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Mock Board Examination Result as Predictor of Radiologic Technology Licensure Examination Result: A Basis for Enhancement Program

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ABSTRACT:

This study investigated and analyzed the level of performance in a mock board examination and examined its predictive value on the Radiologic Technology (RT) Licensure Examination outcomes. A total of 205 mock board results were used as data to be studied and were paired with the licensure examination results for Radiologic Technology. Descriptive statistics were used to assess the overall performance, while logistic regression analysis was employed to determine whether mock board examination scores significantly predicted licensure exam results for Radiologic Technology. The study analyzes mock board examination results and their relationship with the Radiologic Technology Licensure Examination (RTLE) performance of 205 examinees. The maximum score was 81, and the minimum is 60. The average mock board grade was 68.99, classified as "Low," indicating variability in academic performance. 69.8% of examinees passed the RTLE, while only 30.2% failed. A significant correlation was found between mock board scores and board exam results, suggesting that lower scores were associated with higher chances of failure. Additionally, binary logistic regression confirmed that mock board grades significantly predicted board exam outcomes, increasing the likelihood of passing the RTLE by approximately 21.5%. These results suggest that mock board exams are a valuable tool for predicting student performance in the actual licensure exam and can be used effectively by the institution for academic intervention and exam preparation strategies.

Keywords: Radiologic Technology, Licensure Exam, Descriptive-predictive, Davao City

1. INTRODUCTION

Background of the Study

The Republic Act 7431, also known as the Radiologic Technology Act of 1992, stated that no person should use the title Radiologic Technologist or any other title conveying the impression that he is a Radiologic Technologist without having been issued a certificate of registration as a Radiologic Technologist by the Professional Regulation Commission. One of the most important steps in the practice field is passing a board exam to earn a professional license (Gallardo et al., 2025). Governmental or professional organizations often require this licensing exam to safeguard public safety and ensure practitioners adhere to established protocols (Chinn et al., 2025). Failure to pass could result in adverse outcomes, such as loneliness, sadness, financial hardship, and job loss (Talaroc et al., 2021). Low pass rates in the Philippine RT license exam suggest a discrepancy between education and test skills; out-of-date or less pertinent test material might adversely affect students focusing on newer technologies (Alipio et al., 2024).

All Radiologic Science students must complete the American Registry for Radiologic Technologists (ARRT) Radiography didactic and clinical competency requirements to be eligible to sit for the ARRT Radiography National Registry examination (Walker, 2023). Passing a credentialing exam, like the American Registry of Radiologic Technologists (ARRT) exam, is a sign of success in the health professions. Test failure can result in fewer job opportunities and potentially enter a cycle of multiple test attempts or retakes (Iorio et al., 2021). The mock examination provided students with a formative assessment before the main exam, enabling them to understand the scope and self-assess their preparedness (Ha et al., 2022).

Because of the low passing scores on the Philippine Radiologic Technology licensing exam, academic institutions, regulatory bodies, and other interested parties must act quickly and work together. A thorough investigation is required to determine the organizational factors causing these low passing rates (Alipio et al., 2024). Graduates cannot lawfully practice their profession if they fail the licensing exam. To ensure their competency, graduates of this course must take and pass the Radiologic Technologist Licensure Examination administered by the Professional Regulation Commission (Gallardo et al., 2025). To evaluate and assist the students in preparing for the licensing exam, higher educational institutions conduct mock board exams, which help the students get comfortable with the exam's question patterns and overall performance and should be given to students continually (Encio, 2022). These mimic the format and events of the actual licensure examination. The primary objective of the licensure examination is to obtain reliable and valid information on whether examinees acquire the technical capability required for the profession (Alipio, 2020).

