

## Exploring Alternative Teaching Methods Using Peer-Student validation to strengthen Nursing Skills Teaching and Learning

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**Abstract:** Nursing educators can use peer validation to advocate for student development. Clinical instructors can use the information gathered from peer validation to create individualized performance progress plans to support student learning. The study's goal was to compare the level of memory retention based on knowledge and skill performance as measured by Pre-Post tests and the Skills Evaluation Tool. Furthermore, lessons from research studies were highlighted to improve and stimulate students' clinical learning. The study included eighty-two (82) level I BSN students. The respondents were first-year student nurses of the College of Allied Health Department of Nursing, National University, Manila. The skills laboratory data were collected over three weeks, from January 22 to February 12, 2019, utilizing the regulated checklists routinely used at the Department of Nursing during the Objective Structured Clinical Examination. The significance level was set at 0.05, and the level of confidence was 95%. The test results were considered significant if the p-value was less than 0.05. The control group accumulated a pre-test mean score of 7.70, which would be interpreted as knowledgeable, and a post-test mean score of 7.70, which would be construed as knowledgeable, based on the pre-test and post-test results to determine the level of memory retention in the handwashing technique. The control group's results also show significant differences in scores after the intervention for the handwashing technique procedure during the typical clinical learning experience. The mean difference between the control and experimental groups suggests that peer validation as an alternative teaching modality improved nursing students' skill performance.

**Keywords:** peer-student validation; memory retention; nursing skills

### 1. INTRODUCTION

Peer validation is a powerful tool that nursing professors and instructors can use to advocate for student development. Instructors could use the information gathered from peer evaluation to create individualized performance progress plans to improve student knowledge. Peer validation offers a wide range of criticism that can be cast off to recognize clinical knowledge requirements and enhance skill acquisition and memory retention.

Peer validation asks students to examine and evaluate their own and other's actions and behavior in a group setting. Peer validation benefits include increased feedback frequency and appropriateness and improved learning through interaction and evaluation (Belland, 2017).

Peer review provides a form of performance feedback for nursing staff and students. Peer review benefits include promoting learning and assessment skills. It also provides a framework for ongoing quality development in nursing. The use of peer review is growing in both academic and clinical settings (Bonnel, 2008).

### *Alternative Teaching Method*

An educator's task is choosing activities to help students understand course objectives. For learners to understand the matters you would like them to learn, you may need to give them lectures, conversations, group work, tests, or other experiences. The selection of strategies is influenced by several factors, including the level of the objectives and the student's abilities (Lincoln, 2019).

In layperson's terms, alternative teaching means designing lesson plans and workbook exercises with all students in mind, as well as lectures and interactive learning. These student-focused disparities necessitate instructional designs that include diverse teaching spaces for students at all levels of education and from various settings while not undermining the professor's strengths (Tomlinson, 2014).

It is not the instructor's responsibility to amuse students, but critical to engage them in the learning process. Choosing a method that addresses the needs of different students at different levels of learning begins with a self-evaluation. Educators will learn what works best for their personalities as they develop their teaching methods (Concordia, 2018).

Professor: Deciding on the best teaching method is the first step in knowing how to engage students. Professor: Try different methods to achieve other goals, and continuously challenge us to find new ways to connect with each student. Transferring knowledge from expert to student is an art form and a skill (Wong, 2014).

### *Commission on Higher Education Memorandum*

CMO No. 15 series of 2017- Based on the Guidelines for Implementing CMO No. 46 s. In 2012, this PSG implemented the "shift from learning competency-based standards to outcomes-based education," defining the "core competencies" expected of BS Nursing graduates "regardless of the type of HEI they graduate from." However, in "recognition of the spirit of outcomes-based education and the typology of HEIs," this PSG also provides "ample space for HEIs offering BS Nursing programs to innovate in the curriculum in line with the assessment of how best to achieve outcomes." The Technical Committee determined appropriate curriculum delivery methods using a learner-centered/outcomes-based approach, as shown in Article V Section 10.4 instructional design (Education, 2017).

### *Outcome-Based Education*

Outcome-Based-Education (OBE) requires students to demonstrate what they "know and can do." The four principles proposed are the most widely used (Spady, 1995,2010). The Outcomes-Based-Education core curriculum begins with a

strong direction of what learners need to achieve.

#### *Clarity of focus*

It signifies that the whole thing educators do should revolve around what they choose learners to know, recognize, and be able to accomplish. To put on differently, educators must concentrate on assisting learners in developing the understanding, abilities, and qualities necessary to achieve the communicated mean results.

#### *Designing down*

A teacher's curriculum outline must focus firmly on the desired effects that learners should achieve by the end of the course. When this is completed, all instructional outcomes are put together to guarantee that the preferred result is achieved. This one requires that the curriculum outline begins with a defined definition of what students should be learning.

#### *High expectations*

It denotes that professors must establish high, ambitious standards to inspire learners to immerse themselves in what they are learning. Assisting students in meeting high expectations is inextricably related to the notion that positive learning leads to further productive understanding.

#### *Expanded opportunities*

Educators should work hard to deliver more chances for the entire learners. This concept exists to be established on the notion that not all learners can be taught the same idea in the same way or at the same time. Most learners, however, will be able to achieve high standards if given adequate opportunities.

#### *Outcome-Based Assessment*

What do we expect students to be able to do after completing a curriculum or subject? OBA stresses that we indicate that they can do so. Assessment is a critical component of outcome-based education and is used to determine whether a qualification has been obtained (Spady, 1995,2010).

#### *Developing Marking Schemes*

A rubric is a standard benchmark used to evaluate learner effort or accomplishment. Rubrics are mainly compatible with learning outcomes that are complex or difficult to quantify. Well-constructed rubrics include clear definitions of each characteristic to be assessed for a given learning outcome (Innovation, 2016).

#### *Giving Feedback*

Feedback is an integral part of the assessment process in promoting and

supporting learning. Students' feedback must be returned in time to inform the next step in the process. Coursework frequently serves a developmental function through feedback while contributing to summative assessment through the marks awarded (Innovation, 2016).

#### *Selecting Teaching and Learning Activities (TLAs)*

OBE emphasizes a student-centered approach because its realization is mainly determined by the degree to which learners take responsibility for their learning and whether cooperative learning is applied. (Biggs, *Evaluating the Quality of Learning: The SOLO Taxonomy Structure of the Observed Learning Outcome* Educational Psychology, 2014); OBEs should include experiences that students will encounter in the real world. These activities can be managed by the teacher, peers, or students themselves (Biggs, *Teaching For Quality Learning At University* Society for Research into Higher Education 4th Edition, 2011).

#### *Peer-Student Validation*

During practice sessions, each learner requires feedback or validation. Validation could have been intrinsic or extrinsic. Intrinsic validation comes from within the learner; it's like a little internal voice telling us if we did well or did something wrong compared to an internalized performance standard. The Professor, Clinical Instructor, or another objective source provides extrinsic validation. Because it supplements our internal feedback, it is sometimes referred to as augmented feedback. Motor learning experts have identified two types of augmented feedback: knowledge of results and performance. External verbal feedback about performance outcomes is the knowledge of results. At the same time, performance knowledge is external information about the active process involved in performance (Swinnen, 2018). Clinical skills training for nursing students to ensure patient safety is essential to nursing education. There has been much discussion recently about the most effective ways to teach clinical skills. There is little empirical evidence on best delivering those skills to student nurses and little about preferred learning styles.

#### *Evaluation of Memory Retention and Skills Performance*

Checklist questionnaires assess memory retention, knowledge level, and skill performance. Checklists are a common way to establish learning. The checklist explains how to develop skill activities to achieve goals. Clinical Instructors use them to ensure that nothing is missed while demonstrating a skill. According to (Deyoung, 2009), students can use a checklist during peer instruction to provide guidance and feedback. Several items on the checklist have been checked off as completed. The educator may go one step further for assessment and evaluation purposes. The checklist may include rating scale descriptors such as adequate, good, excellent, fair, and poor, as well as a number scale that is added to provide a total score (Deyoung, 2009).

When evaluating a specific skill performance, one or multiple alterations may exist. Might there be elements on the checklist that are considered essential? If the learner does not complete those critical elements, they may not pass the test even though all other components are satisfactorily touched (Deyoung, 2009).

### *1.2 Statement of the Problem*

The study's goal was to compare the level of memory retention based on knowledge and skill performance as measured by Pre-Post tests and the Skills Evaluation Tool scores.

Specifically, it sought to answer the following questions:

1. What is the respondents' pre and post-test level of memory retention in handwashing technique of:
  - 1.1 Experimental Group;
  - 1.2 Control Group
2. Is there a significant difference between the respondents' pre and post-test level of memory retention in handwashing technique of:
  - 2.1 Experimental Group;
  - 2.2 Control Group
3. What is the respondents' level of performance in the Return Demonstration of handwashing technique in:
  - 3.1 Experimental Group;
  - 3.2 Control Group
4. Is there a significant difference in the respondents' level of performance in Return Demonstration of handwashing technique between:
  - 3.1 Experimental Group;
  - 3.2 Control Group
5. Based on the study findings, what is the proposed recommendation to improve the teaching and learning of Nursing Skills?

## **2. METHODOLOGY**

A quasi-experimental pre-test and post-test design were used in this study. Quasi-Experimental research is like experimental research but differs in that, as in the study, no randomization was performed, and a control group was present (LoBiondo-Wood & Haber, 2014). In addition, a quasi-experimental design was used to determine whether the Peer-Student Validation had the intended effects on the respondents. The goal of this design was to assess the impact of the intervention and the outcome.

This design was chosen because there was a need to describe and compare

the differences in the outcomes to establish a cause-and-effect relationship between the independent and dependent variables (Venzon & Venzon, 2010). A survey tool was used to collect the data required to justify and evaluate the variables in the study (LoBiondo-Wood & Haber, 2014). The results of the clinical evaluation tool were used.

Level I Bachelor of Science Nursing Students in the Department of Nursing studied the following subjects. Level I students was chosen due to their limited knowledge of various alternative learning methods. The study included level I students enrolled in professional courses such as Fundamentals of Nursing, which had both lecture and related learning experience (RLE).

Eighty-two (82) level I BSN students participated in the study. Because the researcher used a quasi-experimental survey with pre-test and post-test questions, forty-one (41) of the total population were assigned to the control group. In contrast, the remaining forty-one (41) participants were assigned to the experimental group. The researcher used the purposive sampling technique because a quasi-experimental study does not require randomization. Purposive sampling is a nonprobability sampling method in which the researcher selects respondents based on a personal judgment about which ones will be most informative (Polit, 2008, 2012). Purposive or judgmental sampling was used by the researcher, in which the population was used to handpick sample respondents (Polit, 2008, 2012). Purposive sampling does not provide an external objective method for evaluating a topic for a chosen subject. However, it has some advantages in certain situations, such as testing a new instrument (Polit, 2008, 2012). The researcher purposefully chose 40 student nurses for this study. These student nurses met the inclusion criteria and were accepted into the study. The following were the inclusion criteria:

### *2.1 Inclusion Criteria:*

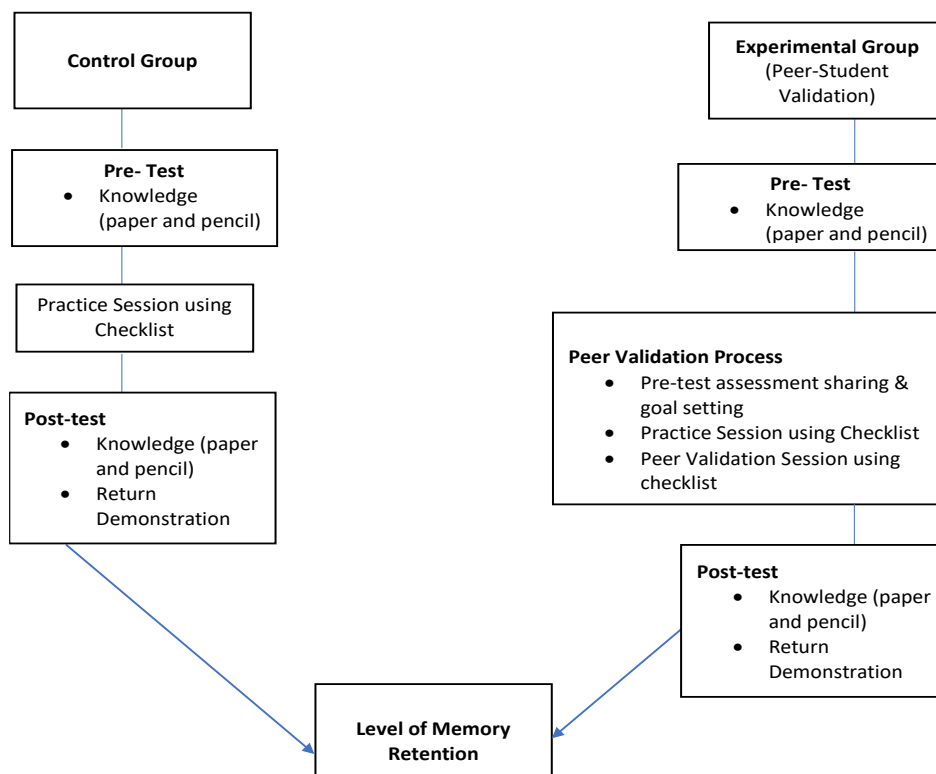
Currently enrolled in the BSN program, Level I BSN student,  
Willing to participate in the study and have agreed and signed the consent form

### *2.2 Exclusion Criteria:*

Level II, III, and IV BSN students

### *2.3 Research Paradigm*

The conceptual framework below is a pre-test and post-test framework utilizing peer evaluation.



Peer-Student Validation determines the level of memory retention of study participants. The study's dependent variable is the student's level of memory retention, and the study's independent variable is the alternative teaching method used for the students. Participants in the study were divided into two groups: control and experimental. On their return demonstration of pre-set nursing skills, memory retention was investigated using pre-post testing and a clinical skills evaluation tool. The researcher made a recommendation based on the study's findings near the end of the study.

#### 2.4 Ethical Consideration

The researcher attended the Good Research Practice seminar by the Department of Nursing. The anonymity of the participants was strictly observed, hence the confidentiality of the obtained information and responses to the study. Proper instructions were given to all concerned study participants, including the research's primary objective.

### 3. RESULTS AND DISCUSSION

Data was collected in the skills laboratory over three weeks, from January 22 to February 12, 2019, using structured checklists routinely used during the Objective

Structured Clinical Examination at the Department of Nursing. The missing data was checked. Following that, the coded data were entered into Excel. Descriptive statistics provided simple summaries of the sample, whereas inferential statistics guided the conclusions drawn from the analysis of both groups' scores.

Table. 1: Weighted Mean Distribution of Level of Memory Retention in Handwashing Technique for Control and Experimental Group

Group	Pre- Test		Post- Test	
	Weighted Mean	Verbal Interpretation	Weighted Mean	Verbal Interpretation
Experimental	6.55	Somewhat Knowledgeable	14.50	Very Knowledgeable
Control	7.70	Knowledgeable about	7.70	Knowledgeable about
General Weighted Mean	7.12	Somewhat Knowledgeable	11.10	Knowledgeable about

*Very Knowledgeable: 11.26- 16.00 Knowledgeable: 7.56- 11.25 Somewhat Knowledgeable: 3.76- 7.50 Limited Knowledge: 1.0- 3.75*

The pre-test general means score of 7.12 of the respondents' level of memory retention in the handwashing technique is explained in Table 1, which is interpreted as somewhat knowledgeable. The post-test revealed a general mean score of 11.10, considered knowledgeable. During the pre-test, the experimental group received a mean score of 6.55, interpreted as somewhat knowledgeable, while the control group received a mean score of 7.70, interpreted as knowledgeable.

