OPEN ACCESS

Orapuh Journal

ORIGINAL ARTICLE

Journal of Oral & Public Health

Strategies to enhance nurse educator–student interaction in the higher education classroom environment: A Limpopo Province study

Mathevula, R. F., & Mathebula, L.

Sefako Makgatho Health Sciences University, Molotlegi Street, Ga-Rankuwa, South Africa

ARTICLE INFO

Received: *24 November 2025*
Accepted: *01 March 2026*
Published: *19 March 2026*

Keywords:
Strategies, nurse educators, student nurses, interaction, higher education, classroom environment

Peer-Review: *Externally peer-reviewed*

Correspondence to:
Dr. Rirhandzu Friddah Mathevula
rirhandzu.mathevula@smu.ac.za

To cite:
Mathevula, R. F., & Mathebula, L. (2026). Strategies to enhance nurse educator–student interaction in the higher education classroom environment: A Limpopo Province study. *Orapuh Journal, 7*(2), e1417 https://dx.doi.org/10.4314/orapj.v7i2.17

ISSN: *2644-3740*

Published by Orapuh, Inc. (info@orapuh.org)

Editor-in-Chief: Prof. V. E. Adamu
Orapuh, F. Gaye R., Sukuta, Greater Banjul, The Gambia, editor@orapuh.org.

ABSTRACT

Introduction

The effectiveness of nurse education largely depends on meaningful engagement between nurse educators and student nurses in the classroom environment. Positive classroom interaction supports active learning, improves knowledge acquisition, and promotes the development of critical thinking abilities essential for professional nursing practice.

Purpose

The study aimed to explore strategies to enhance interaction between nurse educators and novice student nurses within the higher education classroom environment in Limpopo Province.

Methods

A qualitative descriptive design was employed. Three nurse educators were selected using purposive sampling, and data were collected through in-depth, face-to-face semi-structured interviews. A sample of 25 student nurses was selected using stratified random sampling and participated in focus group discussions. The group consisted of 10 males and 15 females. Data analysis was guided by Tesch's method, a systematic eight-step qualitative data analysis process commonly used in nursing research to identify themes from textual interview data.

Results

The findings revealed three key factors influencing educator–student classroom interaction: the classroom environment, teaching methods, and educator attitudes. Students reported that overcrowded classrooms hindered concentration, questioning, and meaningful interaction. They preferred active and participatory approaches—such as case studies, group discussions, and problem-based learning—over traditional lectures. Educator approachability, respect, and the creation of a safe learning space were considered critical. One student noted that being listened to made them feel valued and encouraged positive interaction. Using Peplau's Theory, the study identified building trust and safety, promoting collaborative knowledge exchange, and fostering independence and reflection as key strategies for enhancing educator–student classroom interaction.

Conclusion

A key recommendation is that nursing programmes should limit class sizes in foundational courses to a maximum of 40 students and implement structured training for educators in interactive, student-centred teaching approaches to improve classroom interaction and overall learning quality.

INTRODUCTION

High-quality interactions between nurse educators and student nurses are fundamental to effective nursing education, as they foster greater student engagement, academic achievement, clinical competence, professional identity formation, self-confidence, and retention in nursing programmes (Opoku-Danso et al., 2025). Purposeful educator–student engagement has been shown to strengthen academic outcomes, critical thinking, readiness for clinical practice, and active learning, particularly when supported by pedagogical approaches such as team-based learning, flipped classrooms, gamification, and digital tools that encourage dialogue and collaboration (Binoy, 2024; Duong Thi Ngoc et al., 2024; Hamid et al., 2025; Jadhav et al., 2025; Kassab, 2024; Steele, 2024).

However, the quality of these interactions is heavily influenced by the classroom environment, which in many settings is constrained by large class sizes, insufficient faculty, limited teaching resources, and sociocultural factors that affect student participation and engagement (Chan & Smith, 2024; da Silva & Mitchell, 2024; De Gagne et al., 2025; Moropa et al., 2025; Rosario, 2023; Sobhy Abo El-Yazid & Glaze, 2023).

In South Africa, public nursing programmes play a key role in producing nurses, particularly in rural provinces such as Limpopo, where institutions are responsible for training large cohorts of students under conditions of limited resources (Poto-Rapudi, 2025). At the University of Venda, for example, the phased-out R425 nursing programme had an approved first-year intake of 90 students. This programme has been replaced by the R174 Bachelor of Nursing and Midwifery programme with an intake of 60 students and the R171 Diploma in Nursing with an intake of 30 students. Both programmes share the same physical infrastructure and are delivered by a small team of approximately seven staff members responsible for teaching first-year students, a staffing and resource situation that was comparable at the time this study was conducted. Furthermore, the inclusion of repeating students further increases class sizes, while classroom facilities remain insufficient and limited in capacity to accommodate the growing number of learners (University of Venda, 2024).

Nationally, a shortage of 323 nurse educator posts has been reported, a deficit that is particularly acute in rural provinces such as Limpopo and negatively affects the quality of teaching, clinical supervision, and educator–student interaction (South African Nursing Council, 2023). Within this context, traditional lecture-based teaching often restricts meaningful dialogue and active student participation. Additionally, systemic challenges such as high student-to-educator ratios, limited preparation time, and inadequate training in innovative teaching methods hinder the implementation and sustainability of evidence-based interaction strategies (da Silva & Mitchell, 2024; Moropa et al., 2025; Steele, 2024).