This study aimed to determine if there is a significant relationship between students' results on mock board exams and the Radiologic Technology Licensure Exam. Although considerable research has been conducted on the mock board exam and licensure exam results, geographically**,** no available published research has been done in higher education institutions in the Davao Region. This study is important because it can provide information that will enable the creation of an enhancement program. This program might address shortcomings in the curriculum, instructional strategies, student assistance, or test-taking tactics for Radiologic Technology education

2. Review of Related Literature

Mock Board Examination

Al-Sheikh et al. (2022) stated that to pass the Saudi Medical Licensure Exam (SMLE) and be eligible to practice and/or enroll in postgraduate training, all medical graduates in Saudi Arabia can benefit from taking practice exams. Based on the findings, students' performance on the mock test improved gradually and showed a nonsignificant positive link with their actual SMLE outcome. This, in conjunction with getting acquainted with the format and environment of the examination, enabled them to do better on the actual SMLE exam. When Ha et al. (2022) conducted a study to evaluate the effects of administering a mock exam before the actual summative exam for a pharmaceutics course in Boston, Massachusetts, they discovered that performance on the mock exam was correlated with actual exam scores and that the average score increased year over year (in comparison to the year without mock exams). Moreover, a study by Harradon (2020) says that the mock board exam is the most frequently used tool to help students prepare for licensure exams.

As indicated in the study conducted by Dante et al. (2024) in Cavite, Philippines, achieving the desired licensure exam depends much on the mock board performance. Additionally, Bote et al. carried out a study in 2022, reviewing a pre-board examination rating and performance on the certified public accountant licensure examination, and sought to find the relationships among the variables. According to Cabaruan et al. (2022), mock board exams are crucial in assessing and training accounting students, as they help strengthen the skills required to pass the licensing exam and increase self-esteem.

Research conducted in Pagadian City, Zamboanga del Sur, Philippines, revealed that performance in a preparatory board examination indicates how they will score in the Licensure Examination for Certified Public Accountants (LECPA). Findings imply that scoring well in the mock examination increases the probability of successfully passing the LECPA. Based on these findings, educational institutions should continuously improve the mock board exams (Camacho et al., 2024). In addition, in Baguio City, a study conducted by Tad-awan (2022) stated that the mock board examination is an indicator of the graduates' level of knowledge. It clarifies the extent to which graduates performed and met expectations. A mock board exam is important to ascertain if students are prepared for the licensure examination.

Another study about the relationship between pre-board exams and LET performance by Fiscal et al. (2022) stated that the pre-board test is a valid predictor for performance in the licensure exam. The result stated that the college should focus on providing intensive programs, monitoring, and evaluation for the LET takers. Mangoma (2023) stated that Mock board exams are important for generating competent graduates preparing for the licensure for certified public accountants since they give the examinees a real testing environment, as well as the results, which may be of significant use in identifying their strengths and weaknesses, as well as enhancing their exam-taking skills. According to Dante et al. (2024), the mock board performance considered the students' preparation phase, should be carefully planned, executed, and supervised by educational institutions. The aforementioned connected research suggests a notable correlation between students' performance in mock exams and their performance in final exams across various fields of study.

Radiologic Technology Licensure Examination

The American Registry of Radiologic Technologists is responsible for registering and certifying Radiologic Technologists, a crucial profession in healthcare. Radiography uses diagnostic imaging for patient care, making understanding educational and certification criteria crucial for career choices, as job growth is expected. (Harradon, 2020). The ARRT Primary Eligibility Handbook of 2022 states that to become a Radiologic Technologist, students must pass the ARRT Radiography national registry examination, consisting of 220 multiple-choice questions covering patient care, safety, image production, and procedures. Regarding Radiologic Technology, research indicates that factors before and during enrollment in these programs influence the results of the credentialing exam for the American Registry of Radiologic Technologists (ARRT) in radiography (Iorio et al., 2021).

The Professional Regulation Commission (PRC) regulates several professions, including Radiologic Technology. Radiologic Technology is a highly specialized allied health profession that diagnoses and treats illnesses using radiation. To ensure accurate and legitimate information for the profession, the licensure exam evaluates technical proficiency, including knowledge application, judgment, and comprehension of professional responsibility (Alipio, 2020). Thus, passing the licensing exam is essential for RT graduates to perform and obtain a license as a registered Radiologic Technologist (Talaroc et al., 2021). A graduate must pass the licensure examination before being registered and practicing the profession (Gallardo et al., 2025).

