological procedures | 4.67              | 5           | 4.70        | <b>4.79</b> | Outstanding |                    |
| 2. Collimates the area of exposure   | 4.71              | 4.67        | 4.47        | <b>4.62</b> | Outstanding |                    |
| 3. Utilizes the lowest possible exposure technique factors   | 4.69              | 5           | 4.47        | <b>4.72</b> | Outstanding |                    |
| 4. Prevents unnecessary patient radiation exposure   | 4.73              | 5           | 4.43        | <b>4.72</b> | Outstanding |                    |
| 5. Restricts persons in the exposure area during radiological procedures                           | 4.90              | 5           | 4.70        | <b>4.87</b> | Outstanding |                    |
| 6. Closes the x-ray room and ensures that the red light is on during exposures                     | 4.92              | 5           | 4.70        | <b>4.87</b> | Outstanding |                    |
|  | <b>Overall WM</b> | <b>4.77</b> | <b>4.94</b> | <b>4.58</b> | <b>4.76</b> | <b>Outstanding</b> |

**Legend:** RTI = Radiologic Technology Interns; CI = Clinical Instructors; HAS = Hospital Affiliation Staff; WM = Weighted Mean; DER = Descriptive Equivalent Rating.

It revealed an overall "Outstanding" rating with a weighted mean (WM) of 4.76. This suggests that interns effectively apply radiation safety protocols during clinical practice. The highest-rated indicators limiting individuals in exposure areas and ensuring the x-ray room is

closed with the red light on both scored a WM of 4.87. These actions are easily monitored due to visible cues, contributing to their high adherence. Their implementation not only protects patients and staff but also reinforces safety habits through clear procedural practices.

Despite the high overall performance, collimation of the x-ray beam received the lowest score among the six indicators, with a WM of 4.62, though it still falls within the "Outstanding" category. Collimation is a technically demanding skill critical for minimizing unnecessary radiation exposure. Its lower rating indicates a potential gap in hands-on training and conceptual understanding among interns. This suggests the need for educators to emphasize practical collimation exercises and ensure students grasp its impact on both radiation dose and image quality.

Differences in subgroup ratings further highlight the importance of consistent supervision. Clinical Instructors (CI) rated the interns highest (WM = 4.94), followed by Radiologic Technology Interns themselves (4.77), and Hospital Affiliation Staff (HAS) (4.58). These discrepancies may be due to the varying levels of oversight and familiarity each group has with the interns. The findings align with existing research, such as studies by Moran et al. (2021) and Alsharif et al. (2022), which support simulation-based education and regular feedback as effective tools for improving safety practices. Additionally, Chetty and Kaka's multi-institutional study (2023) revealed that inconsistencies in beam collimation practices were prevalent among interns, highlighting the need for standardized training protocols and assessments across all clinical institutions. Overall, while interns excel in general safety measures, greater emphasis on technical skills like collimation is necessary to ensure comprehensive competence.

#### d. Patient Care

**Table 5. Level of Performance of Radiologic Technology Interns in terms of Patient Care**

| Indicators  | Weighted Mean     |             |          | Overall WM  | DER         |                    |
|---|-------------------|-------------|----------|-------------|-------------|--------------------|
|   | RTI               | CI          | HAS      |             |             |                    |
| 1. Explains and gives clear instructions to patients prior to radiological procedure  | 4.81              | 5           | 4.57     | <b>4.79</b> | Outstanding |                    |
| 2. Prepares a supply of fresh gowns for patients' use and provides privacy for patients' change of clothes before and after the procedure | 4.75              | 5           | 4.53     | <b>4.76</b> | Outstanding |                    |
| 3. Transfers patients from the gurney or wheelchair to the x-ray table and vice-versa with minimum discomfort to the patient              | 4.79              | 5           | 4.57     | <b>4.79</b> | Outstanding |                    |
| 4. Refrains from unnecessarily hurrying up patients to finish a procedure   | 4.81              | 5           | 4.63     | <b>4.81</b> | Outstanding |                    |
| 5. Prioritizes patients according to a set of protocols   | 4.88              | 5           | 4.63     | <b>4.84</b> | Outstanding |                    |
| 6. Establishes rapport and empathy towards the patient  | 4.90              | 5           | 4.83     | <b>4.91</b> | Outstanding |                    |
|   | <b>Overall WM</b> | <b>4.82</b> | <b>5</b> | <b>4.63</b> | <b>4.82</b> | <b>Outstanding</b> |

**Legend:** RTI = Radiologic Technology Interns; CI = Clinical Instructors; HAS = Hospital Affiliation Staff; WM = Weighted Mean; DER = Descriptive Equivalent Rating.

Table 5 demonstrates the Level of Performance of Radiologic Technology Interns in terms of Patient Care. The assessment of interns' performance in Patient Care reveals an overall weighted mean of 4.82, categorized as "Outstanding." Interns, clinical instructors, and hospital staff rated all indicators highly, especially in areas like ensuring patient privacy and establishing rapport. The highest score (4.91) came from hospital staff in recognizing efforts to provide dignity and comfort to patients, which highlights the interns' strong interpersonal and empathetic skills .

This outstanding performance implies that the interns are well-prepared to deliver patient-centered care—an essential skill in medical imaging professions. It reflects effective integration of clinical training and ethical sensitivity in patient interaction. According to To & Lung (2020), internship satisfaction and competency are closely linked to meaningful patient interaction and confidence built through hands-on exposure. Similarly, Gerding et al. (2020) emphasized that real-world clinical experience fosters both technical and interpersonal skills, critical for patient care. The findings affirm that experiential learning during clinical rotations enhances not only technical ability but also compassion and communication, as predicted by Kolb's Experiential Learning Theory.

Furthermore, O'Connor and McNulty (2023) stressed that the clinical learning environment and feedback from practitioners play a vital role in shaping radiography students' ability to deliver competent patient care. Together, these studies support the need for robust, multi-source evaluation tools that reflect both academic preparation and on-the-ground realities in healthcare settings.

### e. Leadership, Management, and Entrepreneurship

**Table 6. Level of Performance of Radiologic Technology Interns in terms of Leadership, Management, and Entrepreneurship**

| Indicators   | Weighted Mean     |             |             | Overall<br>I WM | DER               |                          |
|--|-------------------|-------------|-------------|-----------------|-------------------|--------------------------|
|  | RTI               | CI          | HAS         |                 |                   |                          |
| 1. Collaborates in planning activities for the department    | 4.54              | 4           | 4.20        | <b>4.25</b>     | Highly Proficient |                          |
| 2. Organizes colleagues to participate in various activities | 4.56              | 4           | 4.00        | <b>4.19</b>     | Highly Proficient |                          |
| 3. Proposes ways to improve process flows and procedures     | 4.63              | 4.67        | 4.07        | <b>4.46</b>     | Highly Proficient |                          |
| 4. Solves simple problems with minimal supervision           | 4.67              | 4.67        | 4.27        | <b>4.54</b>     | Outstanding       |                          |
| 5. Recognizes opportunities for entrepreneurship             | 4.63              | 4.67        | 3.90        | <b>4.40</b>     | Highly Proficient |                          |
| 6. Supports the implementation of new imaging innovations    | 4.85              | 5           | 4.43        | <b>4.76</b>     | Outstanding       |                          |
|  | <b>Overall WM</b> | <b>4.65</b> | <b>4.50</b> | <b>4.15</b>     | <b>4.43</b>       | <b>Highly Proficient</b> |

**Legend:** RTI = Radiologic Technology Interns; CI = Clinical Instructors; HAS = Hospital Affiliation Staff; WM = Weighted Mean; DER = Descriptive Equivalent Rating.

Table 6 presents the Level of Performance of Radiologic Technology Interns in terms of Leadership, Management, and Entrepreneurship. It is apparent that Radiologic Technology interns demonstrate strong performance in leadership, management, and entrepreneurship, with an overall weighted mean of 4.43, rated as “Highly Proficient.” Interns excelled in supporting the implementation of imaging innovations and solving problems with minimal supervision, reflecting strong adaptability and initiative. However, lower scores from Clinical Instructors and Hospital Affiliation Staff, particularly in entrepreneurship and team organization, highlight areas where leadership and strategic planning skills could be strengthened. These results suggest that while

interns are operationally capable and open to innovation, more targeted training in leadership and entrepreneurial thinking could better prepare them for future roles in advancing healthcare services and managing clinical teams.

The relatively lower scores from hospital staff may reflect interns' limited real-world leadership exposure, especially in organizing team efforts and identifying entrepreneurial opportunities. This implies that while interns exhibit foundational leadership qualities, their application in high-pressure, team-oriented hospital environments remains underdeveloped. These findings are corroborated by Bae et al. (2022), who emphasized that academic training often falls short in preparing students for leadership demands in professional environments.

Similarly, Awadallah et al. (2023) observed that radiology interns lacked sufficient leadership development during field training, particularly in real-world clinical decision-making. Additionally, McNulty et al. (2021) noted international disparities in radiography education, highlighting that leadership and innovation training are often secondary to technical skills, underscoring the need for a more balanced curriculum that fosters both clinical expertise and professional leadership.

## f. Academic and Research Activities

Table 7 reveals the Level of Performance of Radiologic Technology Interns in terms of Academic and Research Activities.

**Table 7. Level of Performance of Radiologic Technology Interns in terms of Academic and Research Activities**

| Indicators  | Weighted Mean |             |             | Overall WM  | DER                |
|---|---------------|-------------|-------------|-------------|--------------------|
|   | RTI           | CI          | HAS         |             |                    |
| 1. Applies teaching and learning principles to prepare students for their clinical practice | 4.65          | 5           | 4.33        | <b>4.66</b> | Outstanding        |
| 2. Assess student performance in the classrooms in the clinical areas                       | 4.58          | 5           | 4.37        | <b>4.65</b> | Outstanding        |
| 3. Conducts research studies related to the Radiologic Technology profession                | 4.48          | 4.67        | 3.60        | <b>4.25</b> | Highly Proficient  |
| <b>Overall Mean</b>   | <b>4.57</b>   | <b>4.89</b> | <b>4.10</b> | <b>4.52</b> | <b>Outstanding</b> |

**Legend:** RTI = Radiologic Technology Interns; CI = Clinical Instructors; HAS = Hospital Affiliation Staff; WM = Weighted Mean; DER = Descriptive Equivalent Rating.

The performance of Radiologic Technology interns in academic and research activities, as shown in Table 7, was rated overall as “Outstanding” with a weighted mean of 4.52. Among the three indicators, the highest rating (4.66) was given to the interns’ ability to apply teaching and learning principles to prepare students for clinical practice, followed closely by their skill in assessing student performance in clinical areas (4.65).

Both of these areas reflect well-developed skills, largely credited to the influence of clinical instructors, who gave consistently high ratings across the board (4.89), active involvement of clinical instructors in guiding and mentoring students, learners demonstrate improved critical thinking, greater confidence, and stronger competency across clinical tasks

(Ingrassia, J. 2020). Therefore, it significantly enhances student performance in both academic and practical aspects of training.

Though still classified as "Highly Proficient," the interns' ability to do research related to the radiologic technology profession received the lowest rating (4.25), suggesting room for growth. This proves that interns may demonstrate limited visibility or involvement in actual research activities during their clinical internship. Florentino et al. (2020) similarly observed that while interns performed well clinically, their research participation was minimal, indicating a need for more structured opportunities within the curriculum. Additionally, students frequently express feeling overburdened by their clinical responsibilities, which leaves them with little time or desire to conduct research (Fernandez et. al 2020).

#### g. Continuous Life-long Learning

**Table 8. Level of Performance of Radiologic Technology Interns in terms of Continuous Life-long Learning**

| Indicators   | Weighted Mean       |             |             | Overall WM  | DER               |                          |
|--|---------------------|-------------|-------------|-------------|-------------------|--------------------------|
|  | RTI                 | CI          | HAS         |             |                   |                          |
| 1. Recognizes the need to attend seminars and workshops regularly                              | 4.48                | 4.67        | 4.20        | <b>4.45</b> | Highly Proficient |                          |
| 2. Schedules attendance at conferences and conventions   | 4.60                | 4.67        | 4.43        | <b>4.50</b> | Highly Proficient |                          |
| 3. Expresses intent to undergo further training in any of the various fields of specialization | 4.52                | 4.67        | 4.13        | <b>4.47</b> | Highly Proficient |                          |
| 4. Recognizes the need to undertake graduate studies   | 4.54                | 5           | 4.30        | <b>4.61</b> | Outstanding       |                          |
| 5. Reads journals on current technological advancements and developments in the profession     | 4.85                | 4.67        | 3.97        | <b>4.39</b> | Highly Proficient |                          |
|  | <b>Overall Mean</b> | <b>4.51</b> | <b>4.73</b> | <b>4.21</b> | <b>4.48</b>       | <b>Highly Proficient</b> |

**Legend:** RTI = Radiologic Technology Interns; CI = Clinical Instructors; HAS = Hospital Affiliation Staff; WM = Weighted Mean; DER = Descriptive Equivalent Rating

Table 8 demonstrates the Level of Performance of Radiologic Technology Interns in terms of Continuous Life-long Learning. It has been measured that the interns' performance in Continuous Life-long Learning yielded an overall weighted mean of 4.48, categorized as "Highly Proficient." While interns and clinical instructors gave high ratings (4.51 and 4.73, respectively), hospital affiliation staff rated this area slightly lower at 4.21. Specific indicators such as "recognizing the need to undertake graduate studies" received higher scores (4.61), while "reading journals on current technological advancements" scored the lowest (4.39), particularly among hospital staff.

These results imply that while interns acknowledge the importance of continued learning and professional development, there is room for growth in consistently applying these habits—especially in independently seeking current knowledge. This supports Bae et al. (2022) who emphasized that bridging the academic-practice gap requires ongoing engagement with new developments, not just foundational training.

Additionally, Ampaso et al. (2022) highlighted that students' readiness for licensure and future practice is strongly linked to their engagement in independent learning and self-assessment. The lower evaluations from hospital staff may indicate a disconnect between interns' perceived intent to learn and their observable actions in clinical practice. This supports the need for structured mentorship, journal discussions, and workshops that encourage interns to actively seek knowledge beyond immediate tasks.

Lastly, O'Connor and McNulty (2023) emphasized that a supportive clinical learning environment is key to nurturing continuous professional growth among radiography students, yet such environments are not always consistently present, leading to gaps in life-long learning behaviors observed by clinical staff. Together, these studies corroborate the manuscript's finding

that while the intent for life-long learning exists, consistent real-world implementation still requires reinforcement.

#### h. Nationalism

**Table 9. Level of Performance of Radiologic Technology Interns in terms of Nationalism**

| Indicators   | Weighted Mean |          |             | Overall WM  | DER                |
|--|---------------|----------|-------------|-------------|--------------------|
|  | RTI           | CI       | HAS         |             |                    |
| 1. Supports the National, Regional, and Local Development Plans for Health Care Programs | 4.85          | 5        | 4.73        | <b>4.86</b> | Outstanding        |
| 2. Advocates socio-civic involvement in the community                                    | 4.81          | 5        | 4.50        | <b>4.77</b> | Outstanding        |
| 3. Promotes a deep sense of genuine service towards Filipinos                            | 4.92          | 5        | 4.87        | <b>4.93</b> | Outstanding        |
| <b>Overall Mean</b>  | <b>4.86</b>   | <b>5</b> | <b>4.70</b> | <b>4.85</b> | <b>Outstanding</b> |

**Legend:** RTI = Radiologic Technology Interns; CI = Clinical Instructors; HAS = Hospital Affiliation Staff; WM = Weighted Mean; DER = Descriptive Equivalent Rating

Table 9 shows the Level of Performance of Radiologic Technology Interns in terms of Nationalism. The results presented in Table 9 reflect the performance of Radiologic Technology Interns in demonstrating nationalism with an overall weighted mean across all three groups of 4.85, which is interpreted as "Outstanding". Among the three indicators, the highest overall mean of 4.93 was "Promotes a deep sense of genuine service towards Filipinos," indicating that interns strongly embody nationalism through their commitment to patient-centered service. In contrast, the lowest was observed in the indicator "Advocates socio-civic involvement in the community," (4.77) although this still falls under the "Outstanding" category. This implies that while interns

are highly dedicated to their service roles, there may comparatively have fewer opportunity for engagement in broader community-oriented activities.

According to Uy (2022), immersion in community health programs significantly enhances students' sense of nationalism, civic responsibility, while also efficiently addressing community needs. It has been demonstrated that incorporating experiential learning into healthcare education helps students become more critical thinkers, helping them better understand structural factors influencing health and fostering a deeper commitment to fostering equity in public service (Hoare et al., 2024). Additionally, Manuel et al. (2024) found that community immersion activities significantly enhance students' lifelong learning skills and social responsibility which have a beneficial impact on students' professional success and development. Furthermore, Santos and Rivera (2021) highlighted how crucial it is to include the efforts for community involvement in the curriculum program to foster national consciousness in healthcare students.

#### **Difference on the Level of Performance of Radiologic Technology Interns**

Table 10 presents the Significant Difference on the Level of Performance of Radiologic Technology Interns as evaluated by Radiologic Technology Interns, Clinical Instructors, Hospital of Affiliation Staff.

**Table 10. Difference on the Level of Performance of Radiologic Technology Interns as evaluated by Radiologic Technology Interns, Clinical Instructors, Hospital of Affiliation Staff**

| Indicators   | P-value           | Decision                     | Interpretation                |
|--|-------------------|------------------------------|-------------------------------|
| a. Application of Scientific Knowledge, Technical Skills, Proper Work Attitude, and Values | 0.7813            | Do not Reject H <sub>0</sub> | No Significant difference     |
| b. Local and International Professional Ethical Practice                                   | 0.0298            | Reject H <sub>0</sub>        | Significant difference        |
| c. Radiation Safety and Protection Measures  | 0.0007            | Reject H <sub>0</sub>        | Significant difference        |
| d. Patient Care  | 6.18E-07          | Reject H <sub>0</sub>        | Significant difference        |
| e. Leadership, Management, and Entrepreneurship  | 0.0159            | Reject H <sub>0</sub>        | Significant difference        |
| f. Academic and Research Activities  | 0.0354            | Reject H <sub>0</sub>        | Significant difference        |
| g. Continuous Life-long learning   | 0.0002            | Reject H <sub>0</sub>        | Significant difference        |
| h. Nationalism   | 0.0466            | Reject H <sub>0</sub>        | Significant difference        |
| <b>OVERALL</b>   | <b>&lt; 0.001</b> | <b>Reject H<sub>0</sub></b>  | <b>Significant difference</b> |

**Legend:**  $\alpha = 0.05$  **Decision rule:** Reject H<sub>0</sub> if p-value < 0.05

It is clear that the data indicate statistically significant differences in the evaluation of Radiologic Technology interns across seven of the eight core competency areas, as rated by interns, clinical instructors, and hospital affiliation staff. The only domain that showed no statistical significant difference was the application of scientific knowledge, technical skills, and proper work attitude—indicating a strong consensus that interns are technically competent and capable of performing standard radiologic procedures. However, notable disparities were found

in areas such as ethical practice, radiation safety, patient care, leadership, academic and research activities, lifelong learning, and nationalism.

These differences suggest that while interns tend to rate themselves favorably, especially in more subjective areas, hospital staff often provide more critical evaluations, likely due to observing interns in real-world, high-pressure clinical settings. Clinical instructors, by contrast, may offer more supportive assessments due to their academic alignment and mentoring role. The implication is clear: there is a need for standardized evaluation tools and clearer assessment rubrics to ensure consistency and fairness in intern performance appraisal. Moreover, the results highlight the importance of strengthening non-technical competencies such as leadership, research, and ethical decision-making in the curriculum.

These findings are supported by Awadallah et al. (2023), who reported similar discrepancies between academic and clinical evaluations of intern leadership and decision-making; Fernandez et al. (2020), who emphasized the limited research engagement of interns despite strong theoretical knowledge; and O'Connor and McNulty (2023), who found that inconsistent mentoring across clinical sites leads to variation in assessments, particularly in ethics and patient care. Together, these studies affirm the need for unified, outcome-based evaluation systems that align academic training with practical expectations in radiologic technology education.