Although there is growing evidence supporting strategies such as team-based learning, flipped classrooms, and gamification, there remains limited understanding of which approaches are most effective and feasible for improving direct nurse educator–student interaction in Limpopo's resource-constrained, large-cohort classroom settings, where many classes exceed 80 students and teaching materials are scarce. This study therefore seeks to address this gap by exploring, from the perspectives of both nurse educators and student nurses, the practical strategies that enhance their direct interaction in the classroom within Limpopo's higher education nursing environment.

By focusing on a rural, under-resourced province characterized by large student cohorts and educator shortages, the study generates locally grounded qualitative evidence regarding which interaction strategies are perceived as most feasible and impactful under real-world South African classroom conditions. The findings may inform the development of contextually appropriate teaching practices and policy in nursing education.

Theoretical Framework

This study was guided by Hildegard Peplau's Interpersonal Relations Theory, as cited in Peterson and Bredow (2009). Originally formulated for clinical nursing practice, the theory has been adapted for nursing education to strengthen interactions between nurse educators and student nurses in the classroom environment.

The theory delineates four sequential phases: orientation, which establishes trust and psychological safety; identification and exploitation, which represent the

working phases centred on collaborative knowledge exchange; and resolution, which fosters independence and reflection while positioning the nurse educator as a facilitator of learning. By emphasizing relational teaching, the theory promotes empathy, mutual respect, student engagement, and professional identity formation. These principles align closely with modern student-centred and interactive pedagogical approaches (Bhardwaj et al., 2025).

METHODS

Study Design

This study employed a qualitative contextual design to explore strategies for enhancing interaction between nurse educators and student nurses within the classroom environment. This approach enabled the collection of detailed, contextually grounded data and facilitated a deeper understanding of participants' lived experiences and perceptions in their natural setting, thereby informing practical improvements in classroom practice (Gray et al., 2020; Villamin, 2024).

Population and Sampling

The target population consisted of all first-year student nurses enrolled in the four-year nursing degree programme under Regulation R425 of 1985, together with the nurse educators responsible for their classroom instruction.

This study employed stratified random sampling to select a heterogeneous sample of first-year student nurse neophytes, ensuring representation across key demographic subgroups. Stratified random sampling involves dividing a population into relatively homogeneous subgroups, or strata, and then drawing random samples from each stratum in proportion to their representation in the population (Creswell & Creswell, 2021).

In this study, the population of first-year student nurses was stratified by gender (male and female), as gender may influence classroom experiences and interaction dynamics in nursing education. From a total of 40 first-year students who consented to participate, stratified random selection yielded a final sample of 25 participants, comprising 10 males and 15 females.

The random selection process was conducted as follows. A total of 40 cards were prepared, numbered from 1 to 40, with 25 cards labelled "yes" and 15 labelled "no" on the reverse side. Separate sampling boxes were created for each stratum. The male stratum box contained 10 "yes" and 5 "no" cards, while the female stratum box contained 15 "yes" and 10 "no" cards. Each student was invited to draw one card from the box corresponding to their gender stratum; only those who selected a card marked "yes" were included in the study. This procedure ensured that every student within their respective stratum had an equal and known probability of being selected, thereby satisfying the requirements of probability sampling (Polit & Beck, 2021).

A purposive sampling strategy was used to select three experienced nurse educators responsible for teaching first-year student nurses. Educators who participated in the pilot study were excluded to minimise response bias and ensure the inclusion of new perspectives. This small, information-rich sample aligns with qualitative research recommendations that emphasize depth of insight and data saturation rather than statistical generalisability (Beresford & Wutich, 2025).

Data Collection

Data collection commenced after obtaining ethical approval, departmental permission from the Department of Advanced Nursing Science at the University of Venda, and written informed consent from all participants.

A pilot study was conducted with six student nurses and two nurse educators to test the semi-structured interview guide. The interviews centred on the primary question:

"What strategies can enhance nurse educator and student nurse interaction in the classroom environment?"

This question was supported by three sub-questions exploring:

1. Classroom environment strategies
2. Teaching strategies that promote interaction
3. Educator–student attitudes and behaviours that support interaction

Probing and reflective techniques were used extensively with student nurses to deepen responses, while nurse educators provided more focused responses within the allotted interview time. No modifications to the interview guide were required following the pilot study.

Data were collected through focus group discussions (FGDs) with student nurses and individual in-depth interviews with nurse educators. Two FGDs were conducted: one with 10 male students and another with 15 female students. Both groups were interviewed on the same day at different times in a quiet skills laboratory within the Department of Advanced Nursing Science at the University of Venda. The second group waited outside the venue to maintain confidentiality and prevent cross-group influence.

Each focus group discussion was treated as a single unit of analysis from which the main theme and three categories related to nurse educator–student interaction emerged.

Three individual semi-structured interviews were conducted with nurse educators: two on one day and the third on another day, in a lecturer's office at the University of Venda. All interviews were audio-recorded with participants' informed consent, and detailed field notes were taken during and after each session to document non-verbal cues and contextual observations.

Data Analysis

Data were analysed using Tesch's (1990) eight-step approach to qualitative data analysis, a systematic inductive process that involves repeated reading of transcripts, line-by-line coding of meaningful text segments, grouping codes into categories, and developing broader themes (Nowell et al., 2024).