The study aimed to analyze and answer the following:

1. What is the level of mock board exam results?
2. What is the frequency and percentage of Radiologic Technology Licensure Exam results?
    2.1. Passed
    2.2. Failed

3. Is there a significant relationship between Mock Board and Radiologic Technology Licensure Examination results?
4. Do mock board exam results significantly predict board exam results?
5. Based on the results, what enhancement program can be proposed to improve the Bachelor of Science in Radiologic Technology?

Hypotheses

$H0_{1:}$ There is no significant relationship between the mock board exam and Radiologic Technology Licensure Examination results.
$H0_{2:}$ The mock board exam does not significantly predict the board examination results.

Theoretical Framework

The study drew on Piaget and Vygotsky's Constructivist Learning Theory, Kolb's experiential learning theory, and Cognitive Load Theory. According to Cherry (2024), Piaget's development is influenced from within, even though Vygotsky's constructivism emphasizes the importance of individual, cultural-historical, and interpersonal factors in human development and can be applied to differentiated education. This can differentiate instruction regarding meaningful learning and student engagement (Wibowo et al., 2024). Kolb's experiential learning theory strongly emphasizes learning abstract ideas that are applicable in a variety of contexts and are fueled by novel experiences (McLeod, 2025). According to John Sweller's Cognitive Load Theory, our minds are information processing systems, and as we get more used to a task, working memory becomes more significant. It describes how people learn and retain information. (Howley-Rouse, 2024).

The combination of Cognitive Load Theory, Constructivist Learning Theory, and Experiential Learning Theory offers a strong theoretical foundation for investigating the significance of mock board exam results in predicting success on the licensing exam. These frameworks emphasize that regular practice, active engagement with the materials, reflection, and strategic modification increase learning efficiency and promote deeper conceptual comprehension and licensure outcomes. These theories highlight the importance of distinguishing the relationship between the mock board examination and licensure examination results. By analyzing the mock board results of the graduates and the external factors, such as the lecturers of the review center, these frameworks give a comprehensive view through which the findings of this study can be interpreted.

3. METHOD

3.1. Design

The researcher used a predictive quantitative research design. According to Labaree (2023), quantitative research focuses on obtaining numerical data to understand a particular occurrence or apply it to broader groups. Predictive research is all about harnessing data to anticipate future trends and events. Analyzing historical data helps forecast possible scenarios that can guide strategic decision-making (Cote, 2021). It involves using statistics and various modeling techniques to anticipate future outcomes by analyzing and plotting current and historical data patterns, and the chances of those patterns occurring again can be assessed (Halton, 2024). It was utilized to examine the mock board examination results as a predictor of the results of the actual board examination for Radiologic Technology.

This research design is suitable for this study because it anticipates future outcomes of the licensure examination results using the numerical data of the mock board exam results of graduates collected from the review center. This establishes a predictive relationship between the Mock Board and Radiologic Technology Licensure Exam results. The design quantifies the strength of the prediction using statistical tools like regression, as it will help identify whether the mock board is a reliable indicator for future success

3.2 Participants

The study was conducted using secondary data from the records of the review center, which offers extensive reviews for the graduates of a CHED-recognized higher education institution offering the Radiologic Technology program. This review center is located in Davao City, allowing direct and easy access and ensuring timely data collection. The review center maintains a complete and well-documented record of students' mock board exam results with corresponding licensure exam results, ensuring that the data is readily available and reliable. Given these factors, the review center provides an ideal setting for conducting the study, as it allows for cost-effective, timely, and accurate data gathering that aligns with the objectives of the predictive quantitative research design.

3.3 Measures

This research utilized secondary data obtained from the records of the Review Center and Radiologic Technology Licensure Examination results from the Professional Regulation Commission. The data on mock board results were retrieved with the help of the Review Center Coordinator and paired with the Professional Licensure Examination results.

Measurement of Mock Board Exam Result

Interpretation	Range
Very high	90-100
High	80-89
Moderate	70-79
Low	60-69
Very low	1-59

3.4 Ethical Considerations

The study complied with the ethical principles of the institution's Research Ethics and Review Committee to avoid academic fraud and research misconduct. Permission to conduct the study was obtained from the Program Chair of the Master of Science in Radiologic Technology and the office of the Review Center Director / Coordinator. The researcher guaranteed the privacy of the documents gathered from different offices by limiting access to the data. Furthermore, the privacy of the data received was treated and coded privately based on existing laws and regulations about data privacy and safety protection laws.

