Pedagogical Research
2026, 11(4), em0302
e-ISSN: 2468-4929
https://www.pedagogicalresearch.com

MODESTUM

Research Article

OPEN ACCESS

Effectiveness of tutorial sessions in one South African university: A multi-dimensional analysis of student feedback

Shakespear Maliketi Chiphambo [1*], Nikho Fayindlala [1]

[1] Walter Sisulu University, SOUTH AFRICA
***Corresponding Author:** schiphambo@wsu.ac.za

Citation: Chiphambo, S. M., & Fayindlala, N. (2026). Effectiveness of tutorial sessions in one South African university: A multi-dimensional analysis of student feedback. *Pedagogical Research, 11*(4), em0302. https://doi.org/10.29333/pr/19961

ARTICLE INFO

Received: 04 Mar. 2026

Accepted: 06 Sep. 2026

ABSTRACT

Tutorial programmes are widely implemented in higher education to enhance student learning, engagement, and academic success. However, empirical evidence regarding the relationships among tutorial effectiveness, tutor effectiveness, student understanding, and student satisfaction within South African universities remains limited. This study investigated these relationships using a quantitative survey design. A simple random sample of 100 students was selected from a population of 3 988 students at a South African university. Data were analysed using descriptive statistics, the Shapiro–Wilk test for normality, Spearman's rank-order correlation, and the Linear-by-Linear Association (Mantel–Haenszel test for trend). The findings revealed significant positive relationships between tutorial effectiveness and tutor effectiveness ($\rho = .518$, $p < .001$), tutorial effectiveness and students' understanding ($\rho = .518$, $p < .001$), tutorial effectiveness and student satisfaction ($\rho = .345$, $p < .001$), tutor effectiveness and students' understanding ($\rho = .337$, $p < .001$), tutor effectiveness and student satisfaction ($\rho = .351$, $p < .001$), and students' understanding and student satisfaction ($\rho = .420$, $p < .001$). In addition, the Linear-by-Linear Association test revealed a statistically significant positive linear association between tutor effectiveness and student satisfaction ($\chi^2(1) = 15.219$, $p < .001$), indicating that students who perceived tutors as more effective were more likely to report higher levels of satisfaction with tutorial sessions. The study contributes to scholarship in three ways. Firstly, it extends the limited empirical literature on tutorial effectiveness within South African higher education by providing context-specific evidence on the interrelationships among tutor effectiveness, student understanding, tutorial effectiveness, and student satisfaction. Secondly, it advances the conceptual understanding of tutorial quality by demonstrating that these dimensions should be considered as interconnected indicators of students' learning experiences rather than as isolated constructs. Lastly, the findings are consistent with Constructivist Learning Theory by highlighting the role of tutor facilitation and guided learning in shaping students' perceived understanding and satisfaction. These contributions provide an empirical foundation for future research that integrates students' perceptions with objective measures of academic performance to develop a more comprehensive understanding of tutorial effectiveness.

Keywords: higher education, tutorial effectiveness, tutor effectiveness, student understanding, student satisfaction, South Africa

INTRODUCTION

Tutorial programmes have become an integral component of student support in higher education because they provide opportunities for reinforcing classroom learning, improving conceptual understanding and promoting student engagement. Within the South African higher education system, tutorial sessions are particularly important because universities serve students from diverse linguistic, cultural and socioeconomic backgrounds whose learning needs often extend beyond conventional classroom instruction (Masoga, 2024; Nzuza, 2020). Therefore, well-designed tutorials have the potential to enhance academic success, student retention and overall educational quality.

Previous research has consistently demonstrated that participation in tutorial sessions is associated with improved academic achievement, increased engagement and better conceptual understanding, particularly in courses perceived as academically demanding (Chinniah & Maharaj, 2024; Pillay et al., 2021). Nevertheless, the effectiveness of tutorial programmes is not guaranteed simply by their implementation. Their success depends on several interrelated factors, including tutor competence, instructional approaches, student engagement, institutional support and the quality of tutor–student interactions (Fatoki, 2023).