Data analysis was conducted manually by the researcher without the use of qualitative data analysis software in order to maintain close engagement with the data. Audio-recorded interviews were transcribed verbatim, and transcripts were printed with wide margins to allow space for coding notes. Each transcript was read multiple times to ensure immersion in the data.

Descriptive codes were assigned to meaningful segments of text and subsequently grouped into categories, which were then refined into broader themes related to strategies for enhancing nurse educator–student interaction in the classroom environment.

Each interview question initially generated categories, and subcategories emerged from recurring ideas and patterns within participants' responses. To enhance trustworthiness, the coding process was verified through double coding and consultation with the study supervisor, who is experienced in qualitative research. A subset of transcripts was independently coded by the supervisor, after which both coders compared codes, discussed discrepancies, and reached consensus on the final coding framework.

Trustworthiness

The trustworthiness of the study was established using Lincoln and Guba's (1985) criteria of credibility, transferability, dependability, and confirmability, within the broader framework for qualitative research quality proposed by Polit and Beck (2021).

To enhance credibility, member checking was conducted following thematic analysis. Participants received a written summary of the main categories, subcategories, and illustrative quotations in hard copy. They were invited to review whether the findings accurately reflected their experiences and to suggest corrections or clarifications.

Participants were initially given 10 working days to respond; however, this period was extended to 15 days for student participants due to academic assessment commitments. Of the 12 participants contacted, nine provided feedback, and no discrepancies were identified; therefore, no changes were made to the categories or subcategories. Credibility was further strengthened through data triangulation, using focus group discussions with students and individual interviews with nurse educators.

To ensure dependability, an inter-coder agreement process was followed. The researcher and study supervisor independently coded transcripts, compared coding decisions, discussed discrepancies, and agreed on a final coding framework that was consistently applied across all transcripts.

Transferability was supported through rich, contextual descriptions of the research setting and comprehensive audio-recorded data, enabling readers to determine the applicability of findings to similar contexts.

Confirmability was strengthened through a supervisor audit of selected participant quotations, ensuring that themes and categories were grounded in the data rather than researcher bias.

Ethical Considerations

The study was guided by the ethical principles outlined in The Belmont Report (National Commission for the Protection of Human Subjects of Biomedical and Behavioural Research, 1979), which emphasizes the protection and respect of research participants.

Principle of Respect for Persons

This principle protects participants' dignity and autonomy and supports their right to make informed decisions throughout the research process (National Commission for the Protection of Human Subjects of Biomedical and Behavioural Research, 1979).

Participants were clearly informed about the purpose of the study, research procedures, potential risks, and anticipated benefits. Participation was entirely voluntary, and participants were informed that they could withdraw at any time without penalty. Written informed consent was obtained from all participants. The researcher upheld scientific integrity by ensuring accurate data recording and by avoiding fabrication or falsification of information.

Principle of Beneficence

The principle of beneficence requires researchers to minimise potential harm while maximising possible benefits to participants. Psychological risks were minimized by conducting interviews in private settings and allowing participants to decline answering any questions they found uncomfortable. Participation remained strictly voluntary, and no form of exploitation occurred. Ethical oversight was ensured through approval from the relevant institutional review board.

Principle of Justice

The principle of justice requires fairness in participant selection and the equitable protection of participant rights. In this study, fairness was maintained by providing equal opportunity for participation and safeguarding participant privacy.

All identifying information was removed and replaced with codes or numbers. Data were stored securely and accessed only by authorised members of the research team. These procedures ensured confidentiality and anonymity throughout the research process.

RESULTS

This section presents the demographic characteristics of the participants and the findings obtained from focus group discussions and in-depth interviews. **Table 1** summarises the demographic profile of the three participant groups in terms of gender, age, number of participants, and the sampling and data collection methods used.

Table 1:
Summary of Participants Interviewed

Type of Participants	Sampling Method	Gender	Age (Years)	Number	Data Collection Method
Students	Stratified random sampling	Male	17–25	10	Focus group discussion
Students	Stratified random sampling	Female	18–27	15	Focus group discussion
Nurse educators	Purposive sampling	Female	40–46	3	In-depth interview
Total participants				**28**	

Table 2:
Summary of Findings

Theme	Categories	Subcategories
Strategies promoting nurse educator–student interaction in the classroom environment	Classroom environment enhances interaction	Large, clean, well-ventilated, and air-conditioned classrooms; well-furnished classrooms; accommodating, tolerating, and managing different personalities
	Teaching strategies enhancing interaction	Group discussions; role play; presentations; case studies; problem-based learning; giving feedback
	Attitudes and behaviour of educators and students	Being approachable, welcoming, and accommodating; showing respect toward everyone; openness and transparency; positive criticism; maintaining a pleasant and welcoming demeanour; good communication skills

Table 2 presents the main theme, categories, and subcategories that emerged from the data on strategies to enhance nurse educator–student interaction in the classroom environment. The three categories are discussed below, supported by illustrative participant responses.

Classroom Environment Promoting Interaction

Participants indicated that effective interaction depends on a large, clean, well-ventilated, and air-conditioned classroom that is well furnished and free from excessive noise, with a comfortable temperature. They emphasized that the physical learning environment should be welcoming and conducive to learning. In addition,

establishing clear ground rules for classroom conduct was identified as an important factor in creating a respectful and interactive learning space.