Social Value. The study aimed to determine the relationship between the mock board examination and the Radiologic Technology licensure examination results of December 2024. The results provided knowledge and served as a guide in creating the enhancement program for the Bachelor of Science in Radiologic Technology (BSRT). The research results will be disseminated to the community, specifically to those who will benefit the most.

Risks and Benefits. The gathered data does not contain information on the subjects being studied. Rest assured that the study was used for research purposes only. This research serves as a guide for improving the overall school performance of the institution by creating an enhancement program.

Privacy and Confidentiality. In the data gathering, retention, and processing, the researcher followed the criteria of transparency, legitimate purpose, and proportionality (Data Privacy Act of 2012). Anonymity was maintained using alternative codes, such as SRT0001, SRT0002, SRT0003, and so on, instead of actual names. Even if the names and other identifying information were indicated in the source of the data, it was not associated with any part of the written report of the research. The data gathered in this study were kept confidential. If this research study is published in the future, any information indicated in the material will not reveal the participant's identity in any way. Moreover, the researcher declined to provide any information about the data gathered. All gathered data were kept strictly confidential and accessible only to the researcher. Lastly, all the raw data were disposed of properly after the study.

4. RESULTS AND DISCUSSION

Table 1. Level of Mock Board Exam Result

	N	Minimum	Maximum	Std. Deviation	Mean	Interpretation
Mock Board Grade	205	60	81	5.21	68.99	Low
Valid N (listwise)	205					

Legend: 90 – 100 Very High; 80 – 89 High; 70 – 79 Moderate; 60 – 69 Low; 1-59 (Very Low)

Descriptive statistics were computed for the mock board examination grades of 205 participants. The scores ranged from a minimum of 60 to a maximum of 81, indicating variability in student performance. The mean grade was 69 (SD = 5.21), suggesting that, on average, participants scored slightly below the commonly accepted passing mark of 75. The standard deviation of 5.21 reflects a moderate spread of scores around the mean, indicating some variability in the academic performance of the group. The average performance of students in the mock board exam falls into the Low category. Given that this is a predictive measure for licensure exam readiness, it may suggest more review, support, or preparation strategies before the board examination.

Table 2. Frequency of Passed and Failed Results

Indicator	Frequency	Percentage
Fail	62	30.2
Pass	143	69.8
Total	205	100.0

The board examination results revealed that out of 205 examinees, 143 (69.8%) passed the exam, while only 62 (30.2%) failed. This indicates that more than two-thirds of the participants met the passing criteria, highlighting a relatively high overall success rate. The cumulative percentage shows that all 100% of examinees are accounted for, with pass rates dominating the outcome. However, a 30.2% failure rate is still significant and suggests that further academic support or preparation strategies may be necessary for most students. These results suggest a potential concern regarding examinee preparedness

or other factors influencing performance and may warrant further investigation into instructional quality, curriculum alignment, or student support systems.

Table 3. Relationship between Mock Board Exam and Licensure Exam

	Pearson Correlation	Sig. (2-tailed)	Interpretation	Decision
Mock Board Exam Result	-.415**	.000	Significant	Reject
	N	205		

***. Correlation is significant at the 0.01 level (2-tailed).*

A point-biserial correlation was computed to determine the relationship between mock board grades and examination results. The analysis revealed a significant negative correlation between the two variables, $r(205) = –0.415$, $p < 0.001$.

Examinees with higher mock board scores were significantly more likely to pass the board examination, while those with lower mock board scores were more likely to fail. The correlation coefficient of –0.415 reflects a moderate effect size, indicating that mock board grades are a meaningful predictor of actual board exam performance. These results support mock board assessments as an effective tool for identifying at-risk students and enhancing review strategies in radiologic technology education.