#### **a. Application of Scientific Knowledge, Technical Skills, Proper Work Attitude, and Values**

From the areas evaluated, only Application of Scientific Knowledge, Technical Skills, Proper Work Attitude, and Values has a p-value (0.78) higher than the alpha values which implies that there is no sufficient evidence to prove that there is a difference in the evaluation among the

interns, clinical instructors, and hospital of affiliation staff using the performance evaluation tool. Therefore, the researchers failed to reject the null hypothesis.

#### b. Local and International Professional Ethical Practice

**Table 11. Post Hoc Analysis of Differences on the Level of Performance of Radiologic Technology Interns in terms of Local and International Professional Ethical Practice**

| Group Comparison | Mean           | Pairwise t-test p-value | Tukey t-value | Decision                    | Interpretation                |
|------------------|----------------|-------------------------|---------------|-----------------------------|-------------------------------|
| RTI vs CI        | 4.910 vs 5.000 | 0.1194                  | 2.16          | Accept H <sub>o</sub>       | No Significant difference     |
| CI vs HAS        | 5.000 vs 4.780 | 0.0132                  | 5.28          | Reject H <sub>o</sub>       | Significant difference        |
| HAS vs RTI       | 4.780 vs 4.910 | 0.0524                  | 3.12          | Accept H <sub>o</sub>       | No Significant difference     |
| <b>OVERALL</b>   | <b>4.90</b>    | <b>0.0617</b>           | <b>3.52</b>   | <b>Reject H<sub>o</sub></b> | <b>Significant difference</b> |

**Legend:**  $\alpha = 0.05$  (Critical value for Tukey's test = 4.18); RTI = Radiologic Technology Interns; CI = Clinical Instructors; HAS = Hospital Affiliation Staff

Table 11 shows the Post Hoc Analysis of Differences on the Level of Performance of Radiologic Technology Interns in terms of Local and International Professional Ethical Practice. The post hoc analysis of Radiologic Technology interns' Local and International Professional Ethical Practice, conducted using Tukey's test, reveals detailed pairwise differences following a significant overall ANOVA result ( $p = 0.0298$ ). The analysis shows that the significant difference lies specifically between the Clinical Instructors (CI) and the Hospital Affiliation Staff (HAS) ( $p = 0.0132$ ), while comparisons between Interns (RTI) vs CI ( $p = 0.1194$ ) and HAS vs RTI ( $p = 0.0524$ ) were not statistically significant. This implies that clinical instructors perceive ethical performance more favorably than hospital staff do. The difference may stem from instructors' close academic involvement and mentorship roles, which may lead to a more supportive and optimistic assessment, while hospital staff—often under greater time and workflow pressures—may assess interns through stricter, real-world professional expectations.

The implication of this result is significant, it highlights a gap in the perception of professional ethics that can affect intern development and feedback quality. If interns receive conflicting evaluations regarding their ethical conduct, this could lead to confusion or lack of clarity about behavioral expectations in diverse clinical settings. Therefore, institutions must align ethical training standards and ensure a shared framework for evaluating ethics across academic and clinical supervisors.

This finding is corroborated by Hlaing et al. (2023), who found that healthcare students responded differently to ethical dilemmas depending on the environment and evaluator, emphasizing the need for uniform ethical mentorship. Alipour et al. (2020) also highlighted that interns' understanding and display of ethics are highly influenced by the role modeling of supervisors, which can differ across departments. Additionally, Sulaiman et al. (2022) stressed that structured ethics training integrated across academic and clinical environments leads to more consistent ethical behavior, reducing evaluator disagreement. These studies support the interpretation that discrepancies in ethics evaluations are shaped by context and that harmonized evaluation tools are essential for cultivating professional integrity.

### c. Radiation Safety and Protection Measures

Table 12 demonstrates the Post Hoc Analysis of Differences on the Level of Performance of Radiologic Technology Interns in terms of Radiation Safety and Protection Measures.

**Table 12. Post Hoc Analysis of Differences on the Level of Performance of Radiologic Technology Interns in terms of Radiation Safety and Protection Measures**

| Group Comparison | Mean           | Pairwise t-test p-value | Tukey t-value | Decision                    | Interpretation                |
|------------------|----------------|-------------------------|---------------|-----------------------------|-------------------------------|
| RTI vs CI        | 4.770 vs 4.944 | 0.0315                  | 2.37          | Accept H <sub>o</sub>       | No Significant difference     |
| CI vs HAS        | 4.944 vs 4.578 | 0.0199                  | 4.98          | Reject H <sub>o</sub>       | Significant difference        |
| HAS vs RTI       | 4.578 vs 4.770 | 0.0199                  | 2.61          | Reject H <sub>o</sub>       | Significant difference        |
| <b>OVERALL</b>   | <b>4.77</b>    | <b>0.0172</b>           | <b>3.32</b>   | <b>Reject H<sub>o</sub></b> | <b>Significant difference</b> |

**Legend:**  $\alpha = 0.05$  (Critical value for Tukey's test = 2.60);  $\alpha = 0.01$  (Critical Value for Tukey's test = 3.42); ; RTI = Radiologic Technology Interns; CI = Clinical Instructors; HAS = Hospital Affiliation Staff

The results demonstrates significant differences in how Hospital Affiliation Staff (HAS), Clinical Instructors (CIs), and Radiologic Technology Interns (RTIs) performed radiation safety and protection protocols. All groups adhere to radiation safety procedures to a generally good level, as indicated by the overall weighted mean of (4.77). However, the data reveal notable differences among the groups. With the highest mean score of (4.944), clinical instructors (CIs) demonstrated strong adherence to safety regulations, most likely as a result of their dual roles as mentors and practitioners. RTIs were closely behind CIs with a mean score of (4.770), while Hospital Affiliation Staff (HAS) had the lowest mean score at (4.578).

Hospital staff are performing worse on safety metrics than both interns and instructors, according to the pairwise post hoc analyses. A statistically significant difference was found between CIs and HAS ( $p = 0.0199$ , Tukey  $t = 4.98$ ) and between HAS and RTIs ( $p = 0.0199$ , Tukey  $t$

= 2.61). However, there was not a significant difference in the evaluation of RTIs and CIs ( $p = 0.0315$ , Tukey  $t = 2.37$ ), suggesting that interns are performing at levels that are nearly identical to those of their clinical instructors. The thorough supervision and ongoing academic training interns get, which keeps them up to date on the most recent safety procedures, may be responsible for this result. On the other hand, the lower performance of hospital employees may be a sign of systemic flaws in safety enforcement, high workloads, or limited access to continuing training.

These findings are consistent with recent research. According to Rehani et al. (2021), even for seasoned experts, periodic retraining is crucial to halting the decline of radiation protective procedures. In a similar vein, radiologic staff that had safety training within the previous two years showed noticeably higher adherence to radiation safety procedures, according to Alotaibi and Almalki (2022). Furthermore, Kharita et al. (2023) found a substantial relationship between an organization's safety culture and radiation protection practices, highlighting the fact that better results are achieved with efficient safety leadership and monitoring systems.

#### d. Patient Care.

**Table 13. Post Hoc Analysis of Differences on the Level of Performance of Radiologic Technology Interns in terms of Patient Care**

| Group Comparison | Mean           | Pairwise t-test p-value | Tukey t-value | Decision                       | Interpretation                |
|------------------|----------------|-------------------------|---------------|--------------------------------|-------------------------------|
| RTI vs CI        | 4.823 vs 5.000 | 0.0005                  | 4.38          | Reject $H_0$                   | Significant difference        |
| CI vs HAS        | 5.000 vs 4.627 | 1.35E-07                | 9.26          | Reject $H_0$                   | Significant difference        |
| HAS vs RTI       | 4.627 vs 4.823 | 0.0002                  | 4.88          | Reject $H_0$                   | Significant difference        |
| <b>OVERALL</b>   | <b>4.817</b>   | <b>0.0003</b>           | <b>6.17</b>   | <b>Reject <math>H_0</math></b> | <b>Significant difference</b> |

**Legend:**  $\alpha = 0.01$  (Critical value for Tukey's test = 3.42); RTI = Radiologic Technology Interns; CI = Clinical Instructors; HAS = Hospital Affiliation Staff

Table 13 presents the Post Hoc Analysis of Differences on the Level of Performance of Radiologic Technology Interns in terms of Patient Care

It sheds light on how effectively each organization applies patient-centered practices—a fundamental component of high-quality radiologic care—in the clinical context. The weighted mean score for all three groups was 4.817, indicating an excellent overall standard of patient care. But there are also notable performance disparities amongst them, according to the statistics. With the highest mean score of 5.000, clinical instructors (CIs) demonstrated exceptional standards in patient care, most likely as a result of their supervisory duties and professional expertise. The high performance level of Radiologic Technology Interns (RTIs), with a score of 4.823, indicates that students are being adequately prepared in this crucial area by current educational programs. Hospital Affiliation Staff (HAS), on the other hand, had the lowest mean score (4.627), significantly lower than both CIs and RTIs. This disparity can be a sign of inconsistent institutional patient care procedures or a lack of ongoing education.

The observed performance gap is supported by the statistical findings. The accompanying Tukey t-values for RTI vs. CI ( $p=0.0005$ ), CI vs. HAS ( $p= 1.35E-07$ ), and HAS vs. RTI ( $p= 0.0002$ ) all exceeded the crucial threshold of 3.42, indicating significant differences in all pairwise comparisons. These findings demonstrate that performance differences are not the result of chance and lead to the null hypothesis being rejected in each instance. These results have significant ramifications. Radiologic technology education appears to be successful in imparting critical patient-centered values and behaviors, as seen by the close alignment of RTI and CIs in patient care performance. It is disconcerting, nevertheless, that hospital-affiliated professionals perform noticeably worse. It can be an indication of an institutional shortfall in continuing

education, emphasizing the necessity for hospitals to strengthen their quality monitoring and professional development initiatives.

According to Saeed et al. (2022), changed curricula that prioritize patient connection and empathy are the reason why recently trained radiologic technologists demonstrated more effective patient communication abilities than more experienced practitioners. In a similar vein, Gonzalez et al. (2021) showed that radiology staff members' ability to communicate and empathize with patients was greatly enhanced by structured continuing education programs. Additionally, students who received targeted instruction in patient engagement and soft skills during their clinical education demonstrated superior performance on practical tests and obtained more positive patient feedback, according to Al-Qahtani and Aldosari (2023).

#### e. Leadership, Management, and Entrepreneurship

Table 14 demonstrates the Post Hoc Analysis of Differences on the Level of Performance of Radiologic Technology Interns in terms of Leadership, Management, and Entrepreneurship.

**Table 14. Post Hoc Analysis of Differences on the Level of Performance of Radiologic Technology Interns in terms of Leadership, Management, and Entrepreneurship**

| Group Comparison | Mean           | Pairwise t-test p-value | Tukey t-value | Decision                    | Interpretation                |
|------------------|----------------|-------------------------|---------------|-----------------------------|-------------------------------|
| RTI vs CI        | 4.647 vs 4.502 | 0.3651                  | 0.93          | Accept H <sub>0</sub>       | No Significant difference     |
| CI vs HAS        | 4.502 vs 4.145 | 0.0364                  | 2.30          | Accept H <sub>0</sub>       | No Significant difference     |
| HAS vs RTI       | 4.145 vs 4.647 | 0.0056                  | 3.23          | Reject H <sub>0</sub>       | Significant difference        |
| <b>OVERALL</b>   | <b>4.431</b>   | <b>0.1357</b>           | <b>2.15</b>   | <b>Reject H<sub>0</sub></b> | <b>Significant difference</b> |

**Legend:**  $\alpha = 0.05$  (Critical value for Tukey's test = 2.60) ; RTI = Radiologic Technology Interns; CI = Clinical Instructors; HAS = Hospital Affiliation Staff

It has been revealed that among the three groups, RTIs achieved the highest mean score (M = 4.647), followed by CIs (M = 4.502), and HAS (M = 4.145). A statistically significant difference was found specifically between RTIs and HAS (Tukey t = 3.23), indicating that interns performed

significantly better than hospital staff in these domains. On the other hand, the comparisons between RTIs and CIs (Tukey  $t = 0.93$ ) and between CIs and HAS (Tukey  $t = 2.30$ ) did not show significant differences, as their  $t$ -values did not exceed the critical value of 2.60. While the overall analysis is marked as significant, the overall Tukey  $t$ -value (2.15) and  $p$ -value (0.1357) fall below the critical threshold.

These findings imply that Radiologic Technology Interns are entering the clinical field with stronger leadership, management, and entrepreneurial competencies than some of their professional counterparts, particularly the Hospital Affiliation Staff. This suggests that current academic training may be more updated or aligned with emerging healthcare demands. This result supports Reyes et al. (2020), who found that leadership development programs significantly boost leadership skills among allied health students. Similarly, Alilyyani et al. (2024) emphasizes that leadership skills are a vital component of qualified nursing practice and should be central to intern students' development, as they are essential for both patient care and organizational outcomes. Furthermore, Ballard et al. (2021) states that entrepreneurship within the academic environment holds great potential to address pressing healthcare challenges, as entrepreneurs, particularly academic radiologists, drive innovation and the commercialization of research discoveries through their valuable skills. These findings collectively highlight the importance of ongoing professional development for hospital staff to ensure their competencies remain on par with evolving academic and industry standards.

## f. Academic and Research Activities

Table 15 shows the Post Hoc Analysis of Differences on the Level of Performance of Radiologic Technology Interns in terms of Academic and Research Activities.

**Table 15. Post Hoc Analysis of Differences on the Level of Performance of Radiologic Technology Interns in terms of Academic and Research Activities**

| Group Comparison | Mean           | Pairwise t-test p-value | Tukey t-value | Decision                    | Interpretation                |
|------------------|----------------|-------------------------|---------------|-----------------------------|-------------------------------|
| RTI vs CI        | 4.570 vs 4.890 | 0.2080                  | 1.41          | Accept H <sub>0</sub>       | No Significant difference     |
| CI vs HAS        | 4.890 vs 4.100 | 0.0131                  | 3.48          | Reject H <sub>0</sub>       | Significant difference        |
| HAS vs RTI       | 4.100 vs 4.570 | 0.0836                  | 2.07          | Accept H <sub>0</sub>       | No Significant difference     |
| <b>OVERALL</b>   | <b>4.520</b>   | <b>0.1016</b>           | <b>2.32</b>   | <b>Reject H<sub>0</sub></b> | <b>Significant difference</b> |

**Legend:**  $\alpha = 0.05$  (Critical value for Tukey's test = 3.07) ; RTI = Radiologic Technology Interns; CI = Clinical Instructors; HAS = Hospital Affiliation Staff

From the data, one can infer that the Clinical Instructors recorded the highest mean score (M = 4.890), followed by RTIs (M = 4.570), while HAS obtained the lowest mean (M = 4.100). A statistically significant difference was observed between CIs and HAS (Tukey t = 3.48), indicating that clinical instructors performed significantly better than hospital staff in academic and research endeavors. However, the comparisons between RTIs and CIs (Tukey t = 1.41) and between RTIs and HAS (Tukey t = 2.07) did not yield significant differences. Although the overall analysis is marked as significant, the p-value (0.1016) and overall Tukey t-value (2.32) do not exceed the critical threshold ( $\alpha = 0.05$ , t-critical = 3.07), warranting cautious interpretation of the overall result.

The implications of these findings are noticeable. The high performance of Clinical Instructors reflects their active engagement in academic and research activities, which aligns with

their roles in teaching and scholarly development. The relatively strong performance of interns suggests that their academic training is effectively fostering research competency. In contrast, the lower performance of Hospital Affiliation Staff highlights a potential gap in research engagement and academic development within the clinical environment. This disparity underscores the need for continuous professional development programs focused on research and scholarship for hospital staff. These findings are supported by V, Sakkeer (2023), who emphasized that research skills are essential for contributing to knowledge, solving problems, and succeeding in academic, professional, and personal growth. Almarí et al. (2021), who identified efforts to spark sustained interest in academia among medical interns have included brief interventions and mentorship, but more comprehensive approaches like academic internships are increasingly favored. and Norris (2022), research equips students to approach problems creatively and effectively, as reflected in changes to their knowledge, thinking, skills, and attitudes. Addressing this gap through targeted training could strengthen the overall quality and evidence-based practice within the healthcare system.

#### **g. Continuous Life-long learning**

Table 16 presents the Post Hoc Analysis of Differences on the Level of Performance of Radiologic Technology Interns in terms of Continuous Life-long learning.

**Table 16. Post Hoc Analysis of Differences on the Level of Performance of Radiologic Technology Interns in terms of Continuous Life-long learning**

| <b>Group Comparison</b> | <b>Mean</b>    | <b>Pairwise t-test p-value</b> | <b>Tukey t-value</b> | <b>Decision</b>             | <b>Interpretation</b>         |
|-------------------------|----------------|--------------------------------|----------------------|-----------------------------|-------------------------------|
| RTI vs CI               | 4.508 vs 4.733 | 0.0253                         | 2.55                 | Accept H <sub>0</sub>       | No Significant difference     |
| CI vs HAS               | 4.733 vs 4.207 | 0.0001                         | 5.97                 | Reject H <sub>0</sub>       | Significant difference        |
| HAS vs RTI              | 4.207 vs 4.508 | 0.0051                         | 3.41                 | Reject H <sub>0</sub>       | Significant difference        |
| <b>OVERALL</b>          | <b>4.4827</b>  | <b>0.0102</b>                  | <b>3.98</b>          | <b>Reject H<sub>0</sub></b> | <b>Significant difference</b> |

**Legend:**  $\alpha = 0.05$  (Critical value for Tukey's test = 2.67);  $\alpha = 0.01$  (Critical value for Tukey's test = 3.56); RTI = Radiologic Technology Interns; CI = Clinical Instructors; HAS = Hospital Affiliation Staff

The Post Hoc Analysis reveals significant differences in continuous life-long learning among Radiologic Technology Interns (RTI), Clinical Instructors (CI), and Hospital Affiliation Staff (HAS). The comparison between Radiologic Technology Interns and Clinical Instructors shows no significant difference (p-value = 0.0253), indicating that both groups maintain similar levels of professional development. However, CIs demonstrate a significantly higher level of continuous learning compared to Hospital Affiliation Staff (p-value = 0.0001), suggesting that experience and structured education contribute to improved lifelong learning habits. Additionally, Radiologic Technology interns exhibit significantly stronger continuous learning behaviors than Hospital Affiliation Staff (p-value = 0.0051), emphasizing the importance of formal training and academic exposure.

The overall findings imply that structured educational exposure and work experience play an important role in developing continuous life-long learning in radiologic technology. The significant differences in learning levels between Clinical Instructors (CI) and Hospital Affiliation Staff (HAS) indicate that professionals in mentorship and academic roles benefit from continuous involvement in structured learning situations. On the other hand, the similar learning levels of Radiologic Technology interns (RTI) and clinical instructors show that internship programs effectively support continuous learning habits, emphasizing the relevance of competency-based education in early career development. However, lower Hospital Affiliation Staff scores indicate potential gaps in continued education and professional development, emphasizing the

importance of institutional support, standardized training frameworks, and continuous education programs to make sure lifelong learning is incorporated at all levels of practice.

According to Aytaç, Özbilen, & Genç (2022), lifelong learning is significantly influenced by epistemological beliefs, where individuals who perceive learning as effort-driven exhibit stronger commitment to continuous education. This emphasizes the significance of structured educational support and mentorship in promoting professional development. Based on the findings, interns and clinical instructors showed great proficiency in continual lifelong learning, with overall ratings indicating good professional development involvement. However, hospital affiliation staff evaluated this ability lower, which could imply a lack of reinforcement and structured learning chances in clinical settings.