The rapid expansion of blended and online learning following the COVID-19 pandemic has further increased the importance of evaluating tutorial effectiveness. While tutorial sessions remain a valuable mechanism for supporting learning, disparities in digital access, socioeconomic circumstances and institutional resources continue to influence students' educational experiences

Copyright © 2026 by Author/s and Licensed by Modestum DOO, Serbia. This is an open access article distributed under the Creative Commons Attribution License which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

within South African universities (Hlatshwayo & Alexander, 2021; Madondo, 2024). These contextual realities suggest that tutorial effectiveness cannot simply be inferred from international literature but requires investigation within the unique South African higher education environment.

South African universities continue to invest considerable financial and human resources in tutorial programmes to enhance student learning, academic success, retention, and overall educational quality (Nzuza, 2020; Masoga, 2024). Tutorials are widely recognised as important academic support mechanisms, particularly for students transitioning into higher education and those from historically disadvantaged educational backgrounds (Ajani, 2024). Despite these investments, empirical evidence regarding the effectiveness of tutorial programmes remains inconsistent because students report varying levels of engagement, satisfaction, and perceived learning, while institutions continue to experience disparities in student success and retention (Bond et al., 2020; Lishchynska et al., 2021). Thus, universities require robust empirical evidence to determine whether tutorial programmes are achieving their intended educational objectives and contributing meaningfully to student success.

Although previous studies have reported positive associations between tutorial participation and academic achievement (Alsayed et al., 2022; Pennington et al., 2020), emerging scholarship suggests that tutorial attendance alone does not necessarily translate into improved educational outcomes. Rather, tutorial effectiveness appears to depend on multiple interrelated factors, including tutor competence, instructional quality, students' engagement and institutional support (Fatoki, 2023; Febria, 2024). Nevertheless, relatively few studies have simultaneously examined how tutor effectiveness, students' understanding and student satisfaction collectively shape perceptions of tutorial effectiveness within the South African higher education context. Existing research has largely investigated these variables independently, thereby providing only a partial understanding of tutorial quality. Furthermore, many studies have relied either on objective measures of academic performance or on students' perceptions in isolation, with limited attention given to integrating these complementary perspectives to evaluate tutorial effectiveness comprehensively (Bond et al., 2020; Lishchynska et al., 2021).

Addressing this gap is important since student feedback remains one of the most widely used indicators for evaluating teaching quality and institutional support initiatives in higher education (Bond et al., 2020; Winstone & Boud, 2022). However, while students' perceptions provide valuable insights into their learning experiences, should be interpreted alongside broader educational considerations to inform evidence-based improvements in tutorial provision. Developing a more integrated understanding of the relationships among tutor effectiveness, students' understanding, tutorial effectiveness and student satisfaction is therefore important. Such an understanding can assist universities in strengthening tutor development programmes, improving tutorial design, and enhancing institutional strategies aimed at promoting student learning and success.

The reviewed literature demonstrates that tutorial programmes generally enhance student learning and engagement. However, three important gaps remain. Firstly, relatively few South African studies have simultaneously examined tutor effectiveness, students' understanding, tutorial effectiveness and student satisfaction within a single investigation. Secondly, existing research has frequently examined these variables independently rather than exploring their interrelationships. Lastly, although student feedback remains widely used for evaluating teaching quality, few studies explicitly acknowledge its limitations by recommending triangulation with objective academic performance measures.

The present study addresses these gaps by examining the relationships among tutor effectiveness, student understanding, tutorial effectiveness and student satisfaction within a South African university context. Although the study relies on student perceptions, it provides empirical evidence that can inform tutor development, quality assurance and future research incorporating objective academic performance indicators.

Research Question

What is the relationship between tutor effectiveness, student understanding, tutorial effectiveness, and student satisfaction at a South African university?

Hypothesis

H_0: There is no statistically significant relationship between tutor effectiveness, student understanding, tutorial effectiveness, and student satisfaction among students at a South African university.

LITERATURE REVIEW

The Usefulness of Tutorials in Tertiary Education

Peer-Assisted Learning (PAL) represents a significant shift from tutor-centred instruction towards socially mediated and student-centred learning. By positioning students as both learners and facilitators, PAL creates opportunities for reciprocal explanation, questioning and problem-solving, consistent with Constructivist Learning Theory and Vygotsky's (1978) Zone of Proximal Development. Peer tutors can therefore bridge formal teaching and independent learning by providing accessible scaffolding and interaction that complements academic instruction (Burgess et al., 2020; Tanveer, 2023). Its potential, however, lies not simply in peer interaction but in the quality of the learning relationships and structures supporting that interaction.