The result supports the study by Dante et al. (2024) on the customs broker licensure exam. It revealed that the mock board exam, which provides an overview of students' academic performance, is significant for the licensing exam and should be given to students. Fiscal et al. (2022) also found that pre-board exams can accurately predict the LET result performance.

Table 4. Mock Board Exam as a Predictor of RT Licensure Examination

		B	S.E.	Wald	df	Sig.	Exp(B)	Remarks	Decision
Step 1[a]	Mock	.195	.035	30.424	1	.000	1.215	significant	Reject
	Constant	-12.429	2.388	27.085	1	.000	.000		

a. Variable(s) entered on step 1: Mock.

The logistic regression model revealed that Mock Board Grade was a statistically significant predictor of board exam outcome, $B = 0.195$, $Wald = 30.424$, $p < .001$. The odds ratio (Exp(B)) was 1.215, indicating that the odds of passing the board exam increase by approximately 21.5% for every one-point increase in mock board grade.

The model also included a statistically significant constant ($B = -12.429$, $p < .001$), suggesting that students with low mock board grades have extremely low odds of passing the exam. These results support the predictive validity of the mock board examination. Specifically, students who performed better on the mock board were significantly more likely to pass the licensure exam. This finding highlights the value of using mock board scores to identify students who may benefit from additional support or targeted review interventions.

In addition, the mock board examination is a highly significant predictor and has a positive effect on the likelihood of the outcome, which means that as the mock board examination increases by 1, the probability of the respondents' passing the Radiologic Technology Licensure examination increases by 21.5% in the odds of the event occurring. These findings aligned with a study by Newkirk et al. (2020), which found that passing the certifying exam raises mock board scores by 0.23% for every 1% increase in mock test scores. The result is supported by a study conducted by Fiscal et al. (2022), where it is found that there is a direct linear relationship between pre-LET results explaining 50% of actual LET variations and professional education results explaining 37%. The analysis suggests that college practices and pre-LET review initiatives can significantly improve teacher education graduates' performance in licensure exams.

Both experiential and constructivist learning theories emphasize active, student-centered learning. Both theories help explain why performance on the licensing exam and mock board results might be significantly correlated. The constructivist theory states that students become more prepared by actively expanding their knowledge during practice exams. The experiential learning theory states that students learn by doing and get better at understanding things through practice and feedback.

5. SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

1. **Level of Mock Board Exam Results**: 205 students took a mock board exam, and the mean score was 68.99. The grades ranged from 60 to 81. With most students performing below the 75-passing threshold, the average performance was categorized as "Low." According to the standard deviation's moderate variability, students may not be sufficiently prepared for licensing exams, which suggests the need for more academic interventions or focused review programs.

2. **Frequency and Percentage of Radiologic Technology Licensure Exam Results:** Out of 205 examinees, 143 passed the board exam, equivalent to 69.8%. Sixty-two examinees failed the exam (30.2%). Nonetheless, a noteworthy 30.2% failure rate indicates that a sizable percentage of students require extra academic support or preparation techniques. Examinee readiness is questioned, and additional research into curriculum alignment, instructional quality, or student support systems may be necessary.
3. **Relationship between Mock Board and Radiologic Technology Licensure:** A study found a significant correlation between mock board grades and examination results. Examinees with higher mock board scores were likelier to pass the actual exam, while those with lower scores were likelier to fail. This suggests that mock board assessments can be valuable for identifying at-risk students and improving review strategies in Radiologic Technology education.
4. **Mock Board Exam as a Predictor of RT Licensure Examination**: According to a study, passing the board exam is significantly predicted by one's mock board grade. The chances of passing increase by about 21.5% for every point that the mock board grade rises. However, students with poor mock board scores cannot pass the test. According to the results, students who do better on the mock board exam have a higher chance of passing the real licensing exam, proving the mock board's predictive validity.

These findings confirm that performance on the mock board exam reflects student readiness and is a significant predictor of actual board exam success.