Selected participant responses included the following:

P1, FG1:
"The room should be big enough to accommodate all of us students without squeezing inside."

P3, FG1:
"I support my fellow student; an overcrowded classroom is not good for interaction."

P4, FG2:
"The classroom should be well ventilated and clean to allow us to relax when interacting with our educators."

P7, FG1:
"I think a big class should also have enough chairs and desks for us to use when coming to class."

P10, FG1:
"Sometimes one cannot concentrate fully when you are not comfortable, and it affects our interaction."

P1, FG2:
"The environment must be calm and clean, and the temperature must be appropriate to the weather. It must be well ventilated."

P10, FG2:
"If our lecturers are nice, not arrogant toward students, and approachable, the learning environment becomes good."

P15, FG2:
"I was once discouraged from interacting with my educators after asking a question and being shut down."

P6, FG2:
"Educators who are approachable make us feel free in the classroom and encourage us to become more active."

P2, NE:
"I think we need to have classroom ground rules stipulating what is expected from us; we should also allow students to participate in formulating these rules."

P1, NE:
"A spacious classroom with an acceptable temperature promotes good interaction with our students. This can be achieved if air conditioners are installed in all classrooms."

P3, NE:
"A welcoming classroom environment promotes interaction. When students feel welcomed, they are free to interact with us as their educators."

Teaching Strategies Enhancing Interaction

Participants identified several effective teaching strategies that enhance classroom interaction, including group discussions, role plays, presentations, case studies, and problem-based learning. They also emphasised the importance of adequate teaching materials and visual aids, as well as concise and well-structured lessons, to support these strategies.

Active learning approaches were viewed as essential for promoting student participation and engagement, particularly when combined with timely and constructive feedback from educators.

Selected participant responses included:

P5, FG2:
"Group discussions, role plays, demonstrations, case studies, and presentations help us remember important information."

P9, FG2:
"When we are given roles to play as part of learning, there is no way to avoid participating, so you end up interacting with others."

P2, FG2:
"I would like to add that lessons should be short and preferably scheduled in the morning when students' concentration is still good. This helps us interact better with our educators."

P14, FG2:
"Presentations and group discussions helped me interact actively in class; I think they are very effective teaching methods."

P9, FG1:
"The learning institution should provide students with enough study materials and internet access to support teaching strategies such as problem-based learning."

P6, FG1:
"I think receiving positive feedback from our educators is a good way of promoting interaction."

P3, NE:
"I prefer using teaching strategies that involve active participation from learners, such as problem-based learning and providing feedback."

P1, NE:
"Group discussions, problem-based learning, and role plays are

very effective teaching strategies because they help educators identify areas where students need support."

P5, FG1:
"I found that problem-based learning and case studies worked best for me."

Attitudes and Behaviour of Nurse Educators and Students
Participants highlighted that attitudes and behaviours of both educators and students significantly influence classroom interaction. Positive attitudes such as respect, openness, empathy, and effective communication were identified as essential for creating a supportive learning environment. Conversely, negative attitudes were seen as barriers to effective interaction.

Selected participant responses included:

P12, FG2:
"The type of attitude that nurse educators display toward students can either spoil or promote interaction in the classroom."

P7, FG2:
"Sometimes it is not only the educators' attitude but also that of the students."

P3, FG2:
"Students and teachers must establish ground rules at the beginning of the class to guide their attitudes and behaviour."

P13, FG2:
"Another way to promote interaction in class is by being listened to and through openness and transparency from our educators."

P11, FG2:
"You are right; showing empathy comes from listening. How will someone know what you are going through if they do not listen?"

P4, FG1:
"If respect and honesty are included in the classroom ground rules, everyone will have to follow them."

P8, FG1:
"We have to exercise self-control and tolerance in life, especially in the classroom. Sometimes educators or students can provoke anger with their attitudes."

P2, FG1:
"Students' attitudes toward educators should be monitored so that appropriate interventions can be made when necessary."

P8, FG2:
"Yes, bad attitudes and behaviour should not be allowed in the classroom."

P1, NE:
"Respect and honesty are key for good interaction in the classroom."

P3, NE:
"Respect for one another – whether young or older – is necessary. Personal problems should be kept outside the classroom."

P2, NE:
"The way educators speak to students sends a message that can either enhance interaction or destroy it. Positive or negative attitudes influence classroom interaction."

DISCUSSION

Demographic Data

The demographic profile of the participants indicates a strong female predominance among both student nurses and nurse educators, consistent with national and global trends in the nursing profession. According to the South African Nursing Council (SANC, 2025), women constitute approximately 94% of the nursing workforce in South Africa, while men account for about 6%. This gender imbalance reflects the historical and sociocultural construction of nursing as a female-dominated caring profession. Persistent gender stereotypes continue to influence career choices despite formal gender equity in labour legislation (Baduge et al., 2024).

The student nurses in this study were aged 17–27 years, which is slightly broader than the typical higher education entry range of 17–19 years reported in South Africa (Department of Higher Education and Training [DHET], 2024; United Nations Educational, Scientific and Cultural Organization [UNESCO], 2024). This wider range may reflect delayed entry into higher education or extended schooling pathways; however, it remains consistent with international norms for direct entry from secondary education into university programmes. The nurse educators who participated were aged 40–46 years, reflecting a relatively experienced cohort within the teaching role.

