

# Scientific Literacy of Freshmen Nursing Students in Paranaque City, Philippines

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**Abstract:** *Nursing education in the Philippines has been revised into a more demanding and more rigorous program. The readiness of the students to take on the challenges of the nursing program in the tertiary level is very significant among the students. The scientific literacy of the incoming students in the program can play high influence on this readiness. The study utilized validated examinations and instruments to measure the scientific literacy of the students through a diagnostic examination. The result of this examination was correlated to their academic and skills laboratory examination scores of the students. The correlated data showed how the readiness of these students can influence their academic and skills laboratory performance. Results show that high level of correlation between the scientific literacy and the academic and skills laboratory scores among 127 students. This shows that high scientific literacy is a better situation and foundation among students who will be taking the nursing as a specialization in their tertiary education.*

**Keywords:** Nursing Education, Scientific Literacy Diagnostics, Healthcare Education, Student Readiness in Nursing, Mentoring in Nursing

## 1. Introduction

Nursing education in the Philippine is quite demanding and rigorous in order to meet the demands of the local and national competencies. However, this may not be enough as we geared toward a more ready group of students in the field of science and health, hence a high level of scientific and health literacy is a requirement [1]. According to CHED Memo no.15 series of 2017, also known as the Policy, Standards and Guidelines for the Implementation of the Curriculum of Bachelor of Science in Nursing, a nursing student has to complete 192 units /credits of academic and non - academic subjects to gain a Bachelor's degree. This is composed of general education subjects, major subjects and professional subjects. Within the curriculum, professional subjects are delivered with lecture, laboratory and related learning experience where students are required to demonstrate skills laboratory learning and return demonstrate what they have learned with respect, but not limited to the learning outcomes set by the commission on higher education [2].

The delivery of these subjects and approaches are executed by the faculty or the clinical instructors for student nurses. Hababeh and Lalithabai, 2020 shows that a clinical instructor needs to be holistically sound in order to be more effective and efficient among nursing students [3]. However, Appiah, 2020 [4] technically showed that although a nursing clinical instructor in the Philippines sees the nursing programs to be good, clinical and teaching experience are playing high factors to delivering the quality healthcare education. In addition to faculty factors, Bautista et al, 2019 [5] that facilities and student - faculty ratio has a significant impact to the quality of learning of nursing students. It is a must the clinical nurses will also train the students holistically, as the lack of knowledge, skills practice and undesirable attitude is a great basis of error prone activities among student nurses [6].

The nursing curriculum designed not only for student to be knowledgeable but also to be literate in the application of what they know in the field of science and research. The schools may present several requirements but the ability of the student to understand such requirement and accomplish the demands of the curriculum may hinder their ability to learn in the field of healthcare.

This study was done in order to evaluate the scientific and health literacy of the freshmen nursing students through a diagnostic test. The scores from the diagnostic test, academic performance, and skills laboratory were collected and was evaluated to see the readiness of the students in the field of nursing.

## 2. Methodology

### Research Instrument

The instruments are researcher - made diagnostic, academic and skills laboratory test that is composed of both English and Filipino questions for translations. The instrument is structured with 25 questions each that corresponds to the selected category of lesson delivery and teaching - learning system of nursing and nursing education. The instrument was subjected to three - person validity review with a reliability score that translates to acceptable level.

The tests utilized in the study were all validated and were subjected for reliability tests which translates to acceptable rating from Cronbach Alpha. The diagnostic tests are given to evaluate students' ability and skills before the academic, skills lab intervention. The academic, skills laboratory scores are given to measure student learning and performance and whether the training interventions given by the faculty are effective.

### Data Gathering and Analysis

Examinations were administered to freshmen 127 students in a longitudinal process. The diagnostic tests were given to

students at the entry level. The academic scores and skills laboratory scores were given all throughout the program for the whole school year. These are scores in the nursing professional subjects.

Data analysis were done through Pearson's  $r$  correlation coefficient formula, where lower value than the 0.05 level of confidence was considered to have yield a significant relationship. The diagnostic test for scientific literacy were correlated to each academic and skills laboratory scores.

### 3. Results and Discussion

#### Diagnostic Scientific Literacy Scores

The data shows that the diagnostic test utilized from the students shows high significant positive relationship to the scores of the academic performance and skills laboratory score. The academic performance is indicated by the overall all performance of the students in all nursing profession subjects. This goes to show the positive correlation ( $p > 0.0000004$ ) between academic and diagnostic test can indicate a positive correlation between the scientific literacy and academic scores of the students. Furthermore, Skills laboratory ( $p > 0.0000008$ ) also showed high significant positive correlation to the diagnostic test. This shows that the higher the scientific literacy of the students the better scores they get in both academic and skills laboratory scores. The readiness of the students to take on the challenges of the nursing field becomes more effective and efficient.

Nursing education in the Philippines has been tough in the past years, specifically in the years 2017 – 2022. This were the years where gap of student enrollees has occurred and where K - 12 [7] students enter the following years. It was also the years when pandemic has struck. Adjustments were done during the K - 12 basic education curriculum challenge by time and level of difficulty, but bigger challenges have arisen in the online learning for nursing. Challenges that include psychological barrier and mental blocks, developing academic resilience and teaching methods that are not as effective as they should be since students tend to be isolated and overwhelmed by the activities given online [8].

The result has also shown that the Attitude, Achievement, Accomplishment, Awards, and Affiliation where key factors in facilitating and mentoring the nursing students that has been a practice as well in other universities and colleges with strong nursing research practice [9]. Although negative impacts in the online learning have occurred in some of the respondents which indicates stress, and somewhat influence that academic performance of the students [10] in their past years, the faculty managed to strengthen and facilitate student development through the years and majority of the students to concretize and reinforce student learning.

### 4. Conclusions

The study indicates that students' scientific literacy has good influence on their readiness to take on the challenges of nursing and nursing education curriculum. The higher the

students' scientific literacy, the better the cope with the academic and laboratory activities. The faculty may have contributed to the effective and efficient delivery of the learning process of the students which resulted to high academic and laboratory scores.

#### Acknowledgement

The researchers would like to acknowledge the faculty members of the College of Health Sciences Education of Olivarez College, especially the faculty members who have administered the instruments.

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