Conclusions

1. The importance of mock board exams in determining and forecasting students' preparedness for the Radiologic Technology Licensure Exam.
2. Most students showed poor readiness, with an average mock board score of 68.99, below the passing threshold, underscoring the need for more focused review sessions and improved academic support.
3. Even though the actual board exam results showed a 69.8% pass rate, the 30.2% failure rate is still cause for serious concern, as it may indicate deficiencies in the way the curriculum is taught, students are engaged, or review techniques are used.
4. The effectiveness of the mock board in identifying at-risk students early on was validated by the fact that the likelihood of passing the licensing exam increased by 21.5% for every point increase in mock board scores.

To sum up, incorporating structured mock board exams and related interventions is crucial to enhancing licensing results and guaranteeing that students are ready for Radiologic Technology professional certification.

Recommendations

Radiologic Technology Graduates. They should acknowledge the importance of mock board exams and practice questionnaires in preparation for the board examination. They should take the exam seriously and treat it as the actual licensure exam to gauge their preparedness and identify their weakness.

Review Center Educators. They should continue implementing and using mock board exams as part of their licensure exam preparation programs for Radiologic Technology. The mock exam should mimic the licensure exams' type, difficulty, and time limitations. Results should be recorded and reviewed systematically to improve and guide instructional decisions for the possible implementation of interventions and reviews.

Future Researchers. Future studies may address the study's limitations by expanding the sample population and incorporating predictors such as GPA, study habits, or instructional quality to build a better predictive model. They can also assess the questions used in the mock board to develop a high-quality mock test.

ENHANCEMENT PROGRAM

Overview

This enhancement program for Radiologic Technology aims to improve the performance and competency of the students to ensure their success in the licensure exam. The program will develop and use learning tools, mock boards, comprehensive exams, and mentorship. This is designed to provide an approach to examination preparation, improving the student's academic performance and increasing the likelihood of the school's performance rating on the Radiologic Technology Licensure Examination. The Radiologic Technology Educators can use the program.

Mock Board Exams and Comprehensive Tests

The lecturers assigned to specific subjects will implement a weekly exam that mimics the actual licensure exam in terms of exam type, level of difficulty, and time limitation. Sample questionnaires should be based on the licensure exam format. These will help students be confident when they take the Radiologic Technology Licensure Examination soon, improve their time management skills, familiarize the exam environment and rules about erasures. Lecturers must conduct a rationale after the exam to practice eliminating wrong answers.

Learning Support

Establish peer mentoring systems where high-performing students guide those who are at risk. Encourage them to understand the importance of helping each other through collaborative study groups, which can promote cooperative learning, enhance engagement, and facilitate concept reinforcement through peer explanation — all of which are encouraged by Constructivist Learning Theory. As results are being monitored, an extra review schedule will be set by the program head. Faculty members will be assigned to support students who need help with the topics that they find most challenging.

Program Timeline

Phase 1 – First semester of the academic year. This phase includes program orientation and planning, review classes conducted by the assigned RT lecturers, and weekly practice tests every Saturday, which mimic the actual board examination questionnaires. This is to determine the basic knowledge and learning needs of the students. Discussion, quizzes, oral recitation, and exam focusing on the recommendations from the Board of Radiologic Technology on the table of specifications for the License examination.

Phase 2 – Second Semester of the Academic Year. Intensified Review. This phase includes intensified mock board and practice tests, classes will be conducted by the review center lecturers, and provision of tutoring for students who need extra help. This deals with Comprehensive practice tests and rationale employing test-taking strategies. All test questions will be rationalized; answers are well-reasoned and evidence-based.

Cluster 1- Image Production and Evaluation

- Film Screen Image Acquisition, Processing, and Image Analysis
- Principles of Imaging
- Computed and Digital Radiography
- Radiopathology

Cluster 2 – Patient Care and Management

- Human Anatomy and Physiology
- Medical Terminology
- Patient Care
- Administration and Leadership
- Professional Ethics and Jurisprudence

Cluster 3 – Radiation Physics, Equipment, Biology, and Protection

- Radiation Physics and Characteristics
- Imaging Equipment and Maintenance
- Radiobiology
- Radiation Protection
- Quality Assurance and Quality Control
- Imaging Science Informatics