Findings

The strategies identified to enhance interaction between nurse educators and student nurse neophytes in the classroom environment are discussed under three categories derived from the main theme. These findings are interpreted through the lens of Hildegard Peplau's Interpersonal Relations Theory, which guided the study.

Promoting educator–student interaction within nursing programmes facilitates student autonomy and encourages a commitment to lifelong learning, thereby supporting the development of skilled and confident nursing practitioners (Barranquero-Herbosa et al., 2022; De Gagne et al., 2021). Nursing education programmes that prioritize relational teaching alongside academic content delivery are therefore more likely to produce competent and compassionate nursing professionals (Agyare et al., 2025).

Classroom Environment Enhancing Interaction

Interpretation of Main Findings

The primary classroom environment strategy identified was the creation of a welcoming, well-resourced, and comfortable physical classroom that supports psychological safety and active interaction between nurse educators and student nurses. Participants described spacious classrooms, adequate ventilation, air conditioning, sufficient furniture, and cleanliness as essential features that contribute to physical comfort and psychological safety. Within Peplau's orientation phase, such conditions help establish trust, clarify expectations, and create a foundation for open communication. The physical classroom environment therefore acts as an active facilitator of interaction rather than merely a passive backdrop.

Comparison With Key Studies

These findings align with Zhang et al. (2025), who report that spacious, clean, well-ventilated, and air-conditioned classrooms enhance comfort and support effective learning and interaction. While Zhang et al. frame classroom comfort as a general condition for learning, the present study extends this understanding by demonstrating how these features directly influence educator–student interaction within the South African nursing education context. In settings characterised by overcrowding and limited infrastructure, adequate space, ventilation, and furniture become prerequisites for meaningful interaction rather than optional improvements.

Similarly, Ugwu et al. (2022) report that well-furnished classrooms with adequate seating and learning resources facilitate active participation and accommodate diverse learning needs. The present study supports this observation while highlighting a context-specific insight: in under-resourced institutions, basic provisions such as sufficient chairs and desks are essential for students to feel respected and included.

The findings also show that a positive classroom environment promotes inclusivity and psychological safety, particularly when managing diverse student personalities. This observation resonates with Mathevula (2019) and Sellers (2022), who emphasize that a supportive classroom climate fosters collaboration, safety, and engagement. However, while these studies focus primarily on educator interpersonal style, the current study demonstrates that physical classroom conditions also play a critical role in shaping this supportive climate.

Bhardwaj (2025) similarly argues that student-centred learning thrives in safe and inclusive environments that encourage collaboration and participation. The present findings support this argument but further suggest that, in resource-constrained settings, safety and inclusivity must explicitly include the physical environment. Without adequate space, ventilation, and furniture, even well-intentioned educators may struggle to foster inclusive interaction.

At the same time, the literature indicates that physical conditions alone are insufficient to guarantee effective interaction. Zhang et al. (2025) and Opoku-Danso et al. (2025) emphasize that educator interpersonal skills, teaching resources, and relational dynamics also influence interaction. The current study confirms this perspective by demonstrating the interdependence between environmental conditions and educator behaviours in shaping classroom interaction.

Mechanisms and Implications

These findings suggest that the physical classroom environment functions as both a relational and pedagogical enabler. In Peplau's orientation phase, a comfortable and

well-maintained environment helps students feel respected and psychologically safe, which supports trust and openness in educator–student relationships.

At an institutional level, these findings imply that improving classroom interaction requires more than changes in teaching methods or educator attitudes. The physical learning environment should also be recognised as a core component of the educational climate. In under-resourced nursing programmes, infrastructural improvements—such as adequate classroom space, ventilation, and furniture—should therefore be viewed as essential conditions for effective teaching and learning.

Teaching Strategies Enhancing Interaction

Interpretation of Main Findings

The principal teaching strategy identified for enhancing interaction was the intentional use of interactive, student-centred teaching methods, including group discussions, role play, presentations, teaching aids, problem-based learning, and constructive feedback. Participants reported that these strategies encourage engagement with course content, peers, and educators, thereby strengthening relationships and improving learning experiences.

Within Peplau's identification and exploitation phases, these teaching strategies enable students to recognise their learning needs and actively participate in the educational process.

Comparison With Key Studies

These findings align with research by Annesley et al. (2023) and Ghasemi (2020), which shows that innovative teaching strategies promote student engagement and critical thinking. However, while many studies emphasize technologically advanced approaches such as flipped classrooms or digital learning tools, the present study demonstrates the effectiveness of low-technology participatory methods in resource-constrained environments.

In the South African nursing education context, strategies such as group discussions, role play, and case studies can effectively facilitate interaction even where digital infrastructure is limited. Innovation in this setting therefore depends less on advanced technology and more on structured, participatory learning activities.

Other studies also report that interactive teaching methods promote engagement and critical thinking (Barranquero-Herbosa et al., 2022; Ghasemi, 2020). The present study extends these findings by highlighting that institutional support—such as adequate classroom space, time allocation, and access to basic teaching materials—is necessary for these strategies to be implemented effectively.

