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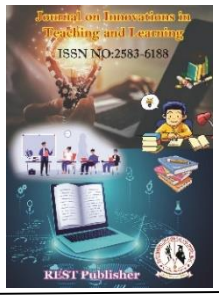


# Performance Assessment of Different Nursing Student Categories: A Multi-Dimensional Study Using WPM Method

**Tamil Selvi Moses**

*Banasthali University, Rajasthan, India.*

*Corresponding Author Email: tamilthaya262@gmail.com*

***Abstract:*** *The study employed the Weighted Product Model (WPM) method to assess five categories of nursing students—nursing education learners, nursing trainees, future nursing professionals, student nurses, and aspiring nurses—on four critical criteria: clinical competence, academic competence, patient care, and professional and communication skills. Using a balanced assessment framework with equal weights (0.25) assigned to each criterion, the analysis highlighted notable performance differences among the groups. Nursing trainees ranked highest with a priority score of 0.64413, excelling in patient care. Aspiring nurses secured second place (0.53287), demonstrating strong professional and communication skills, while student nurses ranked third (0.52933), excelling in academic assessments. Future nursing professionals, despite ranking fourth (0.35769), displayed remarkable clinical competence but had areas for improvement in patient care. Nursing education learners ranked fifth (0.25270), demonstrating consistent yet low performance across all criteria. The weighted normalized decision matrix offered an in-depth analysis of the strengths and weaknesses of each group. These findings reveal varying skill levels among nursing student groups, emphasizing the need for targeted educational interventions. The study provides valuable guidance for nursing education programs by identifying areas where student groups excel or require additional support. Such insights can inform curriculum enhancements and training strategies to better prepare students for their healthcare roles.*

***Keywords:*** *Weighted Product Model (WPM), Using Education Assessment, Clinical Competency, Healthcare Professional Development, Performance Evaluation, Multi-criteria Decision Making, Academic Performance, Patient Care Assessment, Professional Communication Skills, Nursing Training Programs.*

## 1. INTRODUCTION

Modern healthcare operates within an ever-evolving knowledge landscape, demanding that physicians be well-educated, committed to lifelong learning, and active in evidence-based practice. Delivering high-quality and effective patient care requires the extensive knowledge base must remain open to exploration and inquiry. Consequently, the education of healthcare professionals, especially nurses, has transitioned from a practice-oriented training model focused on routine tasks to a university-based approach. This approach emphasizes understanding complex situations, seeking out evidence, and applying it thoughtfully in practice. [1] The theme “Sources of stress associated with the trainee in clinical practice” revealed several sub-themes, including judgmental attitudes, fear of receiving low grades, warnings from instructors, pressure surrounding care plans, issues related to status, and comparisons among students. Many students expressed experiencing significant stress due to the fear of being graded by their instructors. Another major stressor was the responsibility for patient care plans assigned during training. Additionally, students reported feeling demotivated by the attitudes and behaviors of their peers. [2] Emerging research indicates that stress negatively impacts not only the physiological, psychological, and The social health and overall well-being of nursing students are critical aspects of their development. This study represents A new contribution to the field of nursing education, offering considerable value. This study is the first to critically analyze stress and coping strategies among nursing students from the