Cluster 4 – Radiographic Positioning and Radiologic Procedures

- Radiographic Procedures and Positioning
- Radiologic Contrast Examinations

Cluster 5 – Radiologic Sciences

- Ultrasonography
- Computed Tomography
- Magnetic Resonance Imaging
- Interventional Radiology
- Pharmacology and Venipuncture
- Nuclear Medicine
- Radiation Therapy

Student's Outcome

Cluster 1

- Explain processing room design, recognize and illustrate imaging accessories, processing of latent image, be able to produce and analyze quality radiograph
- Distinguish technical factors and explain setting standards, identify advantages of Computed and digital radiography over screen film, explain the process of image acquisition and its errors, understand the effects of technical factors on the contrast and density of image, knows how to solve problem regarding technique conversion factors, and analyze the considerations involve in determining factors
- Apply and explain the RA 7431 and code of ethics, carry out principles of ethical practice
- Relate different pathologic conditions of the different body systems, and illustrate different pathologic conditions as viewed in the radiograph
- Can implement QA, QC, and data management.

Cluster 2

- Illustrate Radiologic Surface Anatomy and Body cuts, and explain the body systems as applied in radiography
- Apply the word-building process in medical terms, critique and explain medical terms referring to conditions and infections, identify terms, manifestations, diagnosis, and treatment of disease
- Implement patient-RT relationship, illustrate techniques in clinical practice, asses medical emergencies related to Radiologic Technology
- Explain the functions of management, job descriptions, duties, and obligations and be able to comply with the licensing requirements

Cluster 3

- Recognize the atomic structures, identify the process of ionization, excitation, and indicate radioactivity and its decay, differentiate ionizing and non-ionizing radiation.
- Distinguish various photon interactions with matter, solve and explain wavelengths, and frequency; assess x-ray production;
- Illustrate and explain x-ray circuits, generators, and machine operations, their parts, and the automatic processors, maintenance of the machine and assess corrective measures.
- Explain radiation exposure and its effects on cell biology; understand the dose-response relationship
- Identify radiation quantities and units; exposure controls and methods, describe radiation detectors, their application, advantages, and limitations; calculate radiation dose and apply safety factors for patients
- Identify and apply concepts in medical imaging informatics; illustrate medical image data, explain the workflow in radiology, illustrate basic medical imaging processing and analysis, and apply practical and clinical imaging information system evaluation and QA

Cluster 4

- Explain and identify anatomic and radiographic positioning terminology; explain critiques of radiograph and demonstrate the procedures for upper limb, lower limb, head, vertebral column, bony thorax, chest and heart, abdomen, pelvis and hip joints, mammography, and dental radiography;
- Identify and explain contrast media used in radiographic examination, their indications, contraindications, and mode of administration, explain the preparation, and demonstrate proper patient positioning for special radiologic examinations.

Cluster 5

- Explain the physical principles of diagnostic ultrasound; illustrate instrumentation and operation of the machine, perform various examinations and explain anatomical presentation; identify artifacts in ultrasonography
- Illustrate scanning procedures, recognize components, processes and operations, and illustrate technological advancement, radiation protection, and procedures in CT;
- Explain nuclear physical principles, illustrate the process, and apply terms related to MRI, explain methodology and anatomy, distinguish contraindications, safety measures, and biologic effects
- Explain Principles in Digital Subtraction Angiography and Interventional Radiology; demonstrate Therapeutic and Diagnostic Interventional procedures, and explain contrast media used; and apply patient care management.
- Explain and illustrate General Pharmacologic Principles, intravenous Contrast Media, and Medication Administration, emphasizing the legal, ethical, and professional liability of a Radiologic Technologist in contrast media administration.
- Explain and illustrate the physics of Nuclear Medicine and Instrumentation, covering atom structure, nuclear components, properties, radioactivity, radiation detectors, image formation, tomography, radiochemistry, radiopharmacology, clinical nuclear medicine, and radiation protection.
- Explain the application of radiation therapy and illustrate application, calibration, dose rate determination, isodose planning, treatment methods, theories, complications, and quality control.

Assessment and Evaluation

Monitor the performance of the students through regular tests and mock board exam scores throughout the program, collect feedback from the students to evaluate the effectiveness of the program, and identify what are the things that needs to be improved.

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