Another study emphasizes the importance of continuous education, skill adaptation, and self-directed learning, which supports the findings of the Post Hoc Analysis of Differences in the Level of Performance of Radiologic Technology Interns in Terms of Continuous Life-long Learning. The book's emphasis on intellectual curiosity and the short lifespan of skills gives support to the notion that Radiologic Technology Interns (RTI) and Clinical Instructors (CI) engage in strong lifelong learning behaviors, most likely as a result of structured educational exposure and professional mentorship. Morgan also points out how learning must be proactive, which corresponds to the discovery that Hospital Affiliation Staff (HAS) had lower levels of lifetime learning, showing gaps in professional growth that require institutional intervention. His findings support the need for competency-based education, structured mentoring, and easily accessible learning materials to ensure that lifelong learning is incorporated in healthcare practice (Morgan, L., 2025).

Furthermore, Dorfman-Furman (2024) emphasizes the importance of academic institutions in promoting lifelong learning and self-development in a knowledge-based society. His findings demonstrate the results in Table 16, which show that Clinical Instructors (CI) had considerably greater levels of continuous life-long learning than Hospital Affiliation Staff (HAS) due to structured mentorship and institutional support. The study also emphasizes self-directed learning and engagement with growing knowledge, which are consistent with Radiologic Technology Interns' (RTI) higher lifelong learning behaviors when compared to HAS. This supports the importance for standardized training frameworks and professional development programs to guarantee that ongoing education is incorporated throughout all healthcare roles.

#### **h. Nationalism**

Table 17 shows the Post Hoc Analysis of Differences on the Level of Performance of Radiologic Technology Interns in terms of Nationalism.

**Table 17. Post Hoc Analysis of Differences on the Level of Performance of Radiologic Technology Interns in terms of Nationalism**

| <b>Group Comparison</b> | <b>Mean</b>    | <b>Pairwise t-test p-value</b> | <b>Tukey t-value</b> | <b>Decision</b>             | <b>Interpretation</b>         |
|-------------------------|----------------|--------------------------------|----------------------|-----------------------------|-------------------------------|
| RTI vs CI               | 4.860 vs 5.000 | 0.1785                         | 1.52                 | Accept H <sub>o</sub>       | No Significant difference     |
| CI vs HAS               | 5.000 vs 4.700 | 0.0171                         | 3.26                 | Reject H <sub>o</sub>       | Significant difference        |
| HAS vs RTI              | 4.700 vs 4.860 | 0.1323                         | 1.74                 | Accept H <sub>o</sub>       | No Significant difference     |
| <b>OVERALL</b>          | <b>4.853</b>   | <b>0.1093</b>                  | <b>2.17</b>          | <b>Reject H<sub>o</sub></b> | <b>Significant difference</b> |

**Legend:**  $\alpha = 0.05$  (Critical value for Tukey's test = 3.07); RTI = Radiologic Technology Interns; CI = Clinical Instructors; HAS = Hospital Affiliation Staff

The results show the Post Hoc Analysis, which looks at significant differences in nationalism among Radiologic Technology Interns (RTI), Clinical Instructors (CI), and Hospital Affiliation Staff. The results show no significant difference between RTI and CI (p-value = 0.1785), showing that

both groups had comparable levels of nationalism, most likely due to structured educational exposure. However, CI scored significantly higher than HAS ( $p$ -value = 0.0171), suggesting that mentorship and professional engagement strengthen national identity. Meanwhile, there was no significant difference between RTI and HAS ( $p$ -value = 0.1323), indicating that early-career professionals and hospital staff may require institutional encouragement to strengthen their nationalism. These findings emphasize the role of mentorship, higher education, and professional development in creating national identity among healthcare workers.

A study showed a strong correlation ( $r = 0.710$ ,  $p < 0.001$ ) between Social Studies education and nationalism growth, showing how structured civic learning strengthens national identity (Montejo et al. 2025). This is aligned with the Post Hoc Analysis, in which Clinical Instructors (CI) have considerably higher levels of nationalism than Hospital Affiliation Staff (HAS), emphasizing the importance of mentorship and professional education in building nationalistic values. Furthermore, the comparable nationalism scores of Radiologic Technology Interns (RTI) and Clinical Instructor show the effectiveness of educational interventions in establishing national pride. These findings highlight the significance of mentorship programs and institutionalized learning in promoting nationalism across professional sectors.

Furthermore, according to the Center for Nationalism Studies (2025), they conducted a study on nationalism tendencies in professional sectors, focusing on how mentorship and institutional frameworks promote national identity. This is consistent with the Post Hoc Analysis, in which Clinical Instructors (CI) displayed considerably stronger nationalism than Hospital Affiliation Staff (HAS), highlighting the importance of structured learning in building national pride. Furthermore, the comparable nationalism levels of Radiologic Technology Interns (RTI) and Clinical Instructors reveal that early exposure to mentorship and professional development instills



|  |          |          |          |          |          |
|--|----------|----------|----------|----------|----------|
| <b>a. Application of Scientific Knowledge, Technical Skills, Proper Work Attitude, and Values</b>  | <b>5</b> | <b>4</b> | <b>3</b> | <b>2</b> | <b>1</b> |
| 1. Performs radiologic procedures according to protocols.  |          |          |          |          |          |
| 2. Positions the patient correctly during a procedure.   |          |          |          |          |          |
| 3. Recognizes problems in image quality and institutes measures to address them.   |          |          |          |          |          |
| 4. Practices good housekeeping after every procedure.  |          |          |          |          |          |
| 5. Demonstrates a good working relationship with colleagues.   |          |          |          |          |          |
| <b>b. Local and International Professional Ethical Practice</b>  | <b>5</b> | <b>4</b> | <b>3</b> | <b>2</b> | <b>1</b> |
| 1. Observes “patient confidentiality” and the other provisions of the Patient’s Bill of Rights.  |          |          |          |          |          |
| 2. Practices the Code of Ethics of the profession.   |          |          |          |          |          |
| <b>c. Radiation Safety and Protection Measures</b>   | <b>5</b> | <b>4</b> | <b>3</b> | <b>2</b> | <b>1</b> |
| 1. Wears protective shields, e.g. lead aprons and goggles, when performing radiological procedures.  |          |          |          |          |          |
| 2. Collimates the area of exposure.  |          |          |          |          |          |
| 3. Utilizes the lowest possible exposure technique factors.  |          |          |          |          |          |
| 4. Prevents unnecessary patient radiation exposure.  |          |          |          |          |          |
| 5. Restricts persons in the exposure area during radiological procedures.  |          |          |          |          |          |
| 6. Closes the x-ray room and ensures that the red light is on during exposures.  |          |          |          |          |          |
| <b>d. Patient Care</b>   | <b>5</b> | <b>4</b> | <b>3</b> | <b>2</b> | <b>1</b> |
| 1. Explains and gives clear instructions to patients prior to radiological procedure.  |          |          |          |          |          |
| 2. Prepares a supply of fresh gowns for patients’ use and provides privacy for patients’ change of clothes before and after the procedure. |          |          |          |          |          |
| 3. Transfers patients from the gurney or wheelchair to the x-ray table and vice-versa with minimum discomfort to the patient.              |          |          |          |          |          |
| 4. Refrains from unnecessarily hurrying up patients to finish a procedure.   |          |          |          |          |          |
| 5. Prioritizes patients according to a set of protocols  |          |          |          |          |          |
| 6. Establishes rapport and empathy towards the patient.  |          |          |          |          |          |
| <b>e. Leadership, Management, and Entrepreneurship</b>   | <b>5</b> | <b>4</b> | <b>3</b> | <b>2</b> | <b>1</b> |
| 1. Collaborates in planning activities for the department.   |          |          |          |          |          |
| 2. Organizes colleagues to participate in various activities.  |          |          |          |          |          |
| 3. Proposes ways to improve process flows and procedures.  |          |          |          |          |          |
| 4. Solves simple problems with minimal supervision.  |          |          |          |          |          |
| 5. Recognizes opportunities for entrepreneurship.  |          |          |          |          |          |
| 6. Supports the implementation of new imaging innovations.   |          |          |          |          |          |

|  |          |          |          |          |          |
|--|----------|----------|----------|----------|----------|
| 7. Assumes leadership in small tasks (e.g. coordinating shift duties, delegating tasks among peers)                  |          |          |          |          |          |
| 8. Demonstrates ability to make minor clinical decisions independently and responsibly                               |          |          |          |          |          |
| 9. Suggests workflow improvements when issues arise during rotation  |          |          |          |          |          |
| 10. Actively participates in team discussions and department planning when invited                                   |          |          |          |          |          |
| 11. Shows openness to future roles in radiology operations, administration, or private practice                      |          |          |          |          |          |
| <b>f. Academic and Research Activities</b>   | <b>5</b> | <b>4</b> | <b>3</b> | <b>2</b> | <b>1</b> |
| 1. Applies teaching and learning principles to prepare students for their clinical practice.                         |          |          |          |          |          |
| 2. Assess student performance in the classrooms in the clinical areas.   |          |          |          |          |          |
| 3. Conducts research studies related to the Radiologic Technology profession.  |          |          |          |          |          |
| 4. Demonstrates initiative in participating in department-led research or journal club activities                    |          |          |          |          |          |
| 5. Shows awareness of current issues or gaps in radiologic practice that could be explored through research          |          |          |          |          |          |
| 6. Integrates clinical experiences into academic reflections or research proposals                                   |          |          |          |          |          |
| 7. Seeks mentorship or feedback for research development and presentation  |          |          |          |          |          |
| 8. Shares findings or research experiences with peers in informal or formal settings (e.g. case discussions, forums) |          |          |          |          |          |
| <b>g. Continuous Life-long learning</b>  | <b>5</b> | <b>4</b> | <b>3</b> | <b>2</b> | <b>1</b> |
| 1. Recognizes the need to attend seminars and workshops regularly.   |          |          |          |          |          |
| 2. Schedules attendance at conferences and conventions.  |          |          |          |          |          |
| 3. Expresses intent to undergo further training in any of the various fields of specialization.                      |          |          |          |          |          |
| 4. Recognizes the need to undertake graduate studies.  |          |          |          |          |          |
| 5. Reads journals on current technological advancements and developments in the profession.                          |          |          |          |          |          |
| 6. Proactively applies updated techniques or knowledge acquired from seminars in clinical duties                     |          |          |          |          |          |
| 7. Maintains a personal journal/log of clinical insights and cases for reflective learning                           |          |          |          |          |          |
| 8. Seeks out learning opportunities beyond required duties (e.g. observation of advanced modalities)                 |          |          |          |          |          |
| 9. Demonstrates awareness of trends in radiologic science through conversation or inquiry                            |          |          |          |          |          |

|  |          |          |          |          |          |
|--|----------|----------|----------|----------|----------|
| 10. Displays commitment to future specialization or advanced certifications (e.g. via articulated goals) |          |          |          |          |          |
| <b>h. Nationalism</b>  | <b>5</b> | <b>4</b> | <b>3</b> | <b>2</b> | <b>1</b> |
| 1. Supports the National, Regional, and Local Development Plans for Health Care Programs.                |          |          |          |          |          |
| 2. Advocates socio-civic involvement in the community.   |          |          |          |          |          |
| 3. Promotes a deep sense of genuine service towards Filipinos.   |          |          |          |          |          |

The inclusion of additional indicators in the performance evaluation tool is justified by the study's findings, which highlighted lower competency levels among interns in academic and research activities, continuous life-long learning, and leadership and management. Specifically, interns demonstrated limited participation in research, a lack of initiative in applying newly acquired knowledge, and minimal involvement in leadership-related tasks. These gaps suggest the need for clearer, measurable behaviors that promote critical thinking, self-directed learning, and leadership development. By addressing these specific areas, the enhanced indicators aim to strengthen the alignment between academic preparation and real-world clinical expectations, ultimately fostering the professional growth and readiness of Radiologic Technology interns.

## CHAPTER IV

### Conclusions and Recommendations

This chapter presents the summary of findings, conclusions, and recommendations of the study.

#### Summary of Findings

This study aimed to evaluate the level of performance of Radiologic Technology interns based on the CHED-mandated program outcomes, as evaluated by three groups: the Interns themselves, Clinical Instructors (CI), and Hospital Affiliation staff (HAS). The evaluation covered eight core areas: Application of Scientific Knowledge, Ethical Practice, Radiation Safety, Patient Care, Leadership and Management, Academic Research, Life-long Learning, and Nationalism. From the analysis of the data gathered, the researchers generated the following findings:

1. Based on the results, the study revealed that Radiologic Technology interns from Lorma Colleges performed at a high level across all evaluated competencies, particularly in ethical practice, patient care, radiation safety, and nationalism, earning overall ratings of “Outstanding” or “Highly Proficient.” Clinical instructors rated the interns most favorably, while hospital staff were slightly more critical, especially in areas such as leadership, research, and lifelong learning. These differences suggest that although the interns are well-prepared in foundational skills and professional values, there is a need for improvement in higher-level competencies like innovation, self-directed learning, and research engagement. The findings indicate that while the program effectively equips students with clinical and ethical capabilities, it would benefit from enhanced support in leadership and professional development to fully align with educational outcomes.
2. The findings addressing Statement of the Problem 2 revealed statistically significant differences in how Radiologic Technology interns were evaluated by interns themselves, clinical instructors, and hospital affiliation staff across seven of the eight assessed performance areas. Based on the ANOVA results, only the domain related to the application of scientific knowledge, technical skills,

and proper work attitude showed no significant difference, indicating strong agreement among evaluators regarding the interns' clinical competency and technical proficiency. However, significant discrepancies emerged in more subjective areas such as ethical practice, radiation safety, patient care, leadership, academic and research activities, lifelong learning, and nationalism. Clinical instructors generally provided higher ratings, likely due to their close mentorship and familiarity with academic goals, while hospital staff were more critical, possibly reflecting stricter expectations based on real-world standards and limited exposure to the interns' full range of tasks. Interns tended to rate themselves highly in leadership and lifelong learning, suggesting possible overestimation of their performance in these areas. These findings imply that clinical performance assessments are influenced by the evaluator's role, exposure, and expectations, highlighting the need for a more standardized and unified evaluation framework. Establishing clear, objective rubrics and consistent assessment criteria across evaluator groups is essential to ensure fair, accurate, and meaningful feedback. Moreover, the results emphasize the importance of strengthening non-technical competencies, such as ethical reasoning, leadership, research involvement, and lifelong learning habits, to prepare interns for the complex demands of professional clinical environments.

3. Based on the results of the study, the findings indicate that the existing performance evaluation tool utilized for the interns of the College of Radiologic Technology at Lorma Colleges is effective and well-aligned with the program outcomes mandated by the Commission on Higher Education (CHED). The consistently high performance ratings ranging from "Highly Proficient" to "Outstanding" across key competency areas affirm that the interns are meeting expected clinical and professional standards. This validates the tool's relevance in assessing intern readiness for actual practice in the field of radiologic technology. Similarly, while interns performed well

overall, their engagement in academic and research activities—particularly in conducting research—was less evident, highlighting the importance of integrating guided research opportunities and mentorships. The area of continuous life-long learning also showed room for growth, as some interns demonstrated limited participation in professional development activities such as seminars, journal reading, and workshops. In response, the tool should emphasize and assess tangible lifelong learning behaviors. Furthermore, significant differences in evaluations among interns, clinical instructors, and hospital staff suggest the need for a more standardized and calibrated assessment rubric to ensure consistency and fairness across evaluators.

## **Conclusions**

**Based on the results and findings of the study, the following conclusions were drawn.**

1. The performance evaluation tool developed for Radiologic Technology interns at Lorma Colleges has shown to be an effective tool to evaluate the competencies indicated in CHED Memorandum Order No. 7, Series 2018. Interns consistently demonstrated proficiency in ethical practice, patient care, and radiation safety, indicating the program's effectiveness in preparing students for clinical responsibilities. However, the study found areas for continued development, including leadership, engagement in research, and continuous lifelong learning. Strengthening these aspects through structured actions would improve the interns' overall competency and prepare them for evolving healthcare demands.
2. Significant differences in evaluations have been observed between interns, clinical instructors, and hospital affiliated staff, indicating that assessments of intern performance differ depending on professional duties and exposure. While clinical instructors provided higher scores, hospital staff were more critical, particularly in terms of leadership and research involvement. This

differences emphasizes the need for a standardized evaluation approach to ensure consistency and fairness in assessing intern competencies.

3. The continued use of the evaluation tool is recommended, with enhancements focusing on leadership development, research engagement, and lifelong learning activities. Strengthening these areas will provide Radiologic Technology interns with the skills they need to meet the changing needs of healthcare practice, resulting in well-rounded, competent workers capable of responding to innovations in the field.

### **Recommendations**

Given the findings and conclusions obtained from this research study, the researcher consequently proposes the following recommendations:

1. Offer Competency-based Training Initiatives: Develop and integrate specialized training programs to Radiologic Technology interns focused on Leadership Development, Research Literacy, and Life-long Learning habits.
2. Facilitate Cross-Context Feedback Mechanisms: Encourage regular, structured feedback sessions between interns, clinical instructors, and hospital affiliate staff to bridge perception gaps and create a more aligned understanding of performance expectations. Promote stronger collaboration to ensure that the internship objectives and clinical experiences are mutually reinforcing, particularly in underdeveloped competencies.
3. To address the identified gaps in the areas of academic and research activities, continuous life-long learning, and leadership and management, the performance evaluation tool was enhanced by incorporating additional indicators based on the study's findings. While retaining the original CHED-based structure, the revised tool includes new items that reflect the need for greater research engagement, practical application of ongoing learning, and stronger leadership initiative.

These enhancements aim to provide a more comprehensive assessment of intern competencies and support their holistic development in alignment with professional standards and evolving demands in healthcare.

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# APPENDIX A

## Research Poster






### PERFORMANCE EVALUATION TOOL FOR RADIOLOGIC TECHNOLOGY INTERNS OF LORMA COLLEGES





Authors: Abin, C. C. A., Colman, T. A. A., Dalidjann, A. M. L., Equita, E. D. R., Esperon, H. K. A., Lunog, F. G. R., & Navarro, D. C. G.

#### INTRODUCTION





Radiologic Technology Internships are vital for developing clinical competence. However, the lack of standardization in performance evaluation tool poses a challenge to the accuracy, reliability, and fairness of assessing the Radiologic Technology intern's clinical competencies. This study describes the development and implementation of a performance evaluation tool to assess the clinical competencies of Radiologic Technology interns at Lorma Colleges, aligned with the program outcomes outlined in CHED Memorandum Order No. 7, Series of 2018. Grounded in Outcome-Based Education and experiential learning theories, it bridges academic training with real-world clinical practice to ensure interns meet competency standards and the holistic development of future radiologic technologists.











#### OBJECTIVES

-  **ASSESS and COMPARE** clinical performance of radiologic technology interns across evaluator groups
-  **VALIDATE** the tool's effectiveness and reliability.
-  **IDENTIFY** strengths and areas for developing interns' competencies.
-  **RECOMMEND** an enhancement on the performance evaluation tool for radiologic technology interns.

#### METHODOLOGY

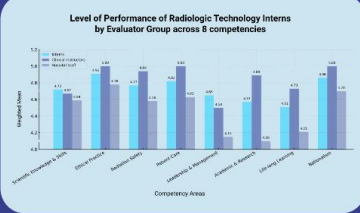
-  **Design:** Descriptive - Comparative Approach.
-  **Participants:** 48 Radiologic Technology Interns, 3 Clinical Instructors, and 30 Hospital of Affiliation Staffs
-  **Data Collection:** Structured survey questionnaire via Google Forms.
-  **Analysis:** Frequency and Weighted Mean, Analysis of Variance (ANOVA), Tukey Post-Hoc Test

#### 8 KEY COMPETENCIES ASSESSED

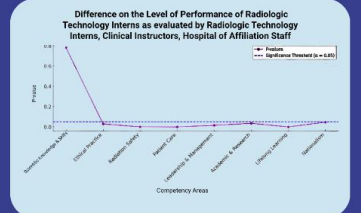
-  Application of Scientific Knowledge, Technical skills & Professional Values
-  Professional Ethical Practice
-  Radiation Safety & Protection
-  Patient Care
-  Leadership & Management
-  Academic & Research Activities
-  Lifelong Learning
-  Nationalism

#### RESULTS


##### Level of Performance of Radiologic Technology Interns by Evaluator Group across 8 competencies



##### Difference on the Level of Performance of Radiologic Technology Interns as evaluated by Radiologic Technology Interns, Clinical Instructors, Hospital of Affiliation Staff



#### FINDINGS






The study revealed that Radiologic Technology interns generally performed highly across all areas. Ratings ranged from "Highly Proficient" to "Outstanding" as assessed by interns, clinical instructors, and hospital staff. Evaluations showed that interns were rated as "Outstanding" in domains such as ethical practice (4.90), patient care (4.82), and nationalism (4.85). Meanwhile, areas like academic and research activities (4.52) and continuous life-long learning (4.48) were rated as "Highly Proficient," indicating room for improvement.


Significant differences in performance ratings were observed among the three evaluator groups—Radiologic Technology Interns, Clinical Instructors, and Hospital Affiliation Staff—in seven out of eight competency areas ( $p < 0.05$ ). The only area with no significant difference was the application of scientific knowledge and technical skills, reflecting broad agreement on core clinical competencies. Notably, Clinical Instructors tended to give more favorable assessments, while Hospital Staff were comparatively more critical, highlighting contrasting perspectives between academic mentors and frontline practitioners. Despite these differences, all ratings met or exceeded competency benchmarks, affirming the tool's alignment with expected program outcomes.

#### CONCLUSION

It revealed that the developed performance evaluation tool is a valid and effective instrument for assessing the clinical competencies of Radiologic Technology interns. Interns consistently met the required performance standards. However, the disparities among evaluator groups, especially in leadership and research engagement areas, highlight the need for consistent evaluation practices and greater support in these domains. Overall, the study affirms the importance of a structured assessment tool in promoting accountability, self-awareness, and continuous improvement in clinical training.

#### RECOMMENDATIONS

-  **Competency-Based Training:** Implement targeted programs to strengthen leadership, research literacy, and life-long learning habits.
-  **Structured Feedback Mechanisms:** Foster regular, collaborative feedback among interns, clinical instructors, and hospital staff to bridge performance perception gaps.
-  **Enhanced Evaluation Tool:** Incorporate new indicators to better assess competencies in research participation, application of learning, and leadership engagement. These additions aim to align academic preparation with clinical expectations and support interns' holistic professional development.



CONTACT: For more details or collaborations, contact: Daphne Gato @\_hansens  
 INFORMATION: Email: dsobocable.napar@lorma.edu.ph Phone: 0977-747-3254



**APPENDIX B**  
**Letter to the Adviser**



**Lorma Colleges**  
Carlatan, City of San Fernando, La Union  
College of Radiologic Technology

September 14, 2024

**Eladio Don C. Camalig IV, RRT, MASE**  
Instructor, College of Radiologic Technology  
LORMA Colleges  
Carlatan, City of San Fernando, La Union

Dear Sir,

Greetings!


We, the third-year students of LORMA Colleges enrolled in the Bachelor of Science in Radiologic Technology program, are conducting a research study entitled "Performance Evaluation Tool for Radiologic Technology Interns" as a requirement for our research course under the direction of Ms. Eriquel Gem Milanes.


In line with that, we are writing to humbly request your service and expertise to serve as our research adviser. We believe that your knowledge and insights will be valuable and will greatly enrich our study.


Thank you and we hope that you will consider our request to support our study.


Respectfully Yours,

  
Carl Cheevey A. Ablin  
Researcher

  
Trina Amor A. Colisao  
Researcher

  
Ashley Marie L. Daigdigan  
Researcher

  
Ethan Drancir B. Equilla  
Researcher

  
Herley Keith A. Esperon  
Researcher

  
Frances Gisella R. Lunor  
Researcher

  
Daphne Cate G. Navarro  
Researcher

Approved by:

**Eladio Don C. Camlig IV, RRT, MASE**  
Instructor, College of Radiologic Technology



APPENDIX C  
Letter to the Dean of College of Radiologic Technology



Lorma Colleges  
Carlatan, City of San Fernando, La Union  
College of Radiologic Technology

March 9, 2025

Gryn T. Salagma, RRT, MPH

Dean, College of Radiologic Technology  
LORMA Colleges  
City of San Fernando, La Union


Dear Ma'am,

Greetings! The undersigned are 3rd-year BSRT students of LORMA Colleges, currently conducting a study entitled **“Performance Evaluation Tool for Radiologic Technology Interns of Lorma Colleges.”** This study aims to evaluate the performance of Radiologic Technology interns at Lorma Colleges using a performance evaluation tool and provide recommendations for enhancement in the performance evaluation tool of the College of Radiologic Technology of Lorma Colleges.


For this, we would like to seek permission to allow our currently working research paper to undergo ethical review by the Research Ethics Committee of LORMA Colleges.


Thank you for your kind consideration, and we sincerely hope you will be able to fulfill our request.

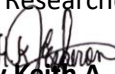
Respectfully Yours,

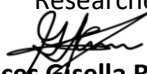
  
Carl Cheungley A. Ablin  
Researcher

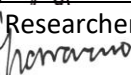
  
Trina Amor A. Colisao  
Researcher

  
Ashley Marie L. Daigidigan  
Researcher

  
Ethan Dancir B. Equilla  
Researcher

  
Herley Keith A. Esperon  
Researcher

  
Frances Gisella R. Lunor  
Researcher

  
Daphne Cate G. Navarro  
Researcher

Noted by:

ERICQUEL GEM G. MILANES, RRT  
Research Instructor

Approved by:

ELADIO DON C. CAMALIG IV, RRT, MASE  
Research Adviser



Letter to the Chairman of Research Ethics Committee



Lorma Colleges

Carlatan, City of San Fernando, La Union  
College of Radiologic Technology

March 9, 2025

Ryan Jay G. Mostoles, RMT, MASE

Chairman, Research and Extension  
LORMA Colleges  
City of San Fernando, La Union

Dear Sir,


Greetings! The undersigned are third-year students of LORMA Colleges pursuing a Bachelor of Science in Radiologic Technology and are currently enrolled in Research 2. One of the requirements of the said subject is undertaking a research study.


The group would like to seek permission to allow our currently working research paper entitled "**Performance Evaluation Tool for Radiologic Technology Interns of Lorma Colleges**" to undergo ethical review by the Research Ethics Committee of LORMA Colleges. The result of the study will serve as a basis for the enhancement of the performance evaluation tool of the College of Radiologic Technology of Lorma Colleges.

Thank you for your kind consideration, and we sincerely hope you will be able to fulfill our request.

Respectfully Yours,


  
Carl Cheeley A. Ablin  
Researcher

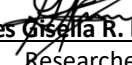
  
Ethan D. B. Equilla  
Researcher

  
Trina Amor A. Colisao  
Researcher

  
Herley Keith A. Esperon  
Researcher

  
Daphne Cate G. Navarro  
Researcher

  
Ashley Marie L. Daigidigan  
Researcher

  
Frances Gisella R. Lunor  
Researcher

Noted by:

ERICQUEL GEM G. MILANES, RRT  
Research Instructor

Approved by:

ELADIO DON C. CAMALIG IV, RRT, MASE  
Research Adviser



**APPENDIX E**  
**Letter to Commission on Higher Education**  
**Lorma Colleges**  
 Carlatan, City of San Fernando, La Union  
 College of Radiologic Technology



May 14, 2025

**Dr. Christine Nabor Ferrer**

Director IV

Commission on Higher Education

G/F CHEDRO I Building, Government Center, Sevilla, San Fernando City, La Union

Dear Ma'am/Sir,

Greetings of respect and goodwill.


We, the undersigned students of the College of Radiologic Technology at Lorma Colleges, are currently conducting a research study titled **"Performance Evaluation Tool for Radiologic Technology Interns of Lorma Colleges"** in partial fulfillment of the requirements for the degree of Bachelor of Science in Radiologic Technology.


In line with this, we respectfully request your permission to use and adapt the program outcome indicators stated in CHED Memorandum Order No. 07, Series of 2018 as the basis for our research questionnaire. These indicators will be used solely for academic and research purposes, specifically to assess the clinical performance of Radiologic Technology interns as evaluated by themselves, their clinical instructors, and affiliated hospital staff.

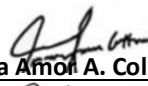
Rest assured that due recognition and proper citation will be given to CHED as the source of the said indicators. The data gathered will be handled with strict confidentiality and will not be used for any commercial or unauthorized distribution.

We sincerely hope for your kind consideration and favorable response to our request. Should you require any further information or supporting documents, Please do not hesitate to contact us at daphnecate.navarro@lorma.edu or at 0977-747-3258. Thank you very much for your time and continued support for academic research and excellence in education.

Respectfully Yours,

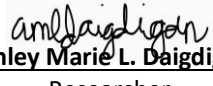
  
Carl Cheezy A. Ablin  
 Researcher

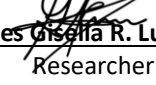
  
Ethan Drey B. Equilla  
 Researcher

  
Trina Amor A. Colisao  
 Researcher

  
Herley Keith A. Esperon  
 Researcher

Daphne Cate G. Navarro  
 Researcher

  
Ashley Marie L. Daigidigan  
 Researcher

  
Frances Gisela R. Lunor  
 Researcher

Noted by:

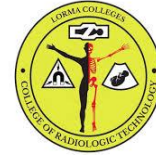
ERICQUEL GEM G. MILANES, RRT  
 Research Instructor

Approved by:

ELADIO DON C. CAMALIG IV, RRT, MASE  
 Research Adviser



APPENDIX F  
Letter to Chief Radiologic Technologist



Lorma Colleges  
Carlatan, City of San Fernando, La Union  
College of Radiologic Technology

April 30, 2025

**Mr. Oliver Hufana, RRT**  
Chief Radiologic Technologist  
LORMA Medical Center, Carlatan, City of San Fernando, La Union

Dear Mr. Hufana,


Greetings with a LORMA smile!


We, the undersigned third-year students of Lorma Colleges pursuing a Bachelor of Science in Radiologic Technology, are conducting a research study entitled **“Performance Evaluation Tool for Radiologic Technology Interns of Lorma Colleges.”** The objective of this study is to assess the performance of Radiologic Technology interns assigned at Lorma Medical Center and ITRMC using a performance evaluation tool and provide recommendations for enhancement in the performance evaluation tool of the College of Radiologic Technology of Lorma Colleges.


This research is undertaken as a part of our academic endeavor in the fulfillment of the requirements for the degree of Bachelor of Science in Radiologic Technology. In line with this, we respectfully request your permission to administer survey questionnaires through Google Forms to Radiologic Technology interns, clinical instructors, and hospital of affiliation staff within your institution. Rest assured, all information gathered will be treated with strict confidentiality and will be used solely for the purpose of this study.

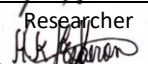
Your positive response in this matter is greatly appreciated. Please do not hesitate to contact us at daphnecate.navarro@lorma.edu or at 0977-747-3258. Thank you and God Bless!

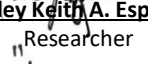
Respectfully Yours,


  
Carl Cheevey A. Ablin  
Researcher

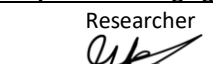
  
Ethan Darcir B. Equilla  
Researcher

  
Trina Amor A. Colisao  
Researcher

  
Herley Keith A. Esperon  
Researcher

  
Daphne Cate G. Navarro  
Researcher

  
Ashley Marie L. Daigidigan  
Researcher

  
Francis Archa R. Lunor  
Researcher

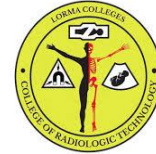
Received by:  
\_\_\_\_\_

Noted by:  
ERICQUEL GEM G. MILANES, RRT  
Research Instructor

Approved by:  
ELADIO DON C. CAMALIG IV, RRT, MASE  
Research Adviser



**APPENDIX G**  
**Letter to the Head of Radiology Department**



**Lorma Colleges**  
Carlatan, City of San Fernando, La Union  
College of Radiologic Technology

April 28, 2025

**Dr. Carol Grace D. Tadaoan, MD, FPCR**  
Head, Radiology Department  
Ilocos Training and Regional Medical Center

Dear Dr. Tadaoan,



Greetings with a LORMA smile!

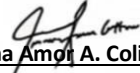
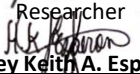
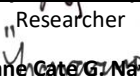
We, the undersigned third-year students of Lorma Colleges pursuing a Bachelor of Science in Radiologic Technology, are conducting a research study entitled **“Performance Evaluation Tool for Radiologic Technology Interns of Lorma Colleges.”** The objective of this study is to assess the performance of Radiologic Technology interns assigned at Lorma Medical Center and ITRMC using a performance evaluation tool and provide recommendations for enhancement in the performance evaluation tool of the College of Radiologic Technology of Lorma Colleges.

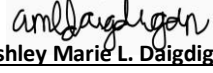
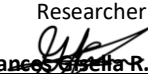
This research is undertaken as a part of our academic endeavor in the fulfillment of the requirements for the degree of Bachelor of Science in Radiologic Technology. In line with this, we respectfully request your permission to administer survey questionnaires through Google Forms to Radiologic Technology interns, clinical instructors, and hospital of affiliation staff within your institution. Rest assured, all information gathered will be treated with strict confidentiality and will be used solely for the purpose of this study.

Your positive response in this matter is greatly appreciated. Please do not hesitate to contact us at [daphnecate.navarro@lorma.edu](mailto:daphnecate.navarro@lorma.edu) or at 0977-747-3258. Thank you and God Bless!

Respectfully Yours,

  
Carl Cheevey A. Ablin  
Researcher  
  
Ethan D. Cir B. Equilla  
Researcher

  
Trina Amor A. Colisao  
Researcher  
  
Herley Keith A. Esperon  
Researcher  
  
Daphne Gato G. Navarro  
Researcher

  
Ashley Marie L. Daigdigan  
Researcher  
  
Francis R. Lunor  
Researcher

Received by:  
\_\_\_\_\_

Noted by:  
ERICQUEL GEM G. MILANES, RRT  
Research Instructor

Approved by:  
ELADIO DON C. CAMALIG IV, RRT, MASE  
Research Adviser



**APPENDIX H**  
**Letter to the Validators**



**Lorma Colleges**  
Carlatan, City of San Fernando, La Union  
College of Radiologic Technology

April 30, 2025

**Maverick Kaypee A. Colet, EdD, MASE, PTRP**

Dean, College of Physical Therapy

LORMA Colleges

Carlatan, City of San Fernando, La Union

Dear Sir,

**Greetings with a LORMA smile!**

We, the undersigned third-year students of Lorma Colleges pursuing a Bachelor of Science in Radiologic Technology, are currently conducting a research study entitled "**Performance Evaluation Tool for Radiologic Technology Interns of Lorma Colleges.**"

As part of the research process, we are humbly seeking your expertise to serve as a **validator** for our evaluation tool. This tool is designed to assess the clinical performance of Radiologic Technology interns during their internship rotation. Your insights, professional experience, and critical evaluation are highly valuable in ensuring the reliability, validity, and overall quality of the instrument we are developing.

We respectfully request your assistance in reviewing and validating the evaluation tool we have created. Your feedback will play a crucial role in refining the instrument to better serve its intended purpose in enhancing the clinical education of Radiologic Technology students.

Thank you very much for considering our request. Your support will contribute greatly to the success of our research. God bless!

Respectfully Yours,

Carl Cheevey A. Ablin  
Researcher

Ethan Darcir B. Equilla  
Researcher

Trina Amor A. Colisao  
Researcher

Herley Keith A. Esperon  
Researcher

Daphne Cater G. Navarro  
Researcher

Ashley Marie L. Daigdigan  
Researcher

Frances Garcia R. Lunor  
Researcher

Received by:

\_\_\_\_\_

Noted by:

ERICQUEL GEM G. MILANES, RRT  
Research Instructor

Approved by:

ELADIO DON C. CAMALIG IV, RRT, MASE  
Research Adviser



**Lorma Colleges**  
Carlatan, City of San Fernando, La Union  
College of Radiologic Technology



April 30, 2025

**Michael John E. Flores, RRT, MSRT**

Radiologic Technologist, Cardiovascular Catheterization Laboratory  
LORMA Medical Center  
Carlatan, City of San Fernando, La Union

Dear Sir,

**Greetings with a LORMA smile!**

We, the undersigned third-year students of Lorma Colleges pursuing a Bachelor of Science in Radiologic Technology, are currently conducting a research study entitled "**Performance Evaluation Tool for Radiologic Technology Interns of Lorma Colleges.**"


As part of the research process, we are humbly seeking your expertise to serve as a **validator** for our evaluation tool. This tool is designed to assess the clinical performance of Radiologic Technology interns during their internship rotation. Your insights, professional experience, and critical evaluation are highly valuable in ensuring the reliability, validity, and overall quality of the instrument we are developing.


We respectfully request your assistance in reviewing and validating the evaluation tool we have created. Your feedback will play a crucial role in refining the instrument to better serve its intended purpose in enhancing the clinical education of Radiologic Technology students.

Thank you very much for considering our request. Your support will contribute greatly to the success of our research. God bless!

Respectfully Yours,

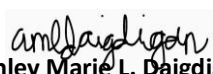
  
Carl Chesley A. Ablin  
Researcher

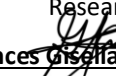
  
Ethan D. B. Equilla  
Researcher

  
Trina Amor A. Colisao  
Researcher

  
Herley Keith A. Esperon  
Researcher

  
Daphne Cate G. Navarro  
Researcher

  
Ashley Marie L. Daigdigan  
Researcher

  
Frances Gisella R. Lunor  
Researcher

Noted by:

ERICQUEL GEM G. MILANES, RRT  
Research Instructor

Approved by:

ELADIO DON C. CAMALIG IV, RRT, MASE  
Research Adviser



**Lorma Colleges**  
Carlatan, City of San Fernando, La Union  
College of Radiologic Technology



April 30, 2025

**Vincent Vladimir Acedo Adlawan, RRT**  
Senior Radiologic Technologist  
LORMA Medical Center  
Carlatan, City of San Fernando, La Union

Dear Ma'am/Sir,

**Greetings with a LORMA smile!**

We, the undersigned third-year students of Lorma Colleges pursuing a Bachelor of Science in Radiologic Technology, are currently conducting a research study entitled "**Performance Evaluation Tool for Radiologic Technology Interns of Lorma Colleges.**"


As part of the research process, we are humbly seeking your expertise to serve as a **validator** for our evaluation tool. This tool is designed to assess the clinical performance of Radiologic Technology interns during their internship rotation. Your insights, professional experience, and critical evaluation are highly valuable in ensuring the reliability, validity, and overall quality of the instrument we are developing.


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Thank you very much for considering our request. Your support will contribute greatly to the success of our research. God bless!

Respectfully Yours,

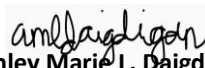
  
Carl Chee A. Ablin  
Researcher

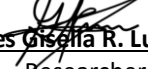
  
Ethan D. B. Equilla  
Researcher

  
Trina Amor A. Colisao  
Researcher

  
Herley Keith A. Esperon  
Researcher

Daphne Cate G. Navarro  
Researcher

  
Ashley Marie L. Daigidigan  
Researcher

  
Frances Gisela R. Lunor  
Researcher

Noted by:

ERICQUEL GEM G. MILANES, RRT  
Research Instructor

Approved by:

ELADIO DON C. CAMALIG IV, RRT, MASE  
Research Adviser



**APPENDIX I**  
**Letter to the Respondents**



**Lorma Colleges**  
Carlatan, City of San Fernando, La Union  
College of Radiologic Technology

Dear Respondent,



Greetings with a Lorma Smile!


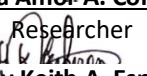
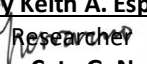
The students of BSRT—III are conducting research entitled “Performance Evaluation Tool for Radiologic Technology Interns” with the primary goal of determining and analyzing the level of performance of Radiologic Technology interns at Lorma Colleges, City of San Fernando, La Union, during their clinical practice/internship.

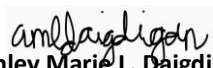
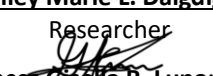
In this regard, we would like to request that you be one of the respondents in our study. We hope you can help us by answering the instrument sincerely and truthfully. All information provided will be treated with the utmost confidentiality and will be used only for academic purposes by the researchers following the Data Privacy Act of 2012.

Your positive response in this humble matter is greatly appreciated. Thank you so much for your cooperation.

Respectfully Yours,

  
Carl Cheezy A. Ablin  
Researcher  
  
Ethan Drey B. Equilla  
Researcher

  
Trina Amor A. Colisao  
Researcher  
  
Herley Keith A. Esperon  
Researcher  
  
Daphne Cate G. Navarro  
Researcher

  
Ashley Marie L. Daigdigan  
Researcher  
  
Frances Gisella R. Lunor  
Researcher

Noted by:

ERICQUEL GEM G. MILANES, RRT  
Research Instructor

Approved by:

ELADIO DON C. CAMALIG IV, RRT, MASE  
Research Adviser



**APPENDIX J**  
**Letter to the Statistician**



**Lorma Colleges**  
Carlatan, City of San Fernando, La Union  
College of Radiologic Technology

**Joylyn P. Baniaga, LPT, MAME**  
Coordinator, General Education (GED-CHS)  
LORMA Colleges  
Carlatan, City of San Fernando, La Union

**Dear Ma'am,**

**Greetings with a Lorma Smile!**

We, the undersigned third-year students of Lorma Colleges pursuing a Bachelor of Science in Radiologic Technology, are currently conducting a research study entitled "**Performance Evaluation Tool for Radiologic Technology Interns of Lorma Colleges.**"

In line with this, we respectfully seek your assistance, expertise, and time to serve as our Statistician. Specifically, we request your help in reviewing and verifying the accuracy of the statistical computations used in our study.


Attached to this letter are the following:


- A hard copy of the statement of the problem and questionnaires;
- **Excel files** containing the raw data collected from our respondents and our statistical computations, which will be **sent via email**.


Your assessment and input would be invaluable to the accuracy and success of our research. Thank you very much for your kind consideration. We sincerely hope you will be able to assist us with this request.

Respectfully Yours,

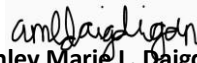
  
Carl Cheezy A. Ablin  
Researcher


  
Ethan Drayson B. Equilla  
Researcher

  
Trina Amor A. Colisao  
Researcher

  
Herley Keith A. Esperon  
Researcher

Daphne Cate G. Navarro  
Researcher

  
Ashley Marie L. Daigidigan  
Researcher

  
Frances Gisella R. Lunor  
Researcher

Noted by:

ERICQUEL GEM G. MILANES, RRT  
Research Instructor

Approved by:

ELADIO DON C. CAMALIG IV, RRT, MASE  
Research Adviser

**APPENDIX K**  
**Research Ethics Committee Approval Letter**



LC-REC Form #024  
 APPROVAL LETTER

REC Reference #: 2025-123

April 8, 2025

To: Carl Cheevey A. Ablin, Trina Amor A. Collsao, Ashley Marie L. Daigidigan, Ethan Drahcir B. Equilla, Herley Keith A. Esperon, Frances Gisella R. Lunor and Daphne Cate G. Navarro  
 LORMA Colleges, College of Radiologic Technology

Subject: Approval of the Research Study "PERFORMANCE EVALUATION TOOL FOR RADIOLOGIC TECHNOLOGY INTERNS OF LORMA COLLEGES" by the Research Ethics Committee (REC).

Dear Researchers,

The Research Ethics Committee (REC) has reviewed your application to conduct the above-mentioned research study in the LOCALE OF STUDY with you as the Principal Investigators within the duration of April 8, 2025 to April 8, 2026.

The Following documents have been reviewed and approved:

1. Letter of Intent to Conduct the Study
2. Endorsement of the Research Technical Panel
3. Title and Statement of the Problem/ Objective
4. Literature Review
5. Methods and Procedures
6. Population and Locale
7. Exclusion/Inclusion Criteria
8. Data Analysis
9. Ethical Considerations

We approve the study to be conducted in the presented form provided the following are integrated in the final research protocol:

1. Indicate the funding of the study and ensure that the research process does not harm the respondents in any way.
2. Include asking permission from the hospital and specify if the questionnaire used will be in digital or printed form.
3. The survey tool is subject to validity and reliability testing.
4. Clearly indicate that the questionnaire will be distributed during the time that is convenient for the respondents.

None of the Investigators participating in this study took part in the decision making and voting procedure for this study.

The Institutional REC expects to be informed about the progress of the study, any revision in the protocol before implementation and participants'/respondents' information/informed consent. Likewise, you are required to provide the Board a copy of the final report.

Yours Sincerely,

  
 RYAN JAY G. MOSTOLES, MASE, RMT  
 Interim Chairman, Lorma Colleges-Research Ethics Committee



|  |          |          |          |          |          |
|--|----------|----------|----------|----------|----------|
| <b>d. Patient Care</b>   | <b>5</b> | <b>4</b> | <b>3</b> | <b>2</b> | <b>1</b> |
| 1. Explains and gives clear instructions to patients prior to radiological procedure.  |          |          |          |          |          |
| 2. Prepares a supply of fresh gowns for patients' use and provides privacy for patients' change of clothes before and after the procedure. |          |          |          |          |          |
| 3. Transfers patients from the gurney or wheelchair to the x-ray table and vice-versa with minimum discomfort to the patient.              |          |          |          |          |          |
| 4. Refrains from unnecessarily hurrying up patients to finish a procedure.   |          |          |          |          |          |
| 5. Prioritizes patients according to a set of protocols  |          |          |          |          |          |
| 6. Establishes rapport and empathy towards the patient.  |          |          |          |          |          |
| <b>e. Leadership, Management, and Entrepreneurship</b>   | <b>5</b> | <b>4</b> | <b>3</b> | <b>2</b> | <b>1</b> |
| 1. Collaborates in planning activities for the department.   |          |          |          |          |          |
| 2. Organizes colleagues to participate in various activities.  |          |          |          |          |          |
| 3. Proposes ways to improve process flows and procedures.  |          |          |          |          |          |
| 4. Solves simple problems with minimal supervision.  |          |          |          |          |          |
| 5. Recognizes opportunities for entrepreneurship.  |          |          |          |          |          |
| 6. Supports the implementation of new imaging innovations.   |          |          |          |          |          |
| <b>f. Academic and Research Activities</b>   | <b>5</b> | <b>4</b> | <b>3</b> | <b>2</b> | <b>1</b> |
| 1. Applies teaching and learning principles to prepare students for their clinical practice.   |          |          |          |          |          |
| 2. Assess student performance in the classrooms in the clinical areas.   |          |          |          |          |          |
| 3. Conducts research studies related to the Radiologic Technology profession.  |          |          |          |          |          |
| <b>g. Continuous Life-long learning</b>  | <b>5</b> | <b>4</b> | <b>3</b> | <b>2</b> | <b>1</b> |
| 1. Recognizes the need to attend seminars and workshops regularly.   |          |          |          |          |          |
| 2. Schedules attendance at conferences and conventions.  |          |          |          |          |          |
| 3. Expresses intent to undergo further training in any of the various fields of specialization.  |          |          |          |          |          |
| 4. Recognizes the need to undertake graduate studies.  |          |          |          |          |          |
| 5. Reads journals on current technological advancements and developments in the profession.  |          |          |          |          |          |
| <b>h. Nationalism</b>  | <b>5</b> | <b>4</b> | <b>3</b> | <b>2</b> | <b>1</b> |
| 1. Supports the National, Regional, and Local Development Plans for Health Care Programs.  |          |          |          |          |          |
| 2. Advocates socio-civic involvement in the community.   |          |          |          |          |          |
| 3. Promotes a deep sense of genuine service towards Filipinos.   |          |          |          |          |          |

## APPENDIX M

### Validation Tool for Questionnaires Validators

**Instruction:** Please indicate to what extent you agree with the given statements regarding each item of the questionnaire. These items are designed to assess the level of performance of Radiologic Technology interns based on the program outcomes specified in CHED Memorandum Order No. 7, Series of 2018. Check the number that corresponds to your perception using the following scales:

Degree of Relevance:

| Scale | Interpretation                              |
|-------|---|
| 1     | Strongly Disagree (No relevance at all)     |
| 2     | Disagree (Item is somewhat relevant)        |
| 3     | Neutral (Item is moderately relevant)       |
| 4     | Agree (Item is highly relevant)             |
| 5     | Strongly Agree (Item is extremely relevant) |

Degree of Clarity:

| Scale | Interpretation   |
|-------|--|
| 1     | Strongly Disagree (Not clear)                          |
| 2     | Disagree (Item needs significant revision)             |
| 3     | Neutral (Item is somewhat clear, needs minor revision) |
| 4     | Agree (Item is very clear)                             |
| 5     | Strongly Agree (Item is exceptionally clear)           |

**Level of Performance of Radiologic Technology Interns**

| <b>a. Application of Scientific Knowledge, Technical Skills, Proper Work Attitude, and Values</b>   |           |   |   |   |   |         |   |   |   |   |          |
|---|-----------|---|---|---|---|---------|---|---|---|---|----------|
| Statements  | RELEVANCE |   |   |   |   | CLARITY |   |   |   |   | COMMENTS |
|   | 5         | 4 | 3 | 2 | 1 | 5       | 4 | 3 | 2 | 1 |          |
| 1. Performs radiologic procedures according to protocols.   |           |   |   |   |   |         |   |   |   |   |          |
| 2. Positions the patient correctly during a procedure.  |           |   |   |   |   |         |   |   |   |   |          |
| 3. Recognizes problems in image quality and institutes measures to address them.                    |           |   |   |   |   |         |   |   |   |   |          |
| 4. Practices good housekeeping after every procedure.   |           |   |   |   |   |         |   |   |   |   |          |
| 5. Demonstrates a good working relationship with colleagues.  |           |   |   |   |   |         |   |   |   |   |          |
| <b>b. Local and International Professional Ethical Practice</b>                                     |           |   |   |   |   |         |   |   |   |   |          |
| Statements  | RELEVANCE |   |   |   |   | CLARITY |   |   |   |   | COMMENTS |
|   | 5         | 4 | 3 | 2 | 1 | 5       | 4 | 3 | 2 | 1 |          |
| 1. Observes “patient confidentiality” and the other provisions of the Patient’s Bill of Rights.     |           |   |   |   |   |         |   |   |   |   |          |
| 2. Practices the Code of Ethics of the profession.  |           |   |   |   |   |         |   |   |   |   |          |
| <b>c. Radiation Safety and Protection Measures</b>  |           |   |   |   |   |         |   |   |   |   |          |
| Statements  | RELEVANCE |   |   |   |   | CLARITY |   |   |   |   | COMMENTS |
|   | 5         | 4 | 3 | 2 | 1 | 5       | 4 | 3 | 2 | 1 |          |
| 1. Wears protective shields, e.g. lead aprons and goggles, when performing radiological procedures. |           |   |   |   |   |         |   |   |   |   |          |
| 2. Collimates the area of exposure.   |           |   |   |   |   |         |   |   |   |   |          |
| 3. Utilizes the lowest possible exposure technique factors.   |           |   |   |   |   |         |   |   |   |   |          |
| 4. Prevents unnecessary patient radiation exposure.   |           |   |   |   |   |         |   |   |   |   |          |
| 5. Restricts persons in the exposure area during radiological procedures.                           |           |   |   |   |   |         |   |   |   |   |          |
| 6. Closes the x-ray room and ensures that the red light is on during exposures.                     |           |   |   |   |   |         |   |   |   |   |          |
| <b>d. Patient Care</b>  |           |   |   |   |   |         |   |   |   |   |          |
| Statements  | RELEVANCE |   |   |   |   | CLARITY |   |   |   |   | COMMENTS |
|   | 5         | 4 | 3 | 2 | 1 | 5       | 4 | 3 | 2 | 1 |          |



| 3. Conducts research studies related to the Radiologic Technology profession.                   |           |   |   |   |   |         |   |   |   |   |          |  |
|---|-----------|---|---|---|---|---------|---|---|---|---|----------|--|
| <b>g. Continuous Life-long learning</b>   |           |   |   |   |   |         |   |   |   |   |          |  |
| Statements  | RELEVANCE |   |   |   |   | CLARITY |   |   |   |   | COMMENTS |  |
|   | 5         | 4 | 3 | 2 | 1 | 5       | 4 | 3 | 2 | 1 |          |  |
| 1. Recognizes the need to attend seminars and workshops regularly.                              |           |   |   |   |   |         |   |   |   |   |          |  |
| 2. Schedules attendance at conferences and conventions.   |           |   |   |   |   |         |   |   |   |   |          |  |
| 3. Expresses intent to undergo further training in any of the various fields of specialization. |           |   |   |   |   |         |   |   |   |   |          |  |
| 4. Recognizes the need to undertake graduate studies.   |           |   |   |   |   |         |   |   |   |   |          |  |
| 5. Reads journals on current technological advancements and developments in the profession.     |           |   |   |   |   |         |   |   |   |   |          |  |
| <b>h. Nationalism</b>   |           |   |   |   |   |         |   |   |   |   |          |  |
| Statements  | RELEVANCE |   |   |   |   | CLARITY |   |   |   |   | COMMENTS |  |
|   | 5         | 4 | 3 | 2 | 1 | 5       | 4 | 3 | 2 | 1 |          |  |
| 1. Supports the National, Regional, and Local Development Plans for Health Care Programs.       |           |   |   |   |   |         |   |   |   |   |          |  |
| 2. Advocates socio-civic involvement in the community.  |           |   |   |   |   |         |   |   |   |   |          |  |
| 3. Promotes a deep sense of genuine service towards Filipinos.                                  |           |   |   |   |   |         |   |   |   |   |          |  |

**Thank you for your cooperation.**

Validated by: \_\_\_\_\_

**APPENDIX N**

**Output of Questionnaire Validation**

**Validity of the Questionnaire**

**Instruction:** Please indicate to what extent you agree with the given statements regarding each item of the questionnaire. These items are designed to assess the level of performance of Radiologic Technology interns based on the program outcomes specified in CHED Memorandum Order No. 7, Series of 2018. Check the number that corresponds to your perception using the following scales:

Degree of Relevance:

- Scale Interpretation
- 1 Strongly Disagree (No relevance at all)
- 2 Disagree (Item is somewhat relevant)
- 3 Neutral (Item is moderately relevant)
- 4 Agree (Item is highly relevant)
- 5 Strongly Agree (Item is extremely relevant)

Degree of Clarity:

- Scale Interpretation
- 1 Strongly Disagree (Not clear)
- 2 Disagree (Item needs significant revision)
- 3 Neutral (Item is somewhat clear, needs minor revision)
- 4 Agree (Item is very clear)
- 5 Strongly Agree (Item is exceptionally clear)

**Level of Performance of Radiologic Technology Interns**

| a. Application of Scientific Knowledge, Technical Skills, Proper Work Attitude, and Values |           |   |   |   |   |         |   |   |   |   |          |
|--|-----------|---|---|---|---|---------|---|---|---|---|----------|
| Statements   | RELEVANCE |   |   |   |   | CLARITY |   |   |   |   | COMMENTS |
|  | 5         | 4 | 3 | 2 | 1 | 5       | 4 | 3 | 2 | 1 |          |
| 1. Performs radiologic procedures according to protocols.                                  |           |   |   |   |   | /       |   |   |   |   |          |
| 2. Positions the patient correctly during a procedure.                                     | /         |   |   |   |   | /       |   |   |   |   |          |
| 3. Recognizes problems in image quality and institutes measures to address them.           | /         |   |   |   |   | /       |   |   |   |   |          |
| 4. Practices good housekeeping after every procedure.                                      | /         |   |   |   |   | /       |   |   |   |   |          |
| 5. Demonstrates a good working relationship with colleagues.                               | /         |   |   |   |   | /       |   |   |   |   |          |

**b. Local and International Professional Ethical Practice**

| Statements  | RELEVANCE |   |   |   |   | CLARITY |   |   |   |   | COMMENTS |
|---|-----------|---|---|---|---|---------|---|---|---|---|----------|
|   | 5         | 4 | 3 | 2 | 1 | 5       | 4 | 3 | 2 | 1 |          |
| 1. Observes "patient confidentiality" and the other provisions of the Patient's Bill of Rights. | ✓         |   |   |   |   | ✓       |   |   |   |   |          |
| 2. Practices the Code of Ethics of the profession.  | ✓         |   |   |   |   | ✓       |   |   |   |   |          |

**c. Radiation Safety and Protection Measures**

| Statements  | RELEVANCE |   |   |   |   | CLARITY |   |   |   |   | COMMENTS |
|---|-----------|---|---|---|---|---------|---|---|---|---|----------|
|   | 5         | 4 | 3 | 2 | 1 | 5       | 4 | 3 | 2 | 1 |          |
| 1. Wears protective shields, e.g. lead aprons and goggles, when performing radiological procedures. | ✓         |   |   |   |   | ✓       |   |   |   |   |          |
| 2. Collimates the area of exposure.   | ✓         |   |   |   |   | ✓       |   |   |   |   |          |
| 3. Utilizes the lowest possible exposure technique factors.   | ✓         |   |   |   |   | ✓       |   |   |   |   |          |
| 4. Prevents unnecessary patient radiation exposure.   | ✓         |   |   |   |   | ✓       |   |   |   |   |          |
| 5. Restricts persons in the exposure area during radiological procedures.                           | ✓         |   |   |   |   | ✓       |   |   |   |   |          |
| 6. Closes the x-ray room and ensures that the red light is on during exposures.                     | ✓         |   |   |   |   | ✓       |   |   |   |   |          |

**d. Patient Care**

| Statements   | RELEVANCE |   |   |   |   | CLARITY |   |   |   |   | COMMENTS |
|--|-----------|---|---|---|---|---------|---|---|---|---|----------|
|  | 5         | 4 | 3 | 2 | 1 | 5       | 4 | 3 | 2 | 1 |          |
| 1. Explains and gives clear instructions to patients prior to radiological procedure.  | ✓         |   |   |   |   | ✓       |   |   |   |   |          |
| 2. Prepares a supply of fresh gowns for patients' use and provides privacy for patients' change of clothes before and after the procedure. | ✓         |   |   |   |   | ✓       |   |   |   |   |          |
| 3. Transfers patients from the gurney or wheelchair to the x-ray table and vice-versa with minimum discomfort to the patient.              | ✓         |   |   |   |   | ✓       |   |   |   |   |          |

|  |   |  |  |  |  |  |  |  |  |   |  |  |  |
|--|---|--|--|--|--|--|--|--|--|---|--|--|--|
| 4. Refrains from unnecessarily hurrying up patients to finish a procedure. | ✓ |  |  |  |  |  |  |  |  | ✓ |  |  |  |
| 5. Prioritizes patients according to a set of protocols                    | ✓ |  |  |  |  |  |  |  |  | ✓ |  |  |  |
| 6. Establishes rapport and empathy towards the patient.                    | ✓ |  |  |  |  |  |  |  |  | ✓ |  |  |  |

**e. Leadership, Management, and Entrepreneurship**

| Statements  | RELEVANCE |   |   |   |   | CLARITY |   |   |   |   | COMMENTS |  |  |
|---|-----------|---|---|---|---|---------|---|---|---|---|----------|--|--|
|   | 5         | 4 | 3 | 2 | 1 | 5       | 4 | 3 | 2 | 1 |          |  |  |
| 1. Collaborates in planning activities for the department.    | ✓         |   |   |   |   |         |   |   |   |   | ✓        |  |  |
| 2. Organizes colleagues to participate in various activities. | ✓         |   |   |   |   |         |   |   |   |   | ✓        |  |  |
| 3. Proposes ways to improve process flows and procedures.     | ✓         |   |   |   |   |         |   |   |   |   | ✓        |  |  |
| 4. Solves simple problems with minimal supervision.           | ✓         |   |   |   |   |         |   |   |   |   | ✓        |  |  |
| 5. Recognizes opportunities for entrepreneurship.             | ✓         |   |   |   |   |         |   |   |   |   | ✓        |  |  |
| 6. Supports the implementation of new imaging innovations.    | ✓         |   |   |   |   |         |   |   |   |   | ✓        |  |  |

**f. Academic and Research Activities**

| Statements   | RELEVANCE |   |   |   |   | CLARITY |   |   |   |   | COMMENTS |  |  |
|--|-----------|---|---|---|---|---------|---|---|---|---|----------|--|--|
|  | 5         | 4 | 3 | 2 | 1 | 5       | 4 | 3 | 2 | 1 |          |  |  |
| 1. Applies teaching and learning principles to prepare students for their clinical practice. | ✓         |   |   |   |   |         |   |   |   |   | ✓        |  |  |
| 2. Assess student performance in the classrooms in the clinical areas.                       | ✓         |   |   |   |   |         |   |   |   |   | ✓        |  |  |
| 3. Conducts research studies related to the Radiologic Technology profession.                | ✓         |   |   |   |   |         |   |   |   |   | ✓        |  |  |

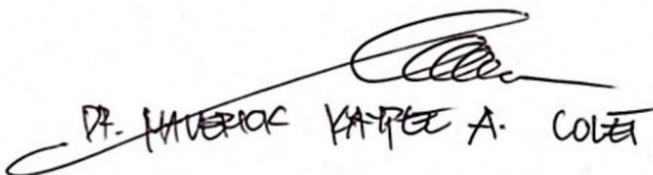
**g. Continuous Life-long learning**

| Statements   | RELEVANCE |   |   |   |   | CLARITY |   |   |   |   | COMMENTS |  |  |
|--|-----------|---|---|---|---|---------|---|---|---|---|----------|--|--|
|  | 5         | 4 | 3 | 2 | 1 | 5       | 4 | 3 | 2 | 1 |          |  |  |
| 1. Recognizes the need to attend seminars and workshops regularly. | ✓         |   |   |   |   |         |   |   |   |   | ✓        |  |  |

| 2. Schedules attendance at conferences and conventions.   | ✓         |   |   |   |   |         | ✓ |   |   |   |          |  |
|---|-----------|---|---|---|---|---------|---|---|---|---|----------|--|
| 3. Expresses intent to undergo further training in any of the various fields of specialization. | ✓         |   |   |   |   |         | ✓ |   |   |   |          |  |
| 4. Recognizes the need to undertake graduate studies.   | ✓         |   |   |   |   |         | ✓ |   |   |   |          |  |
| 5. Reads journals on current technological advancements and developments in the profession.     | ✓         |   |   |   |   |         | ✓ |   |   |   |          |  |
| <b>h. Nationalism</b>   |           |   |   |   |   |         |   |   |   |   |          |  |
| Statements  | RELEVANCE |   |   |   |   | CLARITY |   |   |   |   | COMMENTS |  |
|   | 5         | 4 | 3 | 2 | 1 | 5       | 4 | 3 | 2 | 1 |          |  |
| 1. Supports the National, Regional, and Local Development Plans for Health Care Programs.       | ✓         |   |   |   |   |         | ✓ |   |   |   |          |  |
| 2. Advocates socio-civic involvement in the community.  | ✓         |   |   |   |   |         | ✓ |   |   |   |          |  |
| 3. Promotes a deep sense of genuine service towards Filipinos.                                  | ✓         |   |   |   |   |         | ✓ |   |   |   |          |  |

Thank you for your cooperation.

The indicators are from the CMO thus are relevant + clear.

  
 Dr. MAURICIO MARCELO A. COLA

Validated by: \_\_\_\_\_







| 2. Schedules attendance at conferences and conventions.   | ✓         |   |   |   |   |         |   |   |   |   |          |  |  |  |
|---|-----------|---|---|---|---|---------|---|---|---|---|----------|--|--|--|
| 3. Expresses intent to undergo further training in any of the various fields of specialization. | ✓         |   |   |   |   |         |   |   |   |   |          |  |  |  |
| 4. Recognizes the need to undertake graduate studies.   | ✓         |   |   |   |   |         |   |   |   |   |          |  |  |  |
| 5. Reads journals on current technological advancements and developments in the profession.     | ✓         |   |   |   |   |         |   |   |   |   |          |  |  |  |
| <b>h. Nationalism</b>   |           |   |   |   |   |         |   |   |   |   |          |  |  |  |
| Statements  | RELEVANCE |   |   |   |   | CLARITY |   |   |   |   | COMMENTS |  |  |  |
|   | 5         | 4 | 3 | 2 | 1 | 5       | 4 | 3 | 2 | 1 |          |  |  |  |
| 1. Supports the National, Regional, and Local Development Plans for Health Care Programs.       | ✓         |   |   |   |   |         |   |   |   |   |          |  |  |  |
| 2. Advocates socio-civic involvement in the community.  | ✓         |   |   |   |   |         |   |   |   |   |          |  |  |  |
| 3. Promotes a deep sense of genuine service towards Filipinos.                                  | ✓         |   |   |   |   |         |   |   |   |   |          |  |  |  |

Thank you for your cooperation.

1. Make your scale to a 4 Likert scale able to diminish the neutral answers
  2. Since its a researcher made tool i would suggest that it will go for pilot test the credibility of the tools
- B. ~~Answer~~

Validated by: MICHAEL JOHN E. FLORES, R.N., M.S.N.

### Validity of the Questionnaire

**Instruction:** Please indicate to what extent you agree with the given statements regarding each item of the questionnaire. These items are designed to assess the level of performance of Radiologic Technology interns based on the program outcomes specified in CHED Memorandum Order No. 7, Series of 2018. Check the number that corresponds to your perception using the following scales:

**Degree of Relevance:**

- |       |   |
|-------|---|
| Scale | Interpretation                              |
| 1     | Strongly Disagree (No relevance at all)     |
| 2     | Disagree (Item is somewhat relevant)        |
| 3     | Neutral (Item is moderately relevant)       |
| 4     | Agree (Item is highly relevant)             |
| 5     | Strongly Agree (Item is extremely relevant) |

**Degree of Clarity:**

- |       |  |
|-------|--|
| Scale | Interpretation   |
| 1     | Strongly Disagree (Not clear)                          |
| 2     | Disagree (Item needs significant revision)             |
| 3     | Neutral (Item is somewhat clear, needs minor revision) |
| 4     | Agree (Item is very clear)                             |
| 5     | Strongly Agree (Item is exceptionally clear)           |

**Level of Performance of Radiologic Technology Interns**

| a. Application of Scientific Knowledge, Technical Skills, Proper Work Attitude, and Values |           |   |   |   |   |         |   |   |   |   |   |
|--|-----------|---|---|---|---|---------|---|---|---|---|---|
| Statements   | RELEVANCE |   |   |   |   | CLARITY |   |   |   |   | COMMENTS  |
|  | 5         | 4 | 3 | 2 | 1 | 5       | 4 | 3 | 2 | 1 |   |
| 1. Performs radiologic procedures according to protocols.                                  | ✓         |   |   |   |   | ✓       |   |   |   |   |   |
| 2. Positions the patient correctly during a procedure.                                     | ✓         |   |   |   |   | ✓       |   |   |   |   | * change to "ensures proper patient positioning" during procedure   |
| 3. Recognizes problems in image quality and institutes measures to address them.           | ✓         |   |   |   |   | ✓       |   |   |   |   |   |
| 4. Practices good housekeeping after every procedure.                                      | ✓         |   |   |   |   | ✓       |   |   |   |   |   |
| 5. Demonstrates a good working relationship with colleagues.                               |           |   |   |   | ✓ | ✓       |   |   |   |   | * kung pwede i-bant to since in accordance with CHED ang performance tools and relevant ang working relationship sa performance ng intern |

**b. Local and International Professional Ethical Practice**

| Statements  | RELEVANCE |   |   |   |   | CLARITY |   |   |   |   | COMMENTS |
|---|-----------|---|---|---|---|---------|---|---|---|---|----------|
|   | 5         | 4 | 3 | 2 | 1 | 5       | 4 | 3 | 2 | 1 |          |
| 1. Observes "patient confidentiality" and the other provisions of the Patient's Bill of Rights. | ✓         |   |   |   |   | ✓       |   |   |   |   |          |
| 2. Practices the Code of Ethics of the profession.  | ✓         |   |   |   |   | ✓       |   |   |   |   |          |

**c. Radiation Safety and Protection Measures**

| Statements  | RELEVANCE |   |   |   |   | CLARITY |   |   |   |   | COMMENTS            |
|---|-----------|---|---|---|---|---------|---|---|---|---|---------------------|
|   | 5         | 4 | 3 | 2 | 1 | 5       | 4 | 3 | 2 | 1 |                     |
| 1. Wears protective shields, e.g. lead aprons and goggles, when performing radiological procedures. | ✓         |   |   |   |   | ✓       |   |   |   |   |                     |
| 2. Collimates the area of exposure.   | ✓         |   |   |   |   | ✓       |   |   |   |   |                     |
| 3. Utilizes the <u>lowest</u> possible exposure technique factors.                                  | ✓         |   |   |   |   | ✓       |   |   |   |   | * change to optimal |
| 4. Prevents unnecessary patient radiation exposure.   | ✓         |   |   |   |   | ✓       |   |   |   |   |                     |
| 5. Restricts persons in the exposure area during radiological procedures.                           | ✓         |   |   |   |   | ✓       |   |   |   |   |                     |
| 6. Closes the x-ray room and ensures that the red light is on during exposures.                     | ✓         |   |   |   |   | ✓       |   |   |   |   |                     |

**d. Patient Care**

| Statements   | RELEVANCE |   |   |   |   | CLARITY |   |   |   |   | COMMENTS |
|--|-----------|---|---|---|---|---------|---|---|---|---|----------|
|  | 5         | 4 | 3 | 2 | 1 | 5       | 4 | 3 | 2 | 1 |          |
| 1. Explains and gives clear instructions to patients prior to radiological procedure.  | ✓         |   |   |   |   | ✓       |   |   |   |   |          |
| 2. Prepares a supply of fresh gowns for patients' use and provides privacy for patients' change of clothes before and after the procedure. | ✓         |   |   |   |   | ✓       |   |   |   |   |          |
| 3. Transfers patients from the gurney or wheelchair to the x-ray table and vice-versa with minimum discomfort to the patient.              | ✓         |   |   |   |   | ✓       |   |   |   |   |          |

|  |   |  |  |  |  |  |   |  |  |  |  |  |
|--|---|--|--|--|--|--|---|--|--|--|--|--|
| 4. Refrains from unnecessarily hurrying up patients to finish a procedure. | ✓ |  |  |  |  |  | ✓ |  |  |  |  |  |
| 5. Prioritizes patients according to a set of protocols                    | ✓ |  |  |  |  |  | ✓ |  |  |  |  |  |
| 6. Establishes rapport and empathy towards the patient.                    | ✓ |  |  |  |  |  | ✓ |  |  |  |  |  |

#### e. Leadership, Management, and Entrepreneurship

| Statements  | RELEVANCE |   |   |   |   | CLARITY |   |   |   |   | COMMENTS |  |
|---|-----------|---|---|---|---|---------|---|---|---|---|----------|--|
|   | 5         | 4 | 3 | 2 | 1 | 5       | 4 | 3 | 2 | 1 |          |  |
| 1. Collaborates in planning activities for the department.    | ✓         |   |   |   |   | ✓       |   |   |   |   |          |  |
| 2. Organizes colleagues to participate in various activities. | ✓         |   |   |   |   | ✓       |   |   |   |   |          |  |
| 3. Proposes ways to improve process flows and procedures.     | ✓         |   |   |   |   | ✓       |   |   |   |   |          |  |
| 4. Solves simple problems with minimal supervision.           | ✓         |   |   |   |   | ✓       |   |   |   |   |          |  |
| 5. Recognizes opportunities for entrepreneurship.             | ✓         |   |   |   |   | ✓       |   |   |   |   |          |  |
| 6. Supports the implementation of new imaging innovations.    | ✓         |   |   |   |   | ✓       |   |   |   |   |          |  |

#### f. Academic and Research Activities

| Statements   | RELEVANCE |   |   |   |   | CLARITY |   |   |   |   | COMMENTS |  |
|--|-----------|---|---|---|---|---------|---|---|---|---|----------|--|
|  | 5         | 4 | 3 | 2 | 1 | 5       | 4 | 3 | 2 | 1 |          |  |
| 1. Applies teaching and learning principles to prepare students for their clinical practice. | ✓         |   |   |   |   | ✓       |   |   |   |   |          |  |
| 2. Assess student performance in the classrooms in the clinical areas.                       | ✓         |   |   |   |   | ✓       |   |   |   |   |          |  |
| 3. Conducts research studies related to the Radiologic Technology profession.                | ✓         |   |   |   |   | ✓       |   |   |   |   |          |  |

#### g. Continuous Life-long learning

| Statements   | RELEVANCE |   |   |   |   | CLARITY |   |   |   |   | COMMENTS |  |
|--|-----------|---|---|---|---|---------|---|---|---|---|----------|--|
|  | 5         | 4 | 3 | 2 | 1 | 5       | 4 | 3 | 2 | 1 |          |  |
| 1. Recognizes the need to attend seminars and workshops regularly. | ✓         |   |   |   |   | ✓       |   |   |   |   |          |  |



**APPENDIX O**

**Statistician's Certification**

**CERTIFICATION OF STATISTICAL ANALYSIS**

This is to certify that the data of the undergraduate thesis entitled, "**PERFORMANCE EVALUATION TOOL FOR RADIOLOGIC TECHNOLOGY INTERNS OF LORMA COLLEGES,**" prepared and submitted by **CARL CHEEVEY A. ABLIN, TRINA AMOR A. COLISAO, ASHLEY MARIE L. DAIGDIGAN, ETHAN DRAHCIR B. EQUILLA, HERLEY KEITH A. ESPERON, FRANCES GISELLA R. LUNOR, AND DAPHNE CATE G. NAVARRO,** during the A.Y. 2024-2025 in partial fulfillment for the degree **BACHELOR OF SCIENCE IN RADIOLOGIC TECHNOLOGY** has been statistically analyzed and reviewed by the undersigned.

  
**JOYLYN P. BANIAGA, LPT, MAME**  
*Statistician*

## APPENDIX P

## Statistical Computation Results

## Level of Performance of Radiologic Technology Interns (Weighted Mean)

## Evaluation by Radiologic Technology Interns

| INDICATORS |      |      |      |      |      |      |      |      |
|------------|------|------|------|------|------|------|------|------|
|            | AS   | L    | R    | PC   | LME  | ARA  | CLL  | N    |
| 1          | 4.67 | 4.92 | 4.67 | 4.81 | 4.54 | 4.65 | 4.48 | 4.85 |
| 2          | 4.83 | 4.90 | 4.71 | 4.75 | 4.56 | 4.58 | 4.40 | 4.81 |
| 3          | 4.58 |      | 4.69 | 4.79 | 4.63 | 4.48 | 4.60 | 4.92 |
| 4          | 4.81 |      | 4.73 | 4.81 | 4.67 |      | 4.52 |      |
| 5          | 4.69 |      | 4.90 | 4.88 | 4.63 |      | 4.54 |      |
| 6          |      |      | 4.92 | 4.90 | 4.85 |      |      |      |
| OM         | 4.72 | 4.91 | 4.77 | 4.82 | 4.65 | 4.57 | 4.51 | 4.86 |

## Evaluation by Clinical Instructors

| INDICATORS |      |   |      |    |      |      |      |   |
|------------|------|---|------|----|------|------|------|---|
|            | AS   | L | R    | PC | LME  | ARA  | CLL  | N |
| 1          | 5    | 5 | 5    | 5  | 4    | 5    | 4.67 | 5 |
| 2          | 4    | 5 | 4.67 | 5  | 4    | 5    | 4.67 | 5 |
| 3          | 4.33 |   | 5    | 5  | 4.67 | 4.67 | 4.67 | 5 |
| 4          | 5    |   | 5    | 5  | 4.67 |      | 5    |   |
| 5          | 5    |   | 5    | 5  | 4.67 |      | 4.67 |   |
| 6          |      |   | 5    | 5  | 5    |      |      |   |
| OM         | 4.67 | 5 | 4.94 | 5  | 4.50 | 4.89 | 4.73 | 5 |

## Evaluation by Hospital of Affiliation Staff

| INDICATORS |      |      |      |      |      |      |      |      |
|------------|------|------|------|------|------|------|------|------|
|            | AS   | L    | R    | PC   | LME  | ARA  | CLL  | N    |
| 1          | 4.80 | 4.83 | 4.70 | 4.57 | 4.20 | 4.33 | 4.20 | 4.73 |
| 2          | 4.50 | 4.73 | 4.47 | 4.53 | 4.00 | 4.37 | 4.43 | 4.50 |
| 3          | 4.40 |      | 4.47 | 4.57 | 4.07 | 3.60 | 4.13 | 4.87 |
| 4          | 4.63 |      | 4.43 | 4.63 | 4.27 |      | 4.30 |      |
| 5          | 4.60 |      | 4.70 | 4.63 | 3.90 |      | 3.97 |      |
| 6          |      |      | 4.70 | 4.83 | 4.43 |      |      |      |
| OM         | 4.59 | 4.78 | 4.58 | 4.63 | 4.15 | 4.10 | 4.21 | 4.70 |

**Significant Difference of Performance of Radiologic Technology Interns as evaluated by Radiologic Technology Interns, Clinical Instructors, Hospital of Affiliation Staff.**

**Indicator: Application of Scientific Knowledge, Technical Skills, Proper Work Attitude, and Values**  
**One factor ANOVA**

| Mean  | n  | Std. Dev |       |
|-------|----|----------|-------|
| 4.716 | 5  | 0.1038   | RI    |
| 4.666 | 5  | 0.4720   | CI    |
| 4.586 | 5  | 0.1499   | HAS   |
| 4.656 | 15 | 0.2761   | Total |

**ANOVA table**

| Source    | SS     | df | MS      | F    | p-value |
|-----------|--------|----|---------|------|---------|
| Treatment | 0.0430 | 2  | 0.02150 | 0.25 | .7813   |
| Error     | 1.0242 | 12 | 0.08535 |      |         |
| Total     | 1.0672 | 14 |         |      |         |

**Indicator: Local and International Professional Ethical Practice**

**One factor ANOVA**

| Mean  | n | Std. Dev |       |
|-------|---|----------|-------|
| 4.910 | 2 | 0.0141   | RI    |
| 5.000 | 2 | 0.0000   | CI    |
| 4.780 | 2 | 0.0707   | HAS   |
| 4.897 | 6 | 0.1041   | Total |

**ANOVA table**

| Source    | SS     | df | MS      | F     | p-value |
|-----------|--------|----|---------|-------|---------|
| Treatment | 0.0489 | 2  | 0.02447 | 14.12 | .0298   |
| Error     | 0.0052 | 3  | 0.00173 |       |         |
| Total     | 0.0541 | 5  |         |       |         |

**POST HOC analysis**

**p-values for pairwise t-tests**

|     |       | HAS   | RI    | CI    |
|-----|-------|-------|-------|-------|
|     |       | 4.780 | 4.910 | 5.000 |
| HAS | 4.780 |       |       |       |
| RI  | 4.910 | .0524 |       |       |
| CI  | 5.000 | .0132 | .1194 |       |

**Tukey simultaneous comparison t-values (d.f. = 3)**

|     |       | HAS   | RI    | CI    |
|-----|-------|-------|-------|-------|
|     |       | 4.780 | 4.910 | 5.000 |
| HAS | 4.780 |       |       |       |
| RI  | 4.910 | 3.12  |       |       |
| CI  | 5.000 | 5.28  | 2.16  |       |

**critical values for experimentwise error rate:**

|      |      |
|------|------|
| 0.05 | 4.18 |
| 0.01 | 7.50 |

**Indicator: Radiation Safety and Protection Measures**

**One factor ANOVA**

| Mean  | n  | Std. Dev |       |
|-------|----|----------|-------|
| 4.770 | 6  | 0.1105   | RI    |
| 4.944 | 6  | 0.1361   | CI    |
| 4.578 | 6  | 0.1341   | HAS   |
| 4.764 | 18 | 0.1949   | Total |

**ANOVA table**

| Source    | SS     | df | MS      | F     | p-value |
|-----------|--------|----|---------|-------|---------|
| Treatment | 0.4024 | 2  | 0.20121 | 12.40 | .0007   |
| Error     | 0.2435 | 15 | 0.01623 |       |         |
| Total     | 0.6459 | 17 |         |       |         |