perspective of nurse educators throughout their academic journey. The study highlights the importance of further research to establish connections between specific coping mechanisms and the stressors encountered in nursing programs. Such insights would enable nursing programs to enhance their support and educational approaches for students. [3] Given the limited number of participants, the results of this study should be viewed with caution all drawn from a single geographic region. Additionally, the sample size used for the factor analysis was relatively small. Since the participants were from one university, the findings may not be representative of nursing students as a whole. Future refinement of the instrument with a larger and more diverse student population is recommended. Nevertheless, despite these limitations, the study provides evidence CAS delivers precise and dependable scores assessing nursing students' perceptions of cultural awareness. [4] To enhance the desired level of learning in nursing, a nursing school in Hong Kong implemented a program to train its faculty in creating high-level cognitive assessment items for various examinations. Over time, the school established a nursing assessment item bank designed to supply these advanced cognitive assessment items. This initiative aimed to promote Students' ability to think critically and analyze situations deeper learning approach. [5] The motivation of nursing students throughout their entire education, particularly in the Swedish context, has not been extensively explored. It is reasonable to assume that individual students' interest and motivation fluctuate at different stages of their education, necessitating varying levels of support from tutors and teachers. Consequently, it is crucial to investigate students' self-reported motivation and their reasons for their levels of motivation over the course of their three-year nursing program. [6] After obtaining approval from the institutional review board, the nursing department chair and I met with the student services coordinator at the designated institution to outline her role in the study. The coordinator accessed the email distribution list for nursing students, excluding first-year undergraduates. We reviewed the inclusion and exclusion criteria with her and provided a copy of the email script inviting eligible student's Eligible participants were identified based on the inclusion criteria, after which the coordinator sent an email invitation containing a web link to access the study. [7] Research indicates that students' experiences in clinical practice can significantly influence their learning, either positively or negatively. Variations in the findings highlight the uniqueness of clinical learning environments, which may be shaped by cultural, socio-economic, and political factors, as well as differences in curricula and the structure of clinical nursing education. Consequently, it is essential to conduct studies exploring nursing students' clinical learning experiences across diverse cultures and countries. [8] Nursing students have the flexibility to select their clinical training environment, with options including hospitals, nursing homes, Hospital placements are offered in various specialty areas such as medicine, general surgery, orthopedic surgery, thoracic surgery, urology, geriatrics, infectious diseases, pediatrics, neurology, oncology, and emergency care. Additionally, opportunities exist in home-based care, primary care, and mental health care settings. Throughout their clinical training, students are supervised by staff nurses within the departments. These supervisors are responsible for teaching practical skills, serving as role models, and evaluating the professional growth of the nursing students. [9] An exploratory factor analysis identified three main sources of stress for nursing students: learning and teaching, job-related factors, and course structure. Interestingly, students who reported baseline distress on a general health questionnaire or were at risk of developing chronic stress-related illnesses did not find these stressors more distressing than those without baseline distress. Instead, the findings suggest that well-being is more closely linked to the perception of opportunities for achievement, challenging the traditional notion that reducing distress alone leads to improved well-being. [10] The aim of this paper is to explore the sources of stress faced by nursing students. In addition to this overarching goal, we will investigate the specific objectives presented in each study assess stress levels in relation to the students' academic year and include cross-sectional studies involving students from the same or different academic years, as well as longitudinal studies that track stress evolution within the same group over several years. Another key focus is to analyze stressors related to clinical practice as part of the students' training experience. [11] Our study found that second-year students experienced worse health status, higher levels of physiological anxiety, greater mental Anxiety and general symptoms were more pronounced in students from certain years compared to others. However, no significant differences were observed in psychological symptoms like depression or in cognitive and neurovegetative symptoms. These results align with previous research, which indicates that second-year students are especially susceptible to stress linked to clinical practice. [12] Being a role model and health promoter is crucial, especially in a profession where resilience is key to long-term success. The significance of a nurse's own health-promoting behaviors cannot be overlooked, as nurses tend to experience higher levels of stress and illness compared to the general population and other professions healthcare professionals, it is essential to understand when and where these stressors and health issues begin in a nurse's life. Are these challenges solely a result of their work, or do they reflect underlying stress and inadequate health promotion during pre-service education programs? This study aims to address these research questions. [13] While

 

not all of the initially developed items loaded together, the five factors identified aligned Using the original conceptual framework of CAS, including its subscales derived These factor loadings were utilized in subsequent analyses to verify construct validity. Table 4 presents the mean item scores and standard deviations for the overall scale and each subscale. The sample size varied across subscales due to the exclusion of individuals lacking data for certain items when calculating a specific subscale. [14] There are various methods for calculating weights, with the estimation method and the entropy method being the most commonly used. The estimation method involves the decision maker expressing all criterion weights in numerical terms, where a higher value for a criterion indicates its greater relative importance. While this method is straightforward when the number of criteria is small, it can yield misleading results when there are many criteria. To address this issue, the entropy method was employed. Entropy quantifies the level of uncertainty related to the random occurrence of a message's expected information content, with this uncertainty being represented by a specific probability distribution. [15]

## 2. MATERIALS AND METHOD

**Learners in Nursing Education:** If you're unsure about your preferred learning styles, taking an assessment like this one can be beneficial. Now, let's explore the main learning styles encompass visual, auditory, kinesthetic, and reading/writing preferences discuss how to optimize each of them for success in nursing school.
**Nursing Trainees:** The TNA works in collaboration with a multidisciplinary team to acquire the knowledge and skills necessary to identify the social and personal needs that must be addressed. This role serves as a link between support workers and registered nurses, contributing to the development of the healthcare workforce for the future.
**Future Nursing Professionals:** The Master of Science in Nursing (MSc Nursing) program encompasses various specializations, including obstetrics and gynecology nursing, Pediatrics, Mental Health Nursing, Medical-Surgical Nursing, and Community Health Nursing.
**Student Nurses:** You may take on a healthcare support role, but it is important not to engage in tasks that exceed your skills or competence. Please refer to our guidelines. All staff must be aware that you are working as a healthcare assistant, not as a nursing student.
**Aspiring Nurses:** If you're an aspiring nurse and haven't started your training yet, there are several factors to take into account. If you're uncertain about whether to pursue a career in nursing or teaching, you might consider explore the option of becoming a nurse educator and teaching in a nursing program.
**Clinical Competency Evaluation:** Clinical competence involves the application of It involves the application Technical and communication skills, knowledge, clinical reasoning, emotions, and values within the clinical environment. It also encompasses the capacity to efficiently perform professional responsibilities in practice.
**Academic Performance Review:** Clinical competence refers to the integration It entails the application of technical and communication skills, knowledge, clinical reasoning, emotions, and values in clinical settings. It also refers to the ability to perform professional duties competently and effectively in practice.
**Patient Care Assessment:** Patient assessment is a structured process of gathering and analyzing pertinent information regarding a patient's medical history, symptoms, and overall physical or mental health condition.
**Professionalism and Communication Skills Evaluation:** Professional communication involves the exchange of information, ideas, and messages in a professional environment in a respectful, effective, and appropriate manner. It includes Effective communication entails expressing ideas clearly and concisely, actively listening, and adapting communication styles to meet the needs of different audiences and contexts.