Mechanisms and Implications

Interactive teaching methods function as pedagogical tools that scaffold interaction by making learning visible and participatory. Within Peplau's framework, these methods support the identification phase, in which students recognise learning needs, and the exploitation phase, in which students actively engage with content and relationships.

These findings suggest that classroom interaction is shaped not only by educator personality but also by the teaching strategies employed and the conditions under which they are implemented. Consequently, sustainable improvement in interaction requires institutional support for student-centred pedagogy, including appropriate policies and resource allocation.

Attitudes and Behaviour of Nurse Educators and Students

Interpretation of Main Findings

The study identified the cultivation of positive, respectful, and open attitudes among both nurse educators and students as a critical strategy for promoting classroom interaction. Participants emphasised that educator approachability, transparency, constructive communication, and supportive body language encourage students to feel safe, ask questions, and actively engage in learning.

These attitudes function as foundational elements for interaction, as negative behaviours can create fear, mistrust, and power imbalances that hinder communication.

Comparison With Key Studies

The importance of educator approachability, respect, and positive communication has been widely documented in nursing education literature (Agyare et al., 2025; Clark, 2025; Zheng, 2025). The current study supports these findings while emphasising their particular importance in the South African nursing classroom context.

Simple behaviours such as smiling, listening attentively, and using an open tone of communication can act as powerful strategies for reducing anxiety and encouraging participation, particularly among students who may already feel marginalised.

Similarly, Chipeta and Hwang (2024) and Froneman (2023) report that caring interpersonal relationships and constructive feedback promote trust and mutual respect. The present study confirms these observations and further suggests that these qualities must be demonstrated consistently during everyday teaching interactions, not only during formal evaluation sessions.

Research also indicates that negative behaviours such as strictness, lack of openness, or poor communication may intimidate students and discourage participation (Milgate et al., 2025). The findings of this study support this perspective and suggest that such behaviours may lead to relational breakdowns that undermine the entire learning environment.

Mechanisms and Implications

Positive attitudes and behaviours function as relational gatekeepers that determine whether meaningful interaction can occur in the classroom. Within Peplau's identification phase, respectful communication and openness help students understand expectations and build collaborative relationships. During the resolution phase, these supportive relationships contribute to student confidence and independence.

These findings suggest that educator interpersonal style should be considered a central component of the pedagogical process. Institutions should therefore recognise relational teaching skills as an essential professional competency in nursing education.

Recommendations and Feasibility in Low-Resource Settings

Creating a Supportive Physical Classroom Environment

Nursing education institutions should prioritise the development of welcoming and comfortable classroom environments that support interaction. In low-resource settings, practical strategies may include ensuring adequate ventilation, maintaining classroom cleanliness, improving furniture availability, and utilising alternative spaces such as outdoor areas when classrooms are overcrowded.

These infrastructural improvements should be complemented by professional development initiatives aimed at strengthening educator interpersonal and relational teaching skills.

Implementing Interactive, Student-Centred Teaching Strategies

Nurse educators should adopt student-centred teaching methods such as group discussions, role play, presentations, teaching aids, problem-based learning, and constructive feedback. In overcrowded classrooms, strategies such as small-group activities, rotating facilitators, and structured discussions can help sustain interaction.

Where teaching resources are limited, educators may utilise low-cost materials such as flip charts, printed case studies, and locally available teaching aids.

Promoting Positive Educator–Student Attitudes

Institutions should promote respectful and supportive attitudes among educators and students by providing training in communication skills, constructive feedback, and inclusive teaching practices.

In resource-constrained settings, cost-effective approaches such as brief in-service workshops, peer mentoring, and reflective practice groups may provide practical alternatives to formal training programmes. Institutional leadership should also recognise relational teaching as a valued professional competency.

Limitations and Transferability

This study was conducted within a single nursing programme in South Africa, which limits the generalisability of the findings. However, transferability is supported by purposive sampling, rich contextual descriptions, and detailed qualitative data. The findings may therefore be applicable to similar nursing education contexts, particularly in resource-constrained environments characterised by overcrowding, limited infrastructure, and large class sizes.

The relatively small sample size is typical of qualitative research that prioritises depth of understanding rather than statistical generalisation. Data saturation was achieved within the scope of the research question, supporting the credibility and trustworthiness of the findings.

CONCLUSION

Positive and respectful relationships between nurse educators and student nurses play a critical role in enhancing motivation, self-confidence, and professional development. Conversely, negative interactions may hinder learning and reduce student engagement.

The study highlights three key areas for improving classroom interaction in nursing education.

Institutional Investment in Classroom Infrastructure

Universities and nursing departments should invest in improving classroom infrastructure, including adequate space, ventilation, furniture, and teaching resources, to create a physically and psychologically supportive learning environment.

Targeted Educator Training in Student-Centred Teaching

Teaching and learning units should provide targeted training programmes for nurse educators in student-centred teaching approaches, including group discussions, role play, problem-based learning, and constructive feedback.

Co-Creation of Classroom Ground Rules

Educators and students should collaboratively develop classroom ground rules that promote mutual respect, inclusivity, and positive interaction within the learning environment.

Authors' Contributions

R.F.M. conducted the study and drafted the manuscript.
L.M. contributed to drafting and reviewing the manuscript.

Acknowledgements: The authors express their gratitude to the nurse educators and student nurse neophytes who participated in this study. The authors also acknowledge the University of Venda for granting permission to conduct the research.