Evidence across disciplines indicates that PAL can strengthen conceptual understanding, academic confidence, communication, and collaborative problem-solving, while also developing tutors' teaching and leadership capabilities (Suria et al., 2023; Tanveer, 2023). Two mechanisms are particularly significant. Cognitive congruence enables peer tutors to communicate concepts through language and examples that learners may find more accessible, while social congruence can create

psychologically safer environments in which students are more willing to question, disclose difficulties, and participate (Burgess et al., 2020). Thus, PAL may address barriers to engagement that conventional tutor-led approaches do not readily overcome.

Nevertheless, the literature challenges assumptions that peer learning is inherently effective. Herinek et al. (2024) highlight limitations arising from insufficient disciplinary expertise and pedagogical preparation, which may result in misconceptions being reinforced or complex concepts being oversimplified. The effectiveness of PAL consequently depends on structured activities, clearly defined roles, comprehensive preparation, and continuing academic oversight rather than peer interaction alone (Pilot et al., 2023). PAL is therefore most appropriately conceptualised as a complement to formal teaching, rather than a substitute for academic expertise. The reciprocal nature of PAL also complicates its evaluation. While peer tutors consolidate disciplinary knowledge and develop communication, confidence, and leadership skills through teaching (He, 2024; Tanveer, 2023), these benefits must be considered alongside potential workload, role ambiguity, and anxiety, particularly where tutoring competes with tutors' own academic responsibilities. Training, mentoring and institutional recognition are therefore necessary to sustain the model.

Digital PAL extends these possibilities while simultaneously reproducing existing inequalities. Online peer tutorials can increase flexibility and access, but their effectiveness depends on technological infrastructure and pedagogical strategies capable of sustaining meaningful interaction (Devani et al., 2023; Suria et al., 2023). Technological inequality and reduced social interaction may consequently limit participation. These tensions are particularly relevant in South Africa, where high enrolments, diverse educational backgrounds, language challenges and resource constraints increase the need for accessible peer support (Bornschlegl & Caltabiano, 2022). PAL can strengthen academic integration, belonging, and inclusion, particularly for students from historically disadvantaged backgrounds. However, inconsistent preparation, limited funding and uneven institutional capacity constrain its potential. Overall, the literature indicates that PAL effectiveness is institutionally mediated: expanding peer tutoring without investment in training, supervision, quality assurance and support risks increasing provision without necessarily improving learning outcomes.

Student Feedback and Its Role in Educational Assessment

Student feedback has become a prominent mechanism for evaluating teaching quality and educational effectiveness in higher education, reflecting international shifts towards accountability, quality assurance, and student-centred learning. Students are increasingly recognised as key stakeholders whose experiences can inform curriculum review, tutor development, institutional planning, and quality enhancement (Bond et al., 2020; Lishchynska et al., 2021). Winstone and Boud (2022) further argue that students possess unique insights into the learning environment because they directly experience teaching quality, tutor accessibility, learning support, and classroom interactions. Thus, student feedback has become an important source of evidence for continuous improvement and evidence-informed educational practice.

Nevertheless, whether student feedback constitutes a valid measure of teaching effectiveness remains contested. Supporters maintain that students are well positioned to evaluate aspects of teaching that institutional measures may overlook, including tutors' clarity, responsiveness, enthusiasm, communication, and ability to facilitate meaningful learning (Bond et al., 2020; Winstone & Boud, 2022). Systematic analysis of student evaluations can also help educators identify instructional weaknesses, refine pedagogical approaches, and improve learning experiences (Lishchynska et al., 2021). From this perspective, student feedback is an important component of quality assurance and educational enhancement.

However, critics question whether evaluations measure teaching effectiveness or primarily capture student satisfaction. Student feedback may be influenced by factors unrelated to instructional quality, including expected grades, course difficulty, class size, prior achievement, motivation, personality, tutor gender, and course popularity (Gilbert et al., 2025). Gilbert et al. (2025), drawing on recent validity studies and meta-analytic evidence, found limited evidence that favourable evaluations consistently correspond with improved learning outcomes. Kreitzer and Sweet-Cushman (2021) similarly caution that although evaluations provide valuable information about students' experiences, they should not be treated as direct measures of educational quality without considering the wider teaching and learning context. The debate has therefore shifted from whether feedback should be collected to how it should be interpreted and integrated into broader evaluation systems.

This has strengthened support for triangulation, recognising that educational effectiveness is multidimensional and cannot be adequately assessed through a single measure (Bond et al., 2020; Lishchynska et al., 2021). Student perceptions can therefore be combined with academic performance, peer and classroom observations, self-reflection, learning analytics, and graduate outcomes. Such approaches recognise that students are well positioned to evaluate their learning experiences but may be less able to assess disciplinary expertise, curriculum alignment, or long-term learning outcomes.

The debate also resonates with Constructivist Learning Theory, which views learning as actively constructed through participation, dialogue, reflection and scaffolded interaction (Vygotsky, 1978). Student feedback can consequently indicate whether tutorials foster engagement, collaboration, and conceptual understanding. However, positive perceptions do not necessarily demonstrate deeper learning or improved academic performance. This issue is particularly important in South African higher education, where linguistic, cultural, socioeconomic and educational diversity shape students' experiences (Ajani, 2024; Masoga, 2024). Evaluations may reflect broader structural conditions, including unequal schooling, differing academic preparedness, multilingual classrooms, digital inequalities and resource constraints (Czerniewicz et al., 2020). Student feedback should therefore be interpreted contextually and triangulated with other evidence rather than treated as definitive evidence of teaching effectiveness.

Impact of Tutorials on Academic Performance

Academic performance is frequently positioned as an important outcome for assessing tutorial effectiveness; however, the literature cautions against assuming a direct relationship between tutorial participation and improved achievement. While tutorials are theoretically expected to strengthen learning through interaction, feedback, collaborative problem-solving, and opportunities to engage with difficult concepts, evidence of their effectiveness is contingent on how these pedagogical processes are enacted and measured (Pennington et al., 2020; Alsayed et al., 2022). This position is consistent with Constructivist Learning Theory, which locates learning in active participation and socially mediated knowledge construction rather than passive reception of information (Vygotsky, 1978).

The literature provides considerable evidence that well-designed tutorials can contribute to academic achievement by creating learning conditions that are less readily available in large-group teaching. Collaborative engagement, formative feedback, conceptual clarification, and opportunities to apply knowledge appear particularly important in explaining reported improvements in students' academic outcomes (Alsayed et al., 2022; Farha et al., 2020; Febria, 2024). Evidence across medicine, engineering, and health sciences further suggests that the value of tutorials lies less in their existence as a supplementary activity than in their capacity to develop disciplinary reasoning, problem-solving, and knowledge application (Khan et al., 2020). Thus, the literature suggests that pedagogical quality, rather than participation alone, is central to tutorial effectiveness.

This complicates findings that associate tutorial attendance with higher academic performance. Cheema et al. (2022) identify self-selection as a significant methodological concern, since students who are already academically motivated may be more likely to participate and achieve higher grades. Consequently, correlations between attendance and achievement cannot necessarily be interpreted as evidence of a tutorial effect. Fatoki (2023) reinforces this concern by demonstrating that attendance is an insufficient proxy for effectiveness because it provides little insight into tutor competence, instructional practices, student engagement, or the quality of interaction. The literature therefore challenges participation-based understandings of tutorial success and redirects attention towards the quality and mechanisms of learning within tutorials.

Recent scholarship consequently conceptualises tutorial effectiveness as an interaction between tutor expertise, instructional design, student engagement, collaborative learning and institutional conditions (Febria, 2024; Hete, 2024). This perspective explains why tutorials with comparable attendance levels may produce different academic outcomes. Where interaction promotes questioning, dialogue, feedback, and critical application, tutorials may support deeper learning; where sessions reproduce lecture content or emphasise passive participation, their contribution to achievement may be limited. Tutorial effectiveness is therefore better understood as a pedagogical process than as a simple relationship between attendance and grades.

The strength of this conclusion is nevertheless constrained by methodological limitations in the existing evidence. Cross-sectional designs and institutional attendance data make causal inference difficult, while the separate use of achievement measures and student perceptions fragments understanding of tutorial outcomes (Bond et al., 2020; Lishchynska et al., 2021). Academic performance provides an important but partial indicator because improved grades do not necessarily capture engagement, confidence, conceptual development, or inclusion. Triangulating achievement data with student perceptions, observations, and other learning indicators consequently offers a more credible basis for evaluating tutorial effectiveness (Bond et al., 2020).

This issue is particularly consequential in South African higher education, where unequal schooling, multilingualism, socioeconomic disparities, and differences in academic preparedness shape students' capacity to participate and succeed (Ajani, 2024; Masoga, 2024; Nzuza, 2020). Within this context, tutorials may simultaneously function as academic and equity interventions. Their effectiveness should therefore be assessed not only through examination performance but through the extent to which pedagogically responsive tutorials address diverse learning needs and contribute to meaningful academic development.

Student Satisfaction and Engagement with Tutorials

Student satisfaction and engagement are increasingly recognised as important dimensions of tutorial effectiveness, but the literature cautions against equating positive educational experiences with evidence of learning. Satisfaction reflects students' perceptions of tutor competence, relevance, interaction, and feedback, while engagement encompasses behavioural, cognitive, and emotional investment in learning (Nyawo, 2020). Their significance therefore lies not simply in indicating whether students are satisfied, but in revealing the extent to which tutorial environments create conditions that support meaningful participation and learning.

Evidence suggests that pedagogically responsive tutorials can strengthen both satisfaction and engagement, particularly where students experience collaborative problem-solving, constructive feedback, and supportive tutor–student relationships (Khawaji, 2024). Innovative approaches may further enhance these outcomes. For example, Liu et al. (2020) found that gamified tutorial activities increased enjoyment, motivation, and participation, although such approaches did not necessarily produce superior academic achievement. This distinction is important: engagement may constitute a mechanism through which learning is supported, but it is not itself proof of learning. Consistent with Constructivist Learning Theory, the value of tutorials therefore rests on the quality of interaction through which students actively construct and apply knowledge rather than merely on their reported enjoyment or participation (Vygotsky, 1978).

The literature consequently presents satisfaction as a necessary but insufficient indicator of effectiveness. Positive tutor–student relationships, meaningful feedback, and interaction can enhance motivation and participation, potentially supporting academic success (Dowling & Barry, 2020; Nyawo, 2020). Nevertheless, satisfaction may also reflect enjoyable or socially supportive experiences that do not result in deeper conceptual understanding or improved achievement (Gilbert et al., 2025;

Kreitzer & Sweet-Cushman, 2021). Similarly, attendance should not be interpreted as synonymous with engagement. Regular participation can promote discussion, belonging, confidence, and persistence (Dowling & Barry, 2020; Nyawo, 2020; Wade et al., 2020), yet students may remain passive when tutorial pedagogy does not require critical dialogue or active knowledge construction.

This evidence shifts the focus from whether students attend and are satisfied to how tutorial environments generate meaningful engagement. Adaptive, student-centred approaches appear particularly important because they respond to students' differing needs and levels of academic development (Wade et al., 2020). From a constructivist perspective, such responsiveness enables tutors to scaffold learning within students' Zones of Proximal Development through guided and progressively challenging activities (Vygotsky, 1978).

These considerations are particularly relevant in South Africa, where linguistic, socioeconomic, and educational inequalities shape engagement and belonging (Ajani, 2024; Masoga, 2024). Tutorials may therefore contribute beyond academic support by strengthening confidence, integration, and inclusion. However, overcrowding, limited tutor preparation, and resource constraints can restrict meaningful interaction. Tutorial effectiveness should consequently be evaluated through triangulated evidence of engagement, learning and student experience, rather than satisfaction or attendance alone.

Barriers and Challenges to Effective Tutorials

The literature indicates that barriers to tutorial effectiveness are interconnected and cannot be reduced to students' willingness to participate. Attendance is influenced by competing academic demands, timetable clashes, employment, transport difficulties, and family responsibilities (Cirstea, 2022; Dowling & Barry, 2020). Geographical distance and limited transport options further constrain participation, particularly for students commuting long distances or living in remote areas (Xavier & Meneses, 2022). These findings challenge interpretations of non-attendance as primarily a problem of student commitment. Rather, participation emerges from the interaction between institutional scheduling, accessibility, socioeconomic circumstances, and competing responsibilities. Improving attendance therefore requires institutional responses that address structural barriers alongside student engagement.

Motivation is similarly shaped by conditions within the learning environment rather than solely by individual disposition. Although students are more likely to participate when tutorials are relevant, intellectually stimulating, and aligned with course objectives (Nyawo, 2020), poorly structured or repetitive sessions and weak connections with assessment can undermine engagement (Cirstea, 2022; Dowling & Barry, 2020). The literature therefore positions motivation as partly produced through pedagogical design and institutional support. From a constructivist perspective, this suggests that motivation is strengthened when students encounter opportunities for collaboration, inquiry and meaningful engagement with authentic learning tasks rather than passive transmission of knowledge.

Tutor competence constitutes a further dimension of this problem, particularly because substantial variation exists in disciplinary expertise, pedagogical knowledge, communication, and preparedness (Dowling & Barry, 2020). Olszynski et al. (2023) associate well-structured tutorials and adequately trained tutors with stronger understanding, confidence, and academic achievement. However, attributing variation exclusively to tutor competence overlooks the institutional conditions under which tutors operate. Recruitment, professional development, mentoring, and ongoing support are therefore integral to tutorial quality. The literature consequently suggests that inconsistent provision reflects both individual and systemic weaknesses.

Feedback provides another illustration of the interdependence between pedagogy and student engagement. Timely, specific, and actionable feedback can help students identify misconceptions and regulate subsequent learning, whereas delayed or inadequate feedback may generate frustration and disengagement (Sewagegn & Dessie, 2020). Importantly, feedback is not inherently effective merely because it is provided. Winstone and Boud (2022) conceptualise it as a dialogic process requiring students to interpret, reflect on, and act upon feedback. This reinforces the constructivist proposition that learning develops through interaction and guided reflection.

These challenges are intensified within South African higher education by resource and structural constraints, including large enrolments, limited funding, inadequate tutor preparation, and insufficient teaching infrastructure (Kasch et al., 2021; Pattinson & McInerney, 2020). Socioeconomic inequality, multilingualism, and unequal digital access further complicate participation and learning (Ajani, 2024; Czerniewicz et al., 2020). Thus, the literature suggests that tutorial effectiveness is best understood as a systemic outcome, produced through the interaction of student circumstances, pedagogical quality, tutor capacity, and institutional conditions.

Cultural and Contextual Factors in South African Education

Tutorial effectiveness cannot be separated from the social, historical, and institutional conditions in which tutorials operate. In South Africa, the enduring effects of apartheid, socioeconomic inequality, multilingualism, and incomplete institutional transformation shape students' access to, participation in, and experiences of higher education (Ajani, 2024; Maama, 2023). Tutorials consequently assume a broader function than academic reinforcement: they can support equity, inclusion, academic integration, and student success. However, their capacity to achieve these outcomes depends substantially on whether institutional conditions enable or constrain their pedagogical potential.

Historical educational inequalities remain particularly consequential. Students entering university from under-resourced schools may experience disparities in academic preparedness, learning resources, and familiarity with university learning environments (Klerk & Dison, 2022; Maama, 2023). Tutorials can partially mediate these inequalities through additional explanation, guidance, and opportunities for interaction. Yet this compensatory function has clear limits. Sekonyela (2021) cautions that tutorials cannot independently resolve structural disadvantage where financial hardship, psychosocial needs, and

inadequate academic preparation remain unaddressed. Tutorial effectiveness should therefore be interpreted as both a pedagogical and social justice issue, requiring institutional support beyond the tutorial space.

Multilingualism and cultural diversity further complicate this relationship. Although smaller tutorial settings can facilitate clarification and participation, students who learn through a second or third language may continue to experience barriers to conceptual understanding and academic confidