

Understanding Basic Math Concepts Through Constructive Visualization
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Problem: Poor basic math skills for pharmacological calculation can cause major personality development regression that deflates the confidence level of nurses leading to unsatisfactory and unsafe performance in actual clinical skill.

Evidence: One of the major causes of drug administration errors is due to poor basic math skills such as percentage, ratio and proportion, fractions, etc. Studies show that this problem is rampant in nursing school population.

Strategy: Basic math skills curriculum using Constructive Visualization based on “conceptual mapping” techniques was employed in Excel Nursing Program. Two main diagrams, the POPPPSS® Conversion Diagrams and POPPPSS® Advance Math Map increased their math calculation accuracy.

Practice Change: Use the POPPPSS® Math Diagrams in teaching, demonstrating and calculating pharmacological problem because a well-structured visual diagram of Number Map shows the cross-linkage among fractions, decimals, percentages and its related math operations including calculations in various methods such as standard formula and dimensional analysis. Other methods are also presented as additional techniques.

Evaluation: Vocational Nursing students are able to calculate using several calculation techniques with 90% or above accuracy. Confidence is important in developing competency in clinical applications.

Recommendation: Ensure basic math skill technique is taught adequately in nursing schools. POPPPSS® Math Diagrams provide concrete visualization of numbers and its operations providing immediate feedback that enhances medication calculation accuracy.

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