**WPM method:** MCDM scores provide an objective summary of the criteria, making worker evaluations more accurate than relying solely on expert The Outcome This method utilizes an objective capability matrix based on MCDM scores, which produces a ranking group of competencies created, allowing for the selection of operators from most skilled to least skilled based on priority. This method enables linear optimization and ensures that the optimal team is chosen. Comparing operators becomes more reliable, accurate, and objective. Additionally, the scores It can serve as a dashboard for improved management team, with the least skilled operators identified as targets for optimization. [16] Furthermore, the instruments used may have impacted the results due to their development within an American cultural context. Japanese nursing education and practice are influenced by strong traditions and cultural values, such as the limited self-determination in making independent professional judgments by Japanese nurses and the prevailing traditional medical model of knowledge and practice. These factors should be critically examined. Developing culturally appropriate critical thinking (CT) assessment methods represents an A challenge for researchers focused on improving nursing practice. [17] The primary objective of this article identify key flexibilities and factors that significantly influence the flexibility of Flexible Manufacturing Systems (FMS) in any industry, enabling management to effectively address these factors. In this

study, we apply Multiple attribute decision-making (MADM) techniques, including simple additive weighting (SAW) and weighted product modeling (WPM) employed to evaluate the flexibility of FMS across fifteen attributes using qualitative data. The evaluation process follows a three-step approach: First, qualitative attributes are transformed into fuzzy numbers and subsequently into crisp scores. In the second step, the weights of various attributes are determined based on the specific objective using the Analytical Hierarchy Process (AHP) method. [18] To ensure protection, blast-resistant glazing must not exacerbate the hazards associated with explosions. It resists corrosion and helps to remove and polish any flying or falling glass fragments Will stay within the frame after breaking. In most cases, blast-resistant glazing does not encounter air pressure from explosion waves. As a result, it allows for cost-effective glazing operations. Analytical tools are These tools are accessible to enhance blast-wave loading parameters and design structures resistant to blasts. Validated by professional engineers, they can be used to precisely evaluate structural responses. [19] The study of non-metallic minerals in construction, with a focus on material flows, involves a joint examination of stocks, and reviews thirty-one scientific publications. These studies serve various purposes, including predicting future input and output flows, comparing them, assessing the current and future stock and its evolution, and analyzing urban metabolism in terms of flows and stocks. The studies are conducted at national, regional, or urban levels, with durations ranging from one year to a century. [20] Agent-based transportation systems allow distributed subsystems to work together in managing traffic and controlling tasks, all Drawing from real-time traffic data, a notable example a distributed dilemma network is the Distributed Traffic Management Testbed. Recent discussions have highlighted motion traffic and transportation applications. Approaches and methods from agent systems Multi-agent systems (MAS) are extensively applied across various transportation fields, such as Drawing from real-time traffic data, a notable example. [21] Choosing the appropriate mining method for mineral extraction is a challenging task for mining engineers. If the wrong method is selected, it can lead to significant economic losses. In this study, two multi-attribute decision-making techniques, WPM and PROMETHEE, were applied to bauxite The results indicate that these techniques propose a more efficient mining method mineral extraction. By applying the proposed methods, the optimal mining technique selected was conventional cut and fill, while bench mining was identified as the least effective method. [22] Xerox 9700 laser printers produce an average of 1 million pages per machine. By now, the term "desktop publishing" has become widely recognized as the process of Using personal computer tools, it generates documents with near typesetting quality. However, the term "desktop publishing" can be misleading, as the equipment doesn't directly "publish" documents from the desktop. Rather, it facilitates the creation of professionally typed and printed documents, with all necessary equipment fitting on a typical office desk. With a printer, anyone can produce "published" documents using desktop publishing tools. [23] Anastaselos et al. introduced A newly developed decision support system has been created for the comprehensive evaluation Thermal insulation solutions with an emphasis on recycling. This tool supports advanced end-of-life management for thermal insulation options, which are assessed to determine and select the most optimal choice. [24] The proposed sensitivity analysis complements the approach The two methods, developed by Masuda, can be applied together. Masuda's approach focuses on analyzing one vector at a time, while the proposed method centers on individual judgments. Additionally, Arm cast and Hosseini (1994) introduced a procedure to identify the most important criterion in a single-stage hierarchical AHP problem. However, their study did not specifically address the small change in the current weight of a criterion that would be needed to alter the ranking of the existing alternatives. [25] Building successful homes and communities requires essential elements such as thoughtful planning, collaboration, and a focus on long-term sustainability address affordability and sustainability simultaneously. Affordable housing alone cannot ensure the well-being of families and communities; it must also be of decent quality—clean, safe, and situated in environments that offer Providing easy access to employment opportunities, essential services, and public transportation, while ensuring that affordable housing is both environmentally sustainable and socially equitable is crucial for achieving both efficiency and fairness. [26] This pilot study involved eight participants, all of whom were male graduate students in computer science. While the sample size was small, the continuous-measures design of the experiment helped reduce the influence of individual differences on data analysis. Among the participants, three had no prior experience with texting, three sent one to five messages per week, and two sent more than five messages per week. Each participant received training in the techniques before performing the experimental tasks. [27] Selecting a Finding a place to live can be a complex task for many individuals due to the numerous factors to consider. These include price, land and building size, number of bedrooms, security services, proximity to major roads, commute distance to work, and access to the community amenities all play a role. Additionally, some of these criteria conflict with others—for instance, the trade-off between price and house size. Generally, larger houses tend to be more expensive, yet people often seek larger homes at the lowest possible cost. This process represents a decision-making challenge

 

involving multiple criteria or attributes. [28] This paper presents a comparison Decision-making schemes for vertical handover in heterogeneous wireless networks. The study focuses on monitoring these schemes to minimize processing delays and ensure reliable handover decisions. We proposed using SAW and WPM decision-making methods to select the optimal network from the observed networks for vertical handover decision schemes. The performance of the decision-makers was evaluated based on the associated standard deviation, with WPM identified as the superior method. The primary objective is to enhance the decision phase of the handover process, determining the most suitable VN to connect the mobile terminal while reducing processing delays through various decision algorithms. [29] This tool generates multiple design options for creating envelopes based on specific parameters, streamlining work time, enhancing confidence in the chosen solution, and enabling swift exploration of alternatives. Anastaselos et al. developed a decision support system for the comprehensive evaluation of thermal insulation solutions, with an emphasis on recycling. The system enhances end-of-life management for thermal insulation and assists in selecting the most suitable option for each building element during the design phase of new construction. In a similar vein, Zheng et al. introduced an advanced ash-related prediction method to identify the best building envelope alternative. [30]

## 3. RESULTS AND DISCUSSION

**TABLE 1.** Nursing students

| | CCES | APRS | PCA | PCS |
|---|---|---|---|---|
| LNE | 13.45 | 279.34 | 46.87 | 94.14 |
| NT | 57.84 | 574.87 | 12.53 | 73.82 |
| FNP | 98.32 | 280.53 | 97.42 | 82.83 |
| SN | 85.12 | 759.26 | 56.83 | 69.37 |
| AN | 56.38 | 675.83 | 79.32 | 28.53 |

Table 1 displays the data for nursing students evaluated using the WPM (Weighted Product Model) method across four areas: clinical competency, academic competency, patient care, and professionalism and communication skills. The "future nursing professionals" category exhibits strong performance in clinical competency and patient care, highlighting their proficiency in these areas. "Nursing education learners" score well in professionalism and communication, indicating an emphasis on these skills. "Aspiring nurses" have lower scores in professionalism, suggesting room for improvement in communication and conduct. The data shows notable differences in the students' skill levels across various competencies.

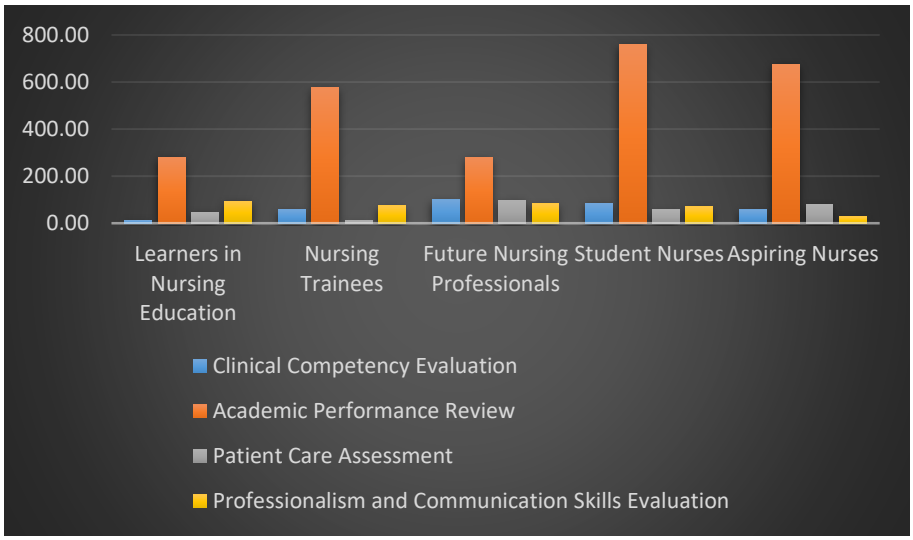


**FIGURE.1** Nursing students

Figure 1 illustrates the ratings of nursing students using the WPM method across four criteria. "Future nursing professionals" perform strongly in clinical competence and patient care, while "nursing education graduates" excel in expertise. However, "nursing practitioners" and "aspiring nurses" score lower in patient care and professionalism, highlighting areas for improvement.

**TABLE 2.** Performance value

| | Performance value | | | |
|---|---|---|---|---|
| LNE | 0.13680 | 0.36791 | 0.26734 | 0.30306 |
| NT | 0.58828 | 0.75715 | 1.00000 | 0.38648 |
| FNP | 1.00000 | 0.36948 | 0.12862 | 0.34444 |
| SN | 0.86574 | 1.00000 | 0.22048 | 0.41127 |
| AN | 0.57343 | 0.89012 | 0.15797 | 1.00000 |

Table 2 displays the performance values of nursing students assessed using the WPM method across four criteria. "Nursing practitioners" achieve the highest performance in patient care, with a perfect score of 1.0. "Future nursing professionals" excel in clinical competence, also scoring 1.0, while "nursing nurses" rank highest in professionalism. "Nursing education learners" show balanced but lower performance across all areas, while "student nurses" demonstrate strong performance in academic review and clinical competence. Overall, the table highlights the diverse strengths and areas for improvement among the different student groups.

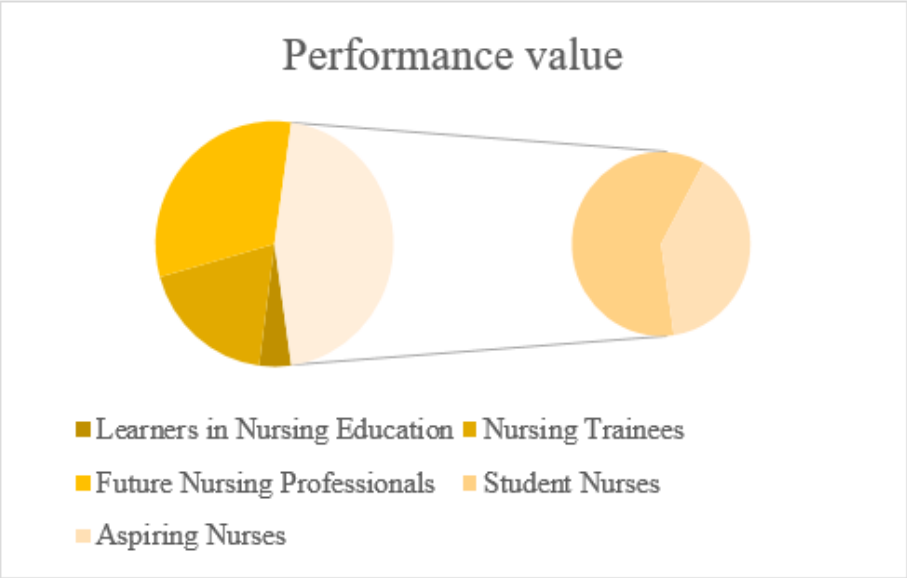


**FIGURE.2** Performance value

Figure 2 illustrates the performance values of different nursing student groups assessment criteria using the WPM method. "Nursing practitioners" achieve a perfect score of 1.0 in patient care, while "future nursing professionals" excel in clinical competence. "Nursing nurses" show strong professionalism, and other categories display varying performance levels.

**TABLE 3.** Weight

| | Weight | | | |
|---|---|---|---|---|
| LNE | 0.25 | 0.25 | 0.25 | 0.25 |
| NT | 0.25 | 0.25 | 0.25 | 0.25 |
| FNP | 0.25 | 0.25 | 0.25 | 0.25 |
| SN | 0.25 | 0.25 | 0.25 | 0.25 |
| AN | 0.25 | 0.25 | 0.25 | 0.25 |

Table 3 displays the equal distribution of weights for different nursing student groups using the WPM method across four assessment criteria. Each criterion—clinical competence, academic competence, patient care, and professionalism—is assigned an equal weight of 0.25 for all groups. This indicates a balanced evaluation approach, where each aspect of performance is regarded as equally important.

**TABLE 4.** Weighted normalized decision matrix

| | Weighted normalized decision matrix | | | |
|---|---|---|---|---|
| LNE | 0.60816 | 0.77882 | 0.71906 | 0.74196 |
| NT | 0.87578 | 0.93281 | 1.00000 | 0.78846 |
| FNP | 1.00000 | 0.77965 | 0.59886 | 0.76609 |
| SN | 0.96460 | 1.00000 | 0.68524 | 0.80082 |
| AN | 0.87020 | 0.97132 | 0.63044 | 1.00000 |

Table 4 presents the weighted normalized decision matrix for various groups of nursing students, calculated using the WPM method. The matrix shows normalized performance values across four assessment criteria. Nursing trainees and student nurses generally perform well across most criteria, with nursing trainees excelling in patient care. Future nursing professionals excel in clinical competence, while aspiring nurses stand out in professional and communication skills. This table highlights the strengths and areas for improvement for each group, offering valuable insights to guide focused interventions in nursing education. Overall, the performance of each group is adjusted based on the weighted criteria.

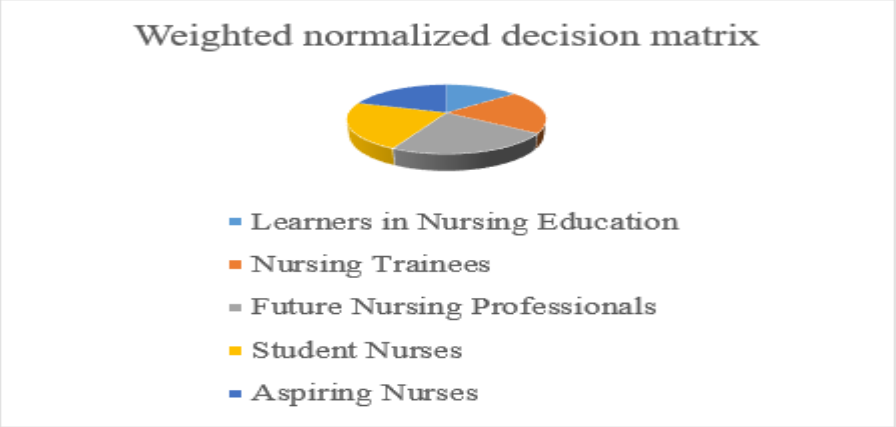


**FIGURE 3.** Weighted normalized decision matrix

Figure 3 displays the weighted normalized decision matrix, which offers adjusted performance values for each group across different criteria. This matrix provides a thorough analysis comparison of the groups, considering the relative importance of each criterion and ensuring that the results are normalized for a fair evaluation for various nursing student groups, assessed using the WPM method. Nursing trainees demonstrate top performance in patient care, while future nursing professionals excel in clinical competence. Aspiring nurses outperform in professionalism and communication skills, with student nurses and nursing education learners showing balanced performance across all criteria. These findings offer valuable insights into the strengths and weaknesses of each group, helping to guide targeted educational improvements.

**Table.5** Preference score, Rank

| | **Preference Score** | **Rank** |
|---|---|---|
| LNE | 0.25270 | **5** |
| NT | 0.64413 | **1** |
| FNP | 0.35769 | **4** |
| SN | 0.52933 | **3** |
| AN | 0.53287 | **2** |

Table 5 presents the preference scores and rankings of different nursing student groups according to the WPM method. Nursing trainees, it achieved first place with the highest preference score of 0.64413 demonstrating strong performance across the assessed criteria. Aspiring nurses ranked second with a score of 0.53287, followed by student nurses in third with a score of 0.52933. Future nursing professionals and nursing education learners ranked

fourth and fifth, with preference scores of 0.35769 and 0.25270, respectively. These rankings offer valuable insights into the overall performance and pinpoint areas where each group can improve.

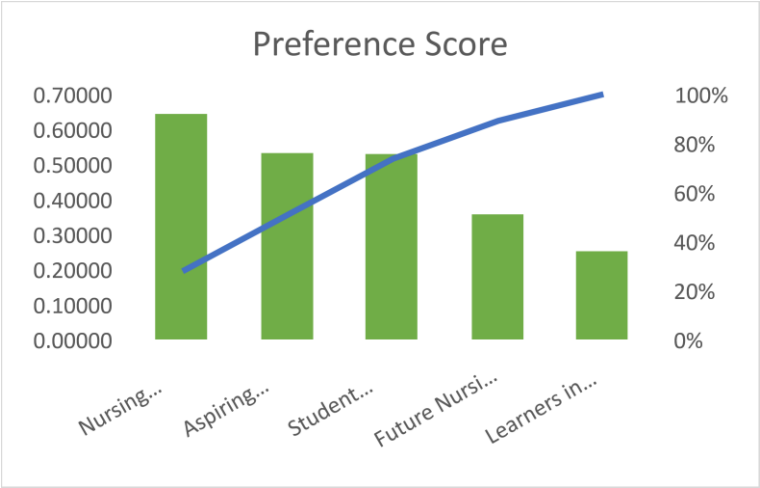


**FIGURE 4.** Preference score

Figure 4 displays the different optional scores nursing student groups based on the WPM method. Nursing trainees achieved the highest score of 0.64413, indicating their superior overall performance compared to the other groups. Aspiring nurses came second with a score of 0.53287, student nurses achieved 0.52933. Future nursing professionals and nursing education graduates scored 0.35769 and 0.25270, respectively, indicating relatively lower performance across the assessed criteria

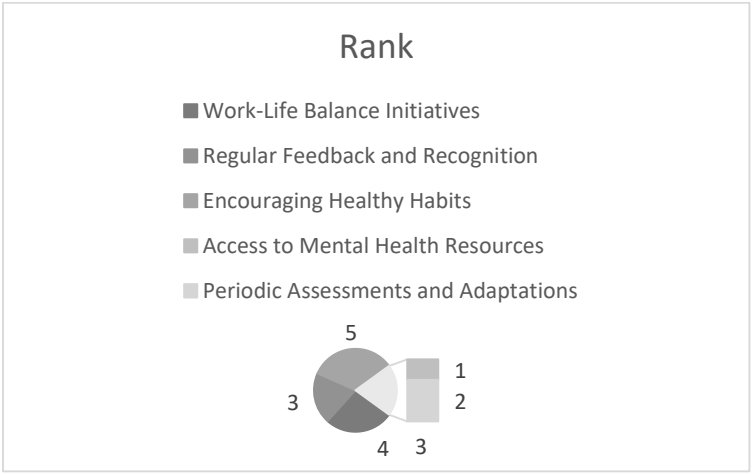


**FIGURE 5.** Rank

Figure 5 presents the ranking of nursing students groups according to the WPM method. Nurse practitioners secured the top rank, demonstrating high performance, while aspiring nurses ranked second. Student nurses were ranked third, future nursing professionals ranked fourth, and nursing education graduates ranked fifth, reflecting their comparatively lower performance.

## 4. CONCLUSION

The study utilized the Weighted Product Model (WPM) method to assess various groups of nursing students across four key criteria: clinical competence, academic competence, patient care, and professional and communication skills. The findings highlighted significant differences in performance among the groups, offering valuable insights for nursing education and professional development. Nursing trainees performed the best, with the highest priority score of 0.64413 and ranking first overall. Their standout performance in patient care, where they achieved a perfect score of 1.0, indicates the effectiveness of their current training programs in preparing them for healthcare practice. Aspiring nurses and student nurses It ranked second and third with scores of 0.53287

and 0.52933, respectively. Aspiring nurses excelled in professional and communication skills, while student nurses performed strongly in academic evaluations. This indicates that the two groups, aspiring nurses and student nurses, possess distinct strengths that could be leveraged for peer learning and mutual support. While future nursing professionals ranked fourth (0.35769), their performance was notably strong in clinical competence, suggesting proficiency in practical skills. However, there is potential for improvement in other areas, particularly patient care, where their scores were lower. Learners in nursing education, ranked fifth (0.25270), displayed consistent but lower performance across all assessment criteria, pointing to the need for enhanced support and targeted interventions during the initial stages of their training. The equal weighting of all assessment criteria (0.25) ensured a comprehensive and fair evaluation, highlighting the importance of clinical skills, academic knowledge, patient care, and professional conduct. These findings offer valuable insights for refining nursing education and professional development strategies.

## REFERENCES


[1]. Henderson, Amanda, Marie Cooke, Debra K. Creedy, and Rachel Walker. "Nursing students' perceptions of learning in practice environments: A review." Nurse education today 32, no. 3 (2012): 299-302.

[2]. Oner Altiok, Hatice, and Besti Ustun. "The Stress Sources of Nursing Students." Educational Sciences: Theory and Practice 13, no. 2 (2013): 760-766.

[3]. Labrague, Leodoro J., Denise M. McEnroe-Petitte, Donna Gloe, Loretta Thomas, Ioanna V. Papathanasiou, and Konstantinos Tsaras. "A literature review on stress and coping strategies in nursing students." Journal of mental health 26, no. 5 (2017): 471-480.

[4]. Rew, Lynn, Heather Becker, Jeff Cookston, Shirin Khosropour, and Stephanie Martinez. "Measuring cultural awareness in nursing students." Journal of Nursing Education 42, no. 6 (2003): 249-257.

[5]. Leung, Sau Fong, Esther Mok, and Daniel Wong. "The impact of assessment methods on the learning of nursing students." Nurse education today 28, no. 6 (2008): 711-719.

[6]. Nilsson, Kerstin EL, and Margareta I. Warrén Stomberg. "Nursing student's motivation toward their studies–a survey study." BMC nursing 7 (2008): 1-7.

[7]. Beauvais, Audrey M., Noreen Brady, Eileen R. O'Shea, and Mary T. Quinn Griffin. "Emotional intelligence and nursing performance among nursing students." Nurse education today 31, no. 4 (2011): 396-401.

[8]. Kaphagawani, Nanzen C., and Ushotanefe Useh. "Analysis of nursing students learning experiences in clinical practice: Literature review." Studies on Ethno-Medicine 7, no. 3 (2013): 181-185.

[9]. Bisholt, Birgitta, Ulla Ohlsson, Agneta Kullén Engström, Annelie Sundler Johansson, and Margareta Gustafsson. "Nursing students' assessment of the learning environment in different clinical settings." Nurse education in practice 14, no. 3 (2014): 304-310.

[10]. Gibbons, Chris, Martin Dempster, and Marianne Moutray. "Stress, coping and satisfaction in nursing students." Journal of advanced nursing 67, no. 3 (2011): 621-632.

[11]. Pulido-Martos, Manuel, José M. Augusto-Landa, and Esther Lopez-Zafra. "Sources of stress in nursing students: a systematic review of quantitative studies." International Nursing Review 59, no. 1 (2012): 15-25.

[12]. Jimenez, Cristobal, Pilar Martínez Navia-Osorio, and Carmen Vacas Diaz. "Stress and health in novice and experienced nursing students." Journal of advanced nursing 66, no. 2 (2010): 442-455.

[13]. Bartlett, Michelle L., Heidi Taylor, and J. Dirk Nelson. "Comparison of mental health characteristics and stress between baccalaureate nursing students and non-nursing students." Journal of Nursing Education 55, no. 2 (2016): 87-90.

[14]. Rew, Lynn, Heather Becker, Jeff Cookston, Shirin Khosropour, and Stephanie Martinez. "Measuring cultural awareness in nursing students." Journal of Nursing Education 42, no. 6 (2003): 249-257.

[15]. Rao, Ch Maheswara, and K. Venkatasubbaiah. "Application of WSM, WPM and TOPSIS Methods for the Optimization of Multiple Responses." International journal of hybrid information technology 9, no. 10 (2016): 59-72.

[16]. Chourabi, Zouhour, Faouzi Khedher, Amel Babay, and Morched Cheikhrouhou. "Multi-criteria decision making in workforce choice using AHP, WSM and WPM." The Journal of the Textile Institute 110, no. 7 (2019): 1092-1101.

[17]. Kawashima, Asako, and Marcia A. Petrini. "Study of critical thinking skills in nursing students and nurses in Japan." Nurse education today 24, no. 4 (2004): 286-292.

[18]. Jain, Vineet, and Tilak Raj. "Evaluation of flexibility in FMS using SAW and WPM." Decision Science Letters 2, no. 4 (2013): 223-230.

[19]. Chinnasay, Sathiyaraj, M. Ramachandran, and Vimala Sravanan. "Analysis of Blast Resistant Buildings using the WPM Method." REST Journal on Emerging trends in Modelling and Manufacturing 9, no. 1 (2023): 26-36.

[20]. Raja, Chandrasekar, M. Ramachandran, Prabakaran Nanjundan, and Jaganathan Rajamanickam. "Fundamentals of Construction Materials and Types of Building Using WPM Method."


 

[21]. Chinnasamy, Sathiyaraj, M. Ramachandran, Sangeetha Rajkumar, and Chinnasami Sivaji. "A survey on Transportation System Using the WPM method." (2023).
[22]. Balusa, Bhanu Chander, and Jayanthu Singam. "Underground mining method selection using WPM and PROMETHEE." Journal of the Institution of Engineers (India): Series D 99 (2018): 165-171.
[23]. Kown, In-Soo, and Yeong-Mi Seo. "Nursing students' needs for clinical nursing education." The Journal of Korean Academic Society of Nursing Education 18, no. 1 (2012): 25-33.
[24]. Zavadskas, Edmundas Kazimieras, Jurgita Antucheviciene, Jonas Šaparauskas, and Zenonas Turskis. "Multi-criteria assessment of facades' alternatives: peculiarities of ranking methodology." Procedia Engineering 57 (2013): 107-112.
[25]. Triantaphyllou, Evangelos, and Alfonso Sánchez. "A sensitivity analysis approach for some deterministic multi-criteria decision-making methods." Decision sciences 28, no. 1 (1997): 151-194.
[26]. Mulliner, Emma, Naglis Malys, and Vida Maliene. "Comparative analysis of MCDM methods for the assessment of sustainable housing affordability." Omega 59 (2016): 146-156.
[27]. Butts, Lee, and Andy Cockburn. "An evaluation of mobile phone text input methods." In ACM International Conference Proceeding Series, vol. 20, pp. 55-59. 2002.
[28]. Supriyono, Heru, and Chintya Purnama Sari. "Developing decision support systems using the weighted product method for house selection." In AIP conference proceedings, vol. 1977, no. 1. AIP Publishing, 2018.
[29]. Savitha, K., and C. Chandrasekar. "Vertical Handover decision schemes using SAW and WPM for Network selection in Heterogeneous Wireless Networks." arXiv preprint arXiv:1109.4490 (2011).
[30]. Rana, Shilpesh C., and Jayantilal N. Patel. "Selection of best location for small hydro power project using AHP, WPM and TOPSIS methods." ISH journal of hydraulic engineering 26, no. 2 (2020): 173-178.

 