**POST HOC analysis**

**p-values for pairwise t-tests**

|     |       | HAS   | RI    | CI    |
|-----|-------|-------|-------|-------|
|     |       | 4.578 | 4.770 | 4.944 |
| HAS | 4.578 |       |       |       |
| RI  | 4.770 | .0199 |       |       |
| CI  | 4.944 | .0002 | .0315 |       |

**Tukey simultaneous comparison t-values (d.f. = 15)**

|     |       | HAS   | RI    | CI    |
|-----|-------|-------|-------|-------|
|     |       | 4.578 | 4.770 | 4.944 |
| HAS | 4.578 |       |       |       |
| RI  | 4.770 | 2.61  |       |       |
| CI  | 4.944 | 4.98  | 2.37  |       |

**critical values for experimentwise error rate:**

|      |      |
|------|------|
| 0.05 | 2.60 |
| 0.01 | 3.42 |

**Indicator: Leadership, Management, and Entrepreneurship**

**One factor ANOVA**

| Mean  | n  | Std. Dev |       |
|-------|----|----------|-------|
| 4.647 | 6  | 0.1108   | RI    |
| 4.502 | 6  | 0.4091   | CI    |
| 4.145 | 6  | 0.1932   | HAS   |
| 4.431 | 18 | 0.3329   | Total |

**ANOVA table**

| Source    | SS     | df | MS      | F    | p-value |
|-----------|--------|----|---------|------|---------|
| Treatment | 0.7998 | 2  | 0.39991 | 5.53 | .0159   |
| Error     | 1.0846 | 15 | 0.07230 |      |         |
| Total     | 1.8844 | 17 |         |      |         |

**Indicator: Patient Care**

**One factor ANOVA**

| Mean  | n  | Std. Dev |       |
|-------|----|----------|-------|
| 4.823 | 6  | 0.0565   | RI    |
| 5.000 | 6  | 0.0000   | CI    |
| 4.627 | 6  | 0.1069   | HAS   |
| 4.817 | 18 | 0.1701   | Total |

**ANOVA table**

| Source    | SS     | df | MS      | F     | p-value  |
|-----------|--------|----|---------|-------|----------|
| Treatment | 0.4185 | 2  | 0.20927 | 42.96 | 6.18E-07 |
| Error     | 0.0731 | 15 | 0.00487 |       |          |
| Total     | 0.4916 | 17 |         |       |          |

**POST HOC analysis**

**p-values for pairwise t-tests**

|     |       | HAS      | RI    | CI    |
|-----|-------|----------|-------|-------|
|     |       | 4.627    | 4.823 | 5.000 |
| HAS | 4.627 |          |       |       |
| RI  | 4.823 | .0002    |       |       |
| CI  | 5.000 | 1.35E-07 | .0005 |       |

**Tukey simultaneous comparison t-values (d.f. = 15)**

|     |       | HAS   | RI    | CI    |
|-----|-------|-------|-------|-------|
|     |       | 4.627 | 4.823 | 5.000 |
| HAS | 4.627 |       |       |       |
| RI  | 4.823 | 4.88  |       |       |
| CI  | 5.000 | 9.26  | 4.38  |       |

**critical values for experimentwise error rate:**

|      |      |
|------|------|
| 0.05 | 2.60 |
| 0.01 | 3.42 |

**Indicator: Academic and Research Activities**

**One factor ANOVA**

| Mean  | n | Std. Dev |       |
|-------|---|----------|-------|
| 4.570 | 3 | 0.0854   | RI    |
| 4.890 | 3 | 0.1905   | CI    |
| 4.100 | 3 | 0.4335   | HAS   |
| 4.520 | 9 | 0.4199   | Total |

**ANOVA table**

| Source    | SS     | df | MS      | F    | p-value |
|-----------|--------|----|---------|------|---------|
| Treatment | 0.9474 | 2  | 0.47370 | 6.14 | .0354   |
| Error     | 0.4630 | 6  | 0.07717 |      |         |
| Total     | 1.4104 | 8  |         |      |         |

**Indicator: Leadership, Management, and Entrepreneurship**

**POST HOC analysis**

p-values for pairwise t-tests

|           | HAS   | CI    | RI    |
|-----------|-------|-------|-------|
|           | 4.145 | 4.502 | 4.647 |
| HAS 4.145 |       |       |       |
| CI 4.502  | .0364 |       |       |
| RI 4.647  | .0056 | .3651 |       |

**Tukey simultaneous comparison t-values (d.f. = 15)**

|           | HAS   | CI    | RI    |
|-----------|-------|-------|-------|
|           | 4.145 | 4.502 | 4.647 |
| HAS 4.145 |       |       |       |
| CI 4.502  | 2.30  |       |       |
| RI 4.647  | 3.23  | 0.93  |       |

critical values for experimentwise error rate:

|      |      |
|------|------|
| 0.05 | 2.60 |
| 0.01 | 3.42 |

**Indicator: Academic and Research Activities**

**POST HOC analysis**

p-values for pairwise t-tests

|           | HAS   | RI    | CI    |
|-----------|-------|-------|-------|
|           | 4.100 | 4.570 | 4.890 |
| HAS 4.100 |       |       |       |
| RI 4.570  | .0836 |       |       |
| CI 4.890  | .0131 | .2080 |       |

**Tukey simultaneous comparison t-values (d.f. = 6)**

|           | HAS   | RI    | CI    |
|-----------|-------|-------|-------|
|           | 4.100 | 4.570 | 4.890 |
| HAS 4.100 |       |       |       |
| RI 4.570  | 2.07  |       |       |
| CI 4.890  | 3.48  | 1.41  |       |

critical values for experimentwise error rate:

|      |      |
|------|------|
| 0.05 | 3.07 |
| 0.01 | 4.48 |

**Indicator: Continuous Life-long learning**

**One factor ANOVA**

| Mean  | n  | Std. Dev |       |
|-------|----|----------|-------|
| 4.508 | 5  | 0.0743   | RI    |
| 4.733 | 5  | 0.1491   | CI    |
| 4.207 | 5  | 0.1751   | HAS   |
| 4.483 | 15 | 0.2579   | Total |

**ANOVA table**

| Source    | SS     | df | MS      | F     | p-value |
|-----------|--------|----|---------|-------|---------|
| Treatment | 0.6977 | 2  | 0.34886 | 17.93 | .0002   |
| Error     | 0.2335 | 12 | 0.01946 |       |         |
| Total     | 0.9312 | 14 |         |       |         |

**Post hoc analysis**

p-values for pairwise t-tests

|           | HAS   | RI    | CI    |
|-----------|-------|-------|-------|
|           | 4.207 | 4.508 | 4.733 |
| HAS 4.207 |       |       |       |
| RI 4.508  | .0051 |       |       |
| CI 4.733  | .0001 | .0253 |       |

**Tukey simultaneous comparison t-values (d.f. = 12)**

|           | HAS   | RI    | CI    |
|-----------|-------|-------|-------|
|           | 4.207 | 4.508 | 4.733 |
| HAS 4.207 |       |       |       |
| RI 4.508  | 3.41  |       |       |
| CI 4.733  | 5.97  | 2.55  |       |

critical values for experimentwise error rate:

|      |      |
|------|------|
| 0.05 | 2.67 |
| 0.01 | 3.56 |

**Indicator: Nationalism**

**One factor ANOVA**

| Mean  | n | Std. Dev |       |
|-------|---|----------|-------|
| 4.860 | 3 | 0.0557   | RI    |
| 5.000 | 3 | 0.0000   | CI    |
| 4.700 | 3 | 0.1868   | HAS   |
| 4.853 | 9 | 0.1625   | Total |

**ANOVA table**

| Source    | SS     | df | MS      | F    | p-value |
|-----------|--------|----|---------|------|---------|
| Treatment | 0.1352 | 2  | 0.06760 | 5.34 | .0466   |
| Error     | 0.0760 | 6  | 0.01267 |      |         |
| Total     | 0.2112 | 8  |         |      |         |

**POST HOC analysis**

p-values for pairwise t-tests

|           | HAS   | RI    | CI    |
|-----------|-------|-------|-------|
|           | 4.700 | 4.860 | 5.000 |
| HAS 4.700 |       |       |       |
| RI 4.860  | .1323 |       |       |
| CI 5.000  | .0171 | .1785 |       |

**Tukey simultaneous comparison t-values (d.f. = 6)**

|           | HAS   | RI    | CI    |
|-----------|-------|-------|-------|
|           | 4.700 | 4.860 | 5.000 |
| HAS 4.700 |       |       |       |
| RI 4.860  | 1.74  |       |       |
| CI 5.000  | 3.26  | 1.52  |       |

critical values for experimentwise error rate:

|      |      |
|------|------|
| 0.05 | 3.07 |
| 0.01 | 4.48 |

## APPENDIX Q

## Application For Review



LC-REC Form #010  
APPLICATION FOR REVIEW FORM

## APPLICATION FOR REVIEW

(Adapted from National Ethics Guidelines for Health and Health-Related Research 2017)

INSTRUCTION: Please accomplish the form and ensure that all necessary documents are included in your submission.

**I. GENERAL INFORMATION:**

Title of the Study: PERFORMANCE EVALUATION TOOL FOR RADIOLOGIC TECHNOLOGY INTERNS OF LORMA COLLEGES

REC Code : \_\_\_\_\_ No. of Study Participants: 56

Study Site : LORMA Colleges

Name of Researcher/s: Carl Cheevey A. Ablin, Trina Amor A. Colisao, Ashley Marie L. Daigdigan, Ethan Drahcir B. Equilla, Herley Keith A. Esperon, Frances Gisella R. Lunor, Daphne Cate G. Navarro

Contact Information: Telephone Number: \_\_\_\_\_ Mobile Number: 09777473258  
Fax Number: \_\_\_\_\_ Email : daphnecate.navarro@lorma.edu

Name of Institution: LORMA Colleges

Institution's Address: Carlatan, City Of San Fernando, La Union

Type of Study:  Sponsored Clinical Trial  Biomedical Research  
 Researcher-Initiated Clinical Trials  Stem Cell Research  
 Health Operations Research  Genetic Research  
 Social or Behavioral Research  Others: \_\_\_\_\_  
 Public Health or Epidemiologic

Source of Funding :  Self-Funded  Scholarship/Research Grant  
 Government-Funded  Institution-Funded  
 Sponsored by Pharmaceutical Company  
 Others: \_\_\_\_\_

Duration of the Study: Start Date: September 8, 2024 End Date: \_\_\_\_\_

Has the Research Undergone Technical Review?  Yes  No

(Please attach Technical Review Result)

Has the Research been Submitted to Another Research Ethics Committee?  Yes  No

**II. BRIEF DESCRIPTION OF THE STUDY** (Use Extra Sheet if Necessary)

Ensuring radiologic technology interns develop strong clinical competencies is vital for success in real-world healthcare settings. This study aims to evaluate the performance of Radiologic Technology interns at Lorma Colleges using a performance evaluation tool, highlighting their strengths and areas for growth in key competencies such as scientific knowledge, ethical practice, radiation safety and protection, patient care, leadership, management and entrepreneurship, research activities, lifelong learning, and nationalism. Using a descriptive-comparative approach, assessments from interns, clinical instructors, and hospital of affiliation staff will be analyzed to gain valuable insights into their clinical performance. Data will be collected through structured survey questionnaires and examined using descriptive statistics, ANOVA, and frequency distribution methods. The findings will support the enhancement of the current performance evaluation tool, ensuring a more effective and supportive assessment process that fosters the growth of skilled, confident, and competent radiologic technologists.

**III. CHECKLIST OF DOCUMENTS FOR SUBMISSION**

a. Basic Requirements

- |   |  |
|---|--|
| <input checked="" type="checkbox"/> Letter of Intent to Conduct a Study   | <input type="checkbox"/> Full Proposal/Study Protocol              |
| <input checked="" type="checkbox"/> Filled-up Application Form for Review | <input checked="" type="checkbox"/> Budget                         |
| <input checked="" type="checkbox"/> Endorsement of the RTP                | <input type="checkbox"/> Funding Institution                       |
| <input checked="" type="checkbox"/> Timetable                             | <input checked="" type="checkbox"/> Curriculum Vitae of Researcher |

b. Supplementary Documents (if applicable)

- |   |  |
|---|--|
| <input checked="" type="checkbox"/> Questionnaire | <input type="checkbox"/> Philippine FDA Marketing Authorization or |
| <input type="checkbox"/> Data Collection Forms    | Import Licensure   |
| <input type="checkbox"/> Product Brochure         | <input type="checkbox"/> Permit/s for Special Population           |
| <input type="checkbox"/> Others: _____            |  |

Accomplished by:

Date Submitted: March 10, 2024

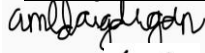


**Carl Cheevey A. Ablin**

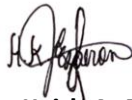


**Trina Amor A. Colisao**

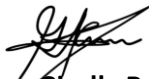
**Ashley Marie L. Daigdigan**



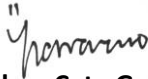
**Ethan Drahcir B. Equilla**



**Herley Keith A. Esperon**



**Frances Gisella R. Lunor**



**Daphne Cate G. Navarro**

(Signature over Printed Name)

-----  
(to be filled-out by the Secretariat)

Completeness of Documents:     Complete                       Incomplete

Remarks:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Date Received: \_\_\_\_\_ Received by: \_\_\_\_\_

**APPENDIX R**

## Informed Consent



**LC-REC Form #011**  
INFORMED CONSENT FORM

### INFORMED CONSENT FORM

INSTRUCTION: Please accomplish the form and ensure that all necessary documents are included in your submission.

#### GENERAL INFORMATION:

Title of the Study: PERFORMANCE EVALUATION TOOL FOR RADIOLOGIC TECHNOLOGY INTERNS OF LORMA COLLEGES

REC Code : \_\_\_\_\_ No. of Study Participants: 56

Study Site : LORMA Colleges

Name of Researcher/s: Carl Cheevey A. Ablin, Trina Amor A. Colisao, Ashley Marie L. Daigdigan, Ethan Drahcir B. Equilla, Herley Keith A. Esperon, Frances Gisella R. Lunor, Daphne Cate G. Navarro

Contact Information : Telephone Number: \_\_\_\_\_ Mobile Number: 09777473258

Fax Number: \_\_\_\_\_ Email :

daphnecate.navarro@lorma.edu

Name of Institution: LORMA Colleges

Institution's Address : Carlatan, City Of San Fernando, La Union

Type of Study:  Sponsored Clinical Trial  Biomedical Research  
 Researcher-Initiated Clinical Trials  Stem Cell Research  
 Health Operations Research  Genetic Research  
 Social or Behavioral Research  Others: \_\_\_\_\_  
 Public Health or Epidemiologic

Source of Funding :  Self-Funded  Scholarship/Research Grant  
 Government-Funded  Institution-Funded  
 Sponsored by Pharmaceutical Company  
 Others: \_\_\_\_\_

Duration of the Study: Start Date: September 8, 2024 End Date: \_\_\_\_\_

**INTRODUCTION** (Use Extra Sheet if Necessary)

Greetings! We, the students at the College of Radiologic Technology. are currently conducting a study entitled "Performance Evaluation Tool For Radiologic Technology Interns of Lorma Colleges." We are inviting you to become our participant in this research study. Before participating in this research study, kindly read the informed consent form thoroughly, and please feel free to talk or ask the researchers about the research study. Should there be any words in this consent form you do not understand, please ask the researchers anytime. Moreover, we will explain them to the best of our abilities.

**PURPOSE OF RESEARCH** (Use Extra Sheet if Necessary)

This study aims to evaluate the performance of Radiologic Technology interns at Lorma Colleges using a performance evaluation tool, highlighting their strengths and areas for growth in key competencies such as scientific knowledge, ethical practice, radiation safety and protection, patient care, leadership, management and entrepreneurship, research activities, lifelong learning, and nationalism. This study also provides recommendations for enhancement in the performance evaluation tool of the College of Radiologic Technology of Lorma Colleges. This study will help the institution and hospital affiliation, specifically the College of Radiologic Technology of Lorma Colleges, to evaluate the performance of Radiologic Technology interns at Lorma Colleges using a performance evaluation tool.

**TYPE OF RESEARCH INTERVENTION** (Use Extra Sheet if Necessary)

**1. Participant Selection**

Ma'am/ Sir, you are invited to participate in this research since you are an intern, a clinical instructor, or a hospital of affiliation staff from the College of Radiologic Technology of Lorma Colleges in the academic year 2024-2025. We came up with this study since we want to evaluate the performance of the radiologic technology interns using a performance evaluation tool and help the institution and the hospital affiliation to know what to enhance on the performance evaluation tool of the College of Radiologic Technology of Lorma Colleges.

**2. Voluntary Participation**

Ma'am/Sir, your participation in this research study is entirely voluntary. It is ultimately up to you whether or not to participate. If you choose not to participate, your decision will be respected. You are also free to withdraw and stop participating, even if you agreed earlier.

**3. Procedures**

Ma'am/Sir, we kindly request your assistance in evaluating the performance of Radiologic Technology interns at Lorma Colleges using a performance evaluation tool. Your sincere responses to the questionnaire will contribute valuable insights to our study. This survey is anticipated to take around 10-15 minutes of your time. You are welcome to seek clarification or ask any questions about the study from the researchers. Before completing the questionnaire, may we kindly ask you to please sign the certificate of consent, indicating your voluntary participation in this research. Rest assured that any data provided will be treated with the highest confidentiality.

#### **4. Risks**

Ma'am/Sir, As researchers, we recognize potential risks, including confidentiality concerns, response bias, and data inconsistencies. Performance evaluations could impact professional relationships, and participants may provide socially desirable responses. Differences in evaluation criteria and institutional factors, such as hospital protocol variations and training resources, may affect results. Interns may also experience stress during assessments, influencing their performance and responses. Additionally, challenges in data collection, such as low participation or incomplete responses, could impact data accuracy. To mitigate these risks, we will ensure confidentiality, apply strict ethical guidelines, and use meticulous data analysis to enhance reliability and validity.

#### **5. Benefits**

This research contributes to improving or enhancing the Radiologic Technology department at LORMA Colleges. It aims to optimize the performance evaluation tool for future students, ensuring a more effective and efficient educational evaluation and experience. Additionally, it serves as a reference point not only for the Radiologic Technology department but also for other performance evaluations within LORMA Colleges. This study can be utilized as a baseline for enhancing various performance evaluation and performance evaluation tools, particularly those in the medical field, providing valuable insights for continuous program development across the institution.

#### **6. Reimbursements**

Ma'am/Sir, despite your decision to participate in our research or not, please be informed that you will not be given any incentives or free resources to take part.

## **7. Confidentiality**

Ma'am/Sir, we assure you that any information you provide in this research study will be kept private and confidential. It will not be transferred to others and will only remain with the researchers. You also have the option of whether you want to provide our name or not. Nevertheless, if you enter your name, it will be archived by the researchers and changed into a codename such as R1, or R2 ... to secure your identity.

## **8. Sharing of Results**

Ma'am/Sir, nothing collected from you will be shared with anybody outside the research team, and nothing will be attributed to you by name. The researchers will also publish this study so that other researchers can evaluate the research and serve as a basis if they want to conduct another study related to the performance evaluation tool for radiologic technology interns of Lorma Colleges and for further improvements if they want to perform a similar analysis. If you wish to have a copy of the study upon completion, do not hesitate to contact the researchers using the contact number or email provided in this consent form.

## **9. Right to Refuse or Withdrawal**

Ma'am/Sir, you have the right to decide whether to participate in this research. The researchers will not force or coerce you to participate in this study. You may also stop participating at any time you wish, even though you agreed to participate in this study earlier.

## **10. Who to Contact**

Ma'am/Sir, the person you can contact in case of immediate response is Daphne Cate G. Navarro. You can reach her at [daphnecate.navarro@lorma.edu](mailto:daphnecate.navarro@lorma.edu), or you can contact her at her phone number, 09777473258.

***CERTIFICATE OF CONSENT:***

I have read the information stated herein, which was adequately explained to me. I was provided with a chance to ask questions relative to it. All questions I asked were correctly answered; therefore, I consented and voluntarily participated in this study.

Name of Participant: \_\_\_\_\_

Signature of Participant: \_\_\_\_\_

Date: \_\_\_\_\_

**Statement from the Researcher/Person Obtaining the Consent**

All information pertaining to this study was explained to the possible participant and made sure that he/she fully understood what she/he had to do in the research.

Similarly, I affirm that the potential participant was given a chance to ask questions, which I have answered accurately to the best of my ability.

Likewise, I affirm that the participant was not coerced or forced into giving consent. That he/she has voluntarily provided the consent.

Accomplished by: \_\_\_\_\_ Date Submitted: \_\_\_\_\_  
(Signature over Printed Name)

**APPENDIX S**



## SUBMISSION CHECKLIST

Name of Researcher/s: Carl Cheevey A. Ablin, Trina Amor A. Colisao, Ashley Marie L. Daigdigan, Ethan Drahcir B. Equilla, Herley Keith A. Esperon, Frances Gisella R. Lunor, Daphne Cate G. Navarro

Title of Study: PERFORMANCE EVALUATION TOOL FOR RADIOLOGIC TECHNOLOGY INTERNS OF LORMA COLLEGES

Name of Sponsor: \_\_\_\_\_

Date of Submission : March 10, 2025

Contact No.: 09777473258

| Documents   | Complete | Incomplete | Remarks |
|---|----------|------------|---------|
| 1. Letter of intent to conduct the study                                      | _____    | _____      | _____   |
| 2. Filled-up Application for Review Form                                      | _____    | _____      | _____   |
| 3. Endorsement of the Research Technical Panel (attach the Compliance Report) | _____    | _____      | _____   |
| 4. Title, Statement of the Problem/Objective                                  | _____    | _____      | _____   |
| 5. Significance of the Study  | _____    | _____      | _____   |
| 6. Literature Review  | _____    | _____      | _____   |
| 7. Methods and Procedures   | _____    | _____      | _____   |
| 8. Population and Locale  | _____    | _____      | _____   |
| 9. Exclusion/Inclusion Criteria   | _____    | _____      | _____   |
| 10. Data Analysis   | _____    | _____      | _____   |
| 11. Questionnaire   | _____    | _____      | _____   |
| 12. Funding Institution   | _____    | _____      | _____   |
| 13. Timetable   | _____    | _____      | _____   |
| 14. Ethical Considerations  | _____    | _____      | _____   |
| 15. Curriculum Vitae of the Researcher/s                                      | _____    | _____      | _____   |

by: \_\_\_\_\_  
Signature Over Printed Name

Date: \_\_\_\_\_

**Appendix T**

### Budgetary Requirements

| ITEM                      | DETAILS                                    | ESTIMATED COST (Php) |
|---------------------------|--|----------------------|
| Manuscript                | Bond paper, folders, binder clip,<br>ink   | 2,000                |
| Transportation            | Buying and printing necessary<br>materials | 300                  |
| Research Proposal         | Fee  | 3,785                |
| Statistician              | Fee  | 2,000                |
| Final Defense             | Fee  | 6,140                |
| Research Ethics Committee | Review Fee                                 | 1,000                |
| <b>TOTAL:</b>             |  | <b>15,225</b>        |

### Timetable

| 2024                                      |            |            |      |     |     |     |
|---|------------|------------|------|-----|-----|-----|
| ACTIVITY                                  | Start Date | End Date   | Sept | Oct | Nov | Dec |
| Topic/Title was discussed and selected    | 09/08/2024 | 09/08/2024 |      |     |     |     |
| Letter to the Adviser was given           | 09/14/2024 | 09/14/2024 |      |     |     |     |
| Consultation with Research Adviser        | 09/15/2024 | 09/16/2024 |      |     |     |     |
| Finalize Tentative Topic/ Title           | 09/17/2024 | 09/19/2024 |      |     |     |     |
| Statement of the Problem                  | 09/20/2024 | 09/24/2024 |      |     |     |     |
| Chapter 1 Introduction                    | 09/26/2024 | 10/01/2024 |      |     |     |     |
| Chapter 1 Framework and Paradigm          | 10/03/2024 | 10/08/2024 |      |     |     |     |
| Accomplishment of Chapter 1               | 10/09/2024 | 10/11/2024 |      |     |     |     |
| Chapter 2 Method and Design               | 10/14/2024 | 10/16/2024 |      |     |     |     |
| Chapter 2 Population and Locale           | 10/17/2024 | 10/19/2024 |      |     |     |     |
| Chapter 2 Scope and Limitation            | 10/20/2024 | 10/23/2024 |      |     |     |     |
| Chapter 2 Data Gathering Tool & Procedure | 10/26/2024 | 11/01/2024 |      |     |     |     |
| Chapter 2 Treatment of Data               | 11/03/2024 | 11/07/2024 |      |     |     |     |
| Formulation of Questionnaires             | 11/08/2024 | 11/12/2024 |      |     |     |     |
| Revision of Manuscript                    | 11/17/2024 | 11/24/2024 |      |     |     |     |
| Research Class Presentation Preparation   | 11/27/2024 | 12/01/2024 |      |     |     |     |
| Classroom Mock Research Proposal          | 12/02/2024 | 12/02/2024 |      |     |     |     |
| Research Proposal Preparation             | 12/03/2024 | 12/15/2024 |      |     |     |     |
| Research Proposal                         | 12/16/2024 | 12/16/2024 |      |     |     |     |
| Revision of Manuscript                    | 12/17/2024 | 01/02/2025 |      |     |     |     |

| 2025                                  |            |            |     |     |     |     |     |     |
|---------------------------------------|------------|------------|-----|-----|-----|-----|-----|-----|
| ACTIVITY                              | Start Date | End Date   | Jan | Feb | Mar | Apr | May | Jun |
| Submission of Revised Manuscript      | 01/15/2025 | 01/15/2025 |     |     |     |     |     |     |
| Consultation with Research Instructor | 01/16/2025 | 01/16/2025 |     |     |     |     |     |     |
| Submission of Progress Report         | 02/13/2025 | 02/13/2025 |     |     |     |     |     |     |
| Panel Consultation                    | 02/20/2025 | 02/24/2025 |     |     |     |     |     |     |
| Revision of Manuscript                | 02/25/2025 | 03/05/2025 |     |     |     |     |     |     |
| Submission of Revised Manuscript      | 03/06/2025 | 03/06/2025 |     |     |     |     |     |     |
| Research Consultation                 | 03/07/2025 | 03/07/2025 |     |     |     |     |     |     |
| Revision of Manuscript                | 03/08/2025 | 03/08/2025 |     |     |     |     |     |     |
| Submission of Final Chapters 1&2      | 03/09/2025 | 03/09/2025 |     |     |     |     |     |     |
| Submission to REC                     | 03/09/2025 | 03/09/2025 |     |     |     |     |     |     |
| Feedback of REC                       | 04/08/2025 | 04/08/2025 |     |     |     |     |     |     |
| Distribution of Letters               | 04/09/2025 | 04/27/2025 |     |     |     |     |     |     |
| Validation of Questionnaire           | 04/30/2025 | 05/02/2025 |     |     |     |     |     |     |
| Data Gathering                        | 05/04/2025 | 05/11/2025 |     |     |     |     |     |     |
| Presentation of Data Status           | 05/12/2025 | 05/12/2025 |     |     |     |     |     |     |
| Data Analysis                         | 05/13/2025 | 05/14/2025 |     |     |     |     |     |     |
| Submission of Final Manuscript        | 05/14/2025 | 05/14/2025 |     |     |     |     |     |     |
| Final Defense                         | 05/15/2025 | 05/15/2025 |     |     |     |     |     |     |
| Revision of Manuscript                | 05/15/2025 | 05/25/2025 |     |     |     |     |     |     |
| Submission of Revised Manuscript      | 05/26/2025 | 05/26/2025 |     |     |     |     |     |     |

## APPENDIX V



## CURRICULUM VITAE



**CARL CHEEVEY A. ALBIN**

### I. PERSONAL INFORMATION

Address : Sitio Carcarabasa, Brgy. Bucao, San Gabriel, La Union  
 Contact Number : 09957693462  
 Email Address : cheeveyablin08@gmail.com  
 Date of Birth : December 30, 2002  
 Place of Birth : Tagum, Davao City

### II. EDUCATIONAL BACKGROUND

**Tertiary**      **2022 - Present**  
 Bachelor of Science in Radiologic Technology  
 Lorma Colleges  
 Carlatan, City of San Fernando, La Union, Philippines

**Secondary**    **2020 - 2022**  
 Science, Technology, Engineering and Mathematics  
 Senior High School  
 Saint Louis College  
 Lingsat, City of San Fernando, La Union, Philippines

**2016-2020**  
 Saint Gabriel the Archangel Inc.  
 San Gabriel La Union

**Primary**      **2013- 2016**  
Lorma Colleges, San Juan Campus  
Urbiztondo, City of San Fernando, La Union, Philippines

### III. AWARDS/CITATIONS/RECOGNITIONS RECEIVED

**A.Y. 2019-2020**      Most Active  
**Singing Contest**      The Vocal Child Award

### IV. WORK EXPERIENCE:

- Business Management in ACC Printing Services and Trading Supplies Business
- DJ Operator of ACC Sound System (A Sound System Management)
- Freelance Part-Time Video Editor
- Account Boosting Services (gaming, crypto)

**V. ELIGIBILITY:**      N/A

**VI. SEMINARS ATTENDED:**      N/A

**VII. INVOLVEMENT IN RESEARCH/RESEARCH CONDUCTED:**      N/A





**TRINA AMOR A. COLISAO**

### **I. PERSONAL INFORMATION**

Address : #34 Romeo De Guzman St. Central East, Bauang, La Union, Philippines  
 Contact Number : 09454053366  
 Email Address : trinaamorcolisao@gmail.com  
 Date of Birth : December 24, 2003  
 Place of Birth : Agoo, La Union

### **II. EDUCATIONAL BACKGROUND**

**Tertiary 2022-Present**  
 Bachelor of Science in Radiologic Technology  
 Lorma Colleges  
 Carlatan, City of San Fernando, La Union

**Secondary 2020-2022**  
 Humanities and Social Sciences  
 Senior High School  
 Saint Louis College  
 Lingsat, City of San Fernando, La Union

**2016 -2020**  
 Junior High School  
 Saint Louis College  
 Lingsat, City of San Fernando, La Union

**Primary 2010-2016**  
 Elementary  
 Union Christian College  
 Barangay II, San Fernando City, La Union

### III. AWARDS/CITATIONS/RECOGNITIONS RECEIVED

|                                    |                                       |
|------------------------------------|---------------------------------------|
| S.Y 2012-2016                      | Red Cross Youth Certified First Aider |
| S.Y. 2015-2016 (Elementary)        | With Honors                           |
| S.Y 2014 (Elementary)              | Batang Genyo                          |
| DSPC 2015                          | Filipino Feature Writer               |
| S.Y 2017-2018 (Junior High School) | With Honors                           |

IV. WORK EXPERIENCE: N/A

V. ELIGIBILITY: N/A

### VI. SEMINARS ATTENDED:

Red Cross First Aid Seminar  
First Aid Training (ITRMC)

### VII. INVOLVEMENT IN RESEARCH/RESEARCH CONDUCTED:

#### Qualitative Research (2021)

Bakit Kami Matatakot?: The Impact of Red-tagging of Social Media Users' Freedom of Expression

#### Quantitative Research (2022)

Citizen's Satisfaction on COVID-19 Response on a Barangay Level



**ASHLEY MARIE L. DAIGDIGAN**

## I. PERSONAL INFORMATION

Address : Aguinaldo Street, Poblacion Aringay, La Union  
Contact Number : 09468375027  
Email Address : ashleydaigdigan03@gmail.com  
Date of Birth : November 20, 2003  
Place of Birth : City of San Fernando, La Union

## II. EDUCATIONAL BACKGROUND

**Tertiary**      **2022 - Present**  
Bachelor of Science in Radiologic Technology  
Lorma Colleges  
Carlatan, City of San Fernando, La Union, Philippines

**Secondary**    **2020 - 2022**  
Humanities and Social Sciences  
Senior High School  
Aringay National High School  
Aringay, La Union, Philippines

**2016 - 2020**  
Junior High School  
Notre Dame Institute  
Poblacion, Aringay La Union





LC-REC Form #003  
CV TEMPLATE



**ETHAN DRAHCIR B. EQUILLA**

### I. PERSONAL INFORMATION

Address : Palintucang, Bauang La Union  
 Contact Number : 09692900511  
 Email Address : ethandrahcir.equilla@lorma.edu  
 Date of Birth : September 15, 2003  
 Place of Birth : Agoo, La Union, Philippines

### II. EDUCATIONAL BACKGROUND

**Tertiary**      **2022 - Present**  
 Bachelor of Science in Radiologic Technology  
 Lorma Colleges  
 Carlatan, City of San Fernando, La Union, Philippines

**Secondary**    **2020 - 2022**  
 Humanities and Social Sciences  
 Senior High School  
 Don Mariano Marcos Memorial State University  
 City of San Fernando, La Union

**2016 - 2020**  
 Junior High School  
 Christ the King College  
 City of San Fernando, La Union

**Primary**      **2010 - 2016**  
Saint Anthony Montessori  
Bauang, La Union

**III. AWARDS/CITATIONS/RECOGNITIONS RECEIVED:**      N/A

**IV. WORK EXPERIENCE:**      N/A

**V. ELIGIBILITY:**      N/A

**VI. SEMINARS ATTENDED:**      N/A

**VII. INVOLVEMENT IN RESEARCH/RESEARCH CONDUCTED:**      N/A



LC-REC Form #003  
CV TEMPLATE



**HERLEY KEITH A. ESPERON**

### I. PERSONAL INFORMATION

Address : #25, Purok 3, Mabanengbeng 2nd, Bacnotan, La Union  
 Contact Number : 09198423557  
 Email Address : herleykeith.esperon@lorma.edu  
 Date of Birth : March 7, 2004  
 Place of Birth : Lorma Medical Center, Carlatan, City of San Fernando, La Union

### II. EDUCATIONAL BACKGROUND

**Tertiary**      **2022 - Present**  
 Bachelor of Science in Radiologic Technology  
 Lorma Colleges  
 Carlatan, City of San Fernando, La Union, Philippines

**Secondary**    **2020-2022**  
 Science, Technology, Engineering and Mathematics  
 Senior High School  
 Bacnotan National High School  
 Dacanay St., Poblacion, Bacnotan, La Union

**2016-2020**  
 Junior High School  
 Stella Maris Academy  
 Quirino, Bacnotan, La Union

**Primary**      **2010 - 2016**  
 Elementary  
 Mabanengbeng Elementary School  
 Mabanengbeng 2nd, Bacnotan, La Union

### III. AWARDS/CITATIONS/RECOGNITIONS RECEIVED

|                                    |               |
|------------------------------------|---------------|
| <b>1st Semester A.Y. 2022-2023</b> | Dean's Lister |
| <b>2nd Semester A.Y. 2022-2023</b> | Dean's Lister |
| <b>S.Y. 2021-2022</b>              | With Honors   |
| <b>S.Y. 2020-2021</b>              | With Honors   |

**IV. WORK EXPERIENCE:**                      N/A

**V. ELIGIBILITY:**                                N/A

**VI. SEMINARS ATTENDED:**                N/A

**VII. INVOLVEMENT IN RESEARCH/RESEARCH CONDUCTED:**      N/A



LC-REC Form #003  
CV TEMPLATE



**FRANCES GISELLA R. LUNOR**

### I. PERSONAL INFORMATION

Address : #44 Sta. Cruz, Bacnotan, La Union 2515  
 Contact Number : 09054383618  
 Email Address : francesgisella.lunor@lorma.edu  
 Date of Birth : April 5, 2004  
 Place of Birth : Baguio City, Benguet, Philippines

### II. EDUCATIONAL BACKGROUND

**Tertiary 2022 - Present**  
 Bachelor of Science in Radiologic Technology  
 Lorma Colleges  
 Carlatan, City of San Fernando, La Union, Philippines

**Secondary 2020 - 2022**  
 Science, Technology, Engineering and Mathematics  
 Senior High School  
 Saint Louis College  
 Lingsat, City of San Fernando, La Union, Philippines

**2019 - 2020**  
 Junior High School  
 Saint Louis College  
 Lingsat, City of San Fernando, La Union, Philippines

**2016 - 2019**

Junior High School  
 St. Albert the Great School  
 Malued, Dagupan City, Pangasinan, Philippines

**Primary****2010 - 2016**

Elementary  
 Christ the King College  
 San Fernando City, La Union, Philippines

**III. AWARDS/CITATIONS/RECOGNITIONS RECEIVED**

|   |   |
|---|---|
| <b>A.Y. 2024-2025</b>                             | SBO President                               |
| <b>A.Y. 2023-2024</b>                             | SBO Treasurer                               |
| <b>1st Semester A.Y. 2023-2024</b>                | Dean's Lister                               |
| <b>2nd Semester A.Y. 2022-2023</b>                | Half Scholar                                |
| <b>1st Semester A.Y. 2022-2023</b>                | Half Scholar                                |
| <b>S.Y. 2016-2022 (Junior-Senior High School)</b> | With Honors                                 |
| <b>MYK 2018 (Dagupan City)</b>                    | Young City One Stop Shop Business Officer   |
| <b>S.Y. 2010-2016 (Elementary)</b>                | Outstanding Student                         |
| <b>DPSC 2016</b>                                  | Science and Technology Writing (8th Placer) |
| <b>DPSC 2015</b>                                  | Filipino News Writing (5th Placer)          |

**IV. WORK EXPERIENCE :** N/A

**V. ELIGIBILITY :** N/A

**VI. SEMINARS ATTENDED :** N/A

**VII. INVOLVEMENT IN RESEARCH/RESEARCH CONDUCTED****Qualitative Research (2021)**

Passion in Profession: Public School Teachers' Experiences in Distance Learning Amidst the Pandemic

**Quantitative Research (2022)**

Social Participation of Grade 12 Senior High School Students from Saint Louis College during the COVID-19 Pandemic



## CURRICULUM VITAE



**DAPHNE CATE G. NAVARRO**

### I. PERSONAL INFORMATION

Address : Paringao, Bauang, La Union  
 Contact Number : 09777473258  
 Email Address : daphnecate.navarro@lorma.edu  
 Date of Birth : March 25, 2005  
 Place of Birth : Lorma Medical Center, Carlatan, City of San Fernando, La Union

### II. EDUCATIONAL BACKGROUND

**Tertiary 2022 - Present**  
 Bachelor of Science in Radiologic Technology  
 Lorma Colleges  
 Carlatan, City of San Fernando, La Union, Philippines

**Secondary 2019 - 2021**  
 Senior High School  
 Lorma Colleges, San Juan Campus  
 Urbiztondo, City of San Fernando, La Union, Philippines

**2016 - 2020**  
 Junior High School  
 BHC Educational Institution, Inc.  
 Sevilla Center, San Fernando, La Union, Philippines

**Primary**            **2008 - 2016**  
 BHC Educational Institution, Inc.  
 Sevilla Center, San Fernando, La Union Philippines

|                                    |                      |
|------------------------------------|----------------------|
| <b>A.Y. 2024-2025</b>              | SBO Business Manager |
| <b>A.Y. 2023-2024</b>              | SBO Treasurer        |
| <b>2nd Semester A.Y. 2022-2023</b> | Dean's Lister        |

### III. AWARDS/ CITATIONS/ RECOGNITION RECEIVE

IV. WORK EXPERIENCE :                    N/A

V. ELIGIBILITY :                            N/A

VI. SEMINARS ATTENDED :                N/A

### VII. INVOLVEMENT IN RESEARCH/RESEARCH CONDUCTED

#### **Qualitative Research (2021)**

E: Learning How Math Teachers Teach in the New Normal

#### **Quantitative Research (2022)**

The Efficacy of Carbonized Coconut Husks as an Organic Fertilizer for Fiery Costus/Spiral Plant (Chamaecostus Cuspidatus)