On the other hand, the experimental group's post-test received a mean score of 14.50, which is interpreted as very knowledgeable. In contrast, the control group received a mean score of 7.70, interpreted as knowledgeable. As evidenced by the improved mean scores, the findings suggest that peer validation practice of nursing skills is an effective learning modality. Supplemental simulation practice, oversight correction, and feedback significantly improved students' skill acquisition and retention in this study. Peer validation was one of the effective tools in simulation that exposed students to non-hazardous clinical practice sessions in one study abroad (Glasgow, 2010). Memory is inextricably linked to the learning process, which is concerned with the acquisition of skills or knowledge. Memory is essential (Fougnie, 2008).



Table 2: Significant Difference between Pre and Post-test Level of Memory Retention in Handwashing Technique

Experimental and Control group	Test Value = 0				P-Value	Verbal Interpretation	Decision rule	
	<i>t</i>	Df	Mean difference	95% Confidence Interval of the Difference				
				Lower				Upper
Pre-test	13.290	39	7.12500	6.0406	8.2094	.000	Very Significant	Reject Ho
Post-test	31.353	39	13.67500	12.7928	14.5572			

Results show that using Peer-Student Validation improves memory retention and has statistically significant effects on the experimental group. Paired t-tests for all normally distributed clinical performance data from first-year nursing students are shown in Table 2. The data indicates a p=0.00.

Table 3: Weighted Mean Distribution of Level of Skill Performance in Return Demonstration of handwashing technique in Control and Experimental Groups.

Group	Weighted Mean	Verbal Interpretation
Experimental	29.10	Highly Skillful
Control	27.95	Highly Skillful
General Weighted Mean	27.52	Highly Skillful

*Highly Skillful: 22.51-30.00, Skillful: 15.01- 22.50, Moderately Skillful: 7.51-15.00, Limited Skill is shown: 1.00-7.50*

The mean distribution of performance levels in the control and experimental groups during the post-test return demonstration of the handwashing technique is shown in Table 3. The general weighted mean obtained by respondents was 27.52, indicating that they are highly skilled at performing the procedure. Overall, the experimental group received a mean score of 29.10, while the control group received a mean score of 27.95, indicating that both groups were highly skilled.

The outcomes inside the experimental group demonstrated that the mean score variances after the intervention in the experimental groups for the handwashing procedure were statistically significant. Similarly, when the mean score differences of the same process in the experimental groups were compared, the experimental groups had higher mean scores than the control groups. The mean difference between the control and experimental groups suggests that peer validation as an alternative teaching modality improved nursing students' skill performance.

Table 4: Significant difference in the level of skill performance in return demonstration of handwashing technique between the control and experimental group.

Skill Performance	Test Value = 0					P-Value	Verbal Interpretation	Decision rule
	t	df	Mean difference	95% Confidence Interval of the Difference				
				Lower	Upper			
Experimental	100.594	19	29.10000	28.4945	29.7055	.000	Very Significant	Reject Ho
Control	54.773	19	27.95000	26.8820	29.0180	.000		

The results of paired t-tests for all normally distributed clinical performance data of first-year nursing students are shown in Table 4. The standard deviations for the handwashing technique procedure yielded statistically significant results. This demonstrates that using Peer-Student Validation in the skills laboratory improved students' clinical performance. (Rogers, 2014)

*Problem Number 5: Based on the study findings, what are the proposed recommendations to improve teaching and learning Nursing Skills?*

Peer validation has been shown to improve nursing students' memory retention and skill performance. It provides a framework for continuous quality improvement and is a time-efficient approach to enhancing practice. Peer validation benefits include fostering learning and evaluation skills and increasing student responsibility (Bonnell, 2008).

#### 4. CONCLUSION

Peer validation is an effective learning modality, as evidenced by the experimental group's improvement in pre and post-tests. As part of the peer validation process, supplementary simulation practice, error correction, and feedback significantly improved students' skill acquisition and memory retention in this study. The differences in a weighted mean between the experimental and control groups show that using Peer-Student Validation enhances memory retention and has statistically significant effects on the students in the experimental group. The significant difference in the experimental group's pre and post-test scores following the peer validation intervention in the procedure on handwashing technique had improved nursing students' skill performance.

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