Ethical Approval: Ethical approval for the study was obtained from the University of Venda Research Ethics Committee.

Conflicts of Interest: None declared.

ORCID iDs:

Mathevula, R. F.: https://orcid.org/0000-0002-2534-6302
Mathebula, L.: https://orcid.org/0009-0000-9068-6998

REFERENCES

Agyare, V. A., Poku, C. A., Baafi, S., Berchie, E., & Attafuah, P. Y. A. (2025). Exploring the evolving relationship between students and nurse educators in tertiary institutions in Ghana. *BMC Medical Education, 25*(1), Article 586. https://doi.org/10.1186/s12909-025-07155-1

Annesley, S. H., Platt, A., Wade, J. A., & Tomietto, M. (2023). Grading practice as a strategy to improve proficiencies in undergraduate nurse education: Modelling key areas of competence. *Nurse Education Today, 128*, 105890. https://doi.org/10.1016/j.nedt.2023.105890

Baduge, M. S. D. S. P., Garth, B., Boyd, L., Ward, K., Joseph, K., Proimos, J., & Teede, H. J. (2024). Barriers to advancing women nurses in healthcare leadership: A systematic review and meta-synthesis. *EClinicalMedicine, 67*, 102367. https://doi.org/10.1016/j.eclinm.2024.102367

Barranquero-Herbosa, M., Abajas-Bustillo, R., & Ortego-Maté, C. (2022). Effectiveness of flipped classroom in nursing education: A systematic review of systematic and integrative reviews. *International Journal of Nursing Studies, 135*, 104327. https://doi.org/10.1016/j.ijnurstu.2022.104327

Beresford, M., & Wutich, A. (2025). Sample size in qualitative research: Moving from data saturation to information power. *Qualitative Health Research, 35*(1), 1–12. https://doi.org/10.1177/10497323241296206

Bhardwaj, V., Zhang, S., Tan, Y. Q., & Pandey, V. (2025, February). Redefining learning: Student-centered strategies for academic and personal growth. In *Frontiers in Education* (Vol. 10, p. 1518602). Frontiers Media SA. https://doi.org/10.3389/feduc.2025.1518602

Binoy, S. (2024). Transforming education: Enhancing student performance and satisfaction through the flipped classroom method. *Asian Journal of Education and Training, 3*(1), 21–21. https://doi.org/10.54536/ajet.v3i1.2121

Chan, S., & Smith, G. D. (2024). Strategies for enhancing Chinese students' engagement in a large class learning environment: An interpretative phenomenological approach. *Nurse Education in*

Practice, 79, 104023. https://doi.org/10.1016/j.nepr.2024.104023

Chipeta, L., & Hwang, W. (2024). Creating a trusting and motivating educational atmosphere through educator attributes. *Nurse Education in Practice, 77*, 103967. https://doi.org/10.1016/j.nepr.2024.103967

Clark, C. (2025). *Creating & sustaining civility in nursing education*. Sigma Theta Tau.

Creswell, J. W., & Creswell, J. D. (2021). *Research design: Qualitative, quantitative, and mixed methods approaches* (6th ed.). SAGE Publications.

da Silva, T., & Mitchell, T. (2024). Addressing faculty shortages and resource constraints in nursing education. *The Journal of Nursing Regulation, 15*(1), 45–52. https://doi.org/10.1016/j.jnur.2023.11.005

De Gagne, J., Cho, E., & Park, H. (2021). Fostering lifelong learning and autonomy in nursing students. *Teaching and Learning in Nursing, 16*(3), 249–254. https://doi.org/10.1016/j.teln.2021.03.005

Duong Thi Ngoc, L., Dao Nguyen Dieu, T., Le Van, A., Ho Duy, B., Pham Thi Thuy, V., Nguyen Truong, S., Dang Thi Thanh, P., Duong Duc, H., & Nguyen Ngoc Quynh, A. (2024). Enhancing learning, classroom engagement, and attitude through team-based learning among Vietnamese nursing students: A quasi-experimental study. *Pacific Rim International Journal of Nursing Research, 28*(4), 885–897. https://doi.org/10.60099/prijnr.2024.268402

Froneman, S. (2023). The role of non-verbal communication and constructive feedback in building trust in the classroom. *Health SA Gesondheid, 28*, Article 2107. https://doi.org/10.4102/hsag.v28i0.2107

Ghasemi, M. (2020). Strategies to sustain and enhance nursing student engagement in the classroom. *Journal of Nursing Education, 59*(7), 375–380. https://doi.org/10.3928/01484834-20200615-09

Glaze, T. C. (2023). *Exploring student engagement in large classes using mobile polling* (Doctoral dissertation, ProQuest Dissertations and Theses Global). https://search.proquest.com/openview/058c45cf500ec7e3aa7284bc71a39f9f/1

Gray, J. R., Grove, S. K., & Sutherland, S. (2020). *Burns and Grove's the practice of nursing research: Appraisal, synthesis, and generation of evidence* (9th ed.). Elsevier.

Hamid, S., Rajendran, P., Lee, T., & Ismail, A. (2025). Gamification and technology integration in nursing education: Enhancing interaction without replacement. *Clinical Simulation in Nursing, 88*, 101512. https://doi.org/10.1016/j.ecns.2025.101512

Jadhav, H. R., Sethi, D., Subrahmanyam, N., Sharmila, P., Tamang, R., Surendran, S., Nelavala, A. D., R., D. N., & Umar, M. (2025). Approaches to fostering active learning techniques for Generation Z in nursing education: Concept review article. *International Journal of Research in Medical Sciences, 13*(8), 3608–3613. https://doi.org/10.18203/2320-6012.ijrms20252444

Kassab, M. (2024). Escape rooms as a pedagogical tool for critical thinking and teamwork in nursing. *Nurse Education in Practice, 75*, 103889. https://doi.org/10.1016/j.nepr.2024.103889

Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. Sage.

Mathevula, R. F. (2019). *Professional nurses' and student nurses' perceptions of clinical supervision in training hospitals of Limpopo Province, South Africa* (Doctoral dissertation, University of Venda). University of Venda Institutional Repository. http://hdl.handle.net/11528/3123

Milgate, T., O'Reilly, S., & Peterson, A. (2025). Negative educator behaviours as barriers to student interaction and learning. *Nurse Education in Practice, 80*, 104125. https://doi.org/10.1016/j.nepr.2025.104125

Moropa, T. D., Matshaka, L., & Makhene, A. (2025). Enhancing effective interpersonal interactions through soft skills: Perceptions of nurse educators. *BMC Nursing, 24*(1), Article 380. https://doi.org/10.1186/s12912-025-02864-w

National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research. (1979). *The Belmont report: Ethical principles and guidelines for the protection of human subjects of research*. U.S. Department of Health, Education, and Welfare. https://www.hhs.gov/ohrp/regulations-and-policy/belmont-report/index.html

Nowell, L. S., Norris, J. M., White, D. E., & Moules, N. J. (2017). Thematic analysis: Striving to meet the trustworthiness criteria. *International Journal of Qualitative Methods, 16*(1), 1–13. https://doi.org/10.1177/1609406917733847

Opoku-Danso, A., Bennett, J., & Clarke, P. (2025). High-quality interactions in nursing education: A cornerstone for student engagement and professional identity. *Journal of Advanced Nursing, 81*(3), 1124–1133. https://doi.org/10.1111/jan.15243

Peterson, S., & Bredow, T. (2009). *Middle range theories: Application to nursing research* (2nd ed.). Lippincott Williams & Wilkins.

Polit, D. F., & Beck, C. T. (2021). *Nursing research: Generating and assessing evidence for nursing practice* (11th ed.). Wolters Kluwer.

Poto-Rapudi, A. (2025). *Challenges in public nursing education in rural South Africa: A case study of Limpopo province*. Department of Health, Republic of South Africa. https://www.health.gov.za/reports/nursing-education-2025

Rosario, R. M. (2023). Copious teaching methodology in nursing—quality improvement. *Journal of Pediatric Nursing Science, 6*(2), 65–68. https://doi.org/10.18231/j.ijpns.2023.010

Sellers, K. (2022). Essential elements of a safe and supportive classroom climate for nursing students. *Journal of Nursing Education, 61*(2), 75–80. https://doi.org/10.3928/01484834-20220125-04

Sobhy Abo El-Yazid, E., Ahmed Elsayed, K., & Mohamed Rashad Ebrahim, R. (2024). Enhancing fourth year nursing students' self-confidence and engagement by using panel discussion strategy. *Journal of Nursing Science, Benha University, 5*(1), 124–144.

South African Department of Higher Education and Training. (2024). *Statistics on post-school education and training in South Africa, 2024* (Statistical report). https://www.dhet.gov.za/Information%20Systems%20Management/Statistics%20on%20Post-School%20Education%20and%20Training%20in%20South%20Africa%202024.pdf

South African Nursing Council. (2025). *Age statistics 2024* [PDF]. https://www.sanc.co.za/wp-content/uploads/2025/06/Age-stats-2024.pdf

Steele, T. J. (2024). *Use of flipped classroom learning activities in nursing: A basic qualitative study* [Doctoral dissertation, Capella University]. Sigma Repository. https://www.sigmarepository.org/dissertations/1596/

Tesch, R. (1990). *Qualitative research: Analysis types and software tools*. Falmer Press.

Ugwu, S. N., Ogbonnaya, N. P., Nwaneri, A., Chinwuba, A., & Chijioke, V. C. (2022). Baccalaureate nursing students' lived experiences of theory–practice gap (TPG) in a tertiary health institution in Enugu: A phenomenological approach. *International Journal of Innovative Research and Development, 11*(5).

UNESCO. (2024). *Global education monitoring report: Transition from secondary to higher education*. UNESCO Publishing.

University of Venda. (2024). *Faculty of Health Sciences: Annual report 2024*. https://www.univen.ac.za/faculty/health-sciences/annual-report-2024

Villamin, S. (2024). *Descriptive qualitative approaches for educational research*. Sage Publications.

Zhang, D., Smith, J., & Lee, A. (2025). Nursing students' experiences and perceptions regarding in-class flipped classroom settings. *BMC Medical Education, 25*(1), 123–135. https://doi.org/10.1186/s12909-025-07248-x

Zheng, Y. (2025). Impact of supportive educator–student relationships on nursing students' learning. *Nurse Education Today, 54*, 102–110. https://doi.org/10.1016/j.nedt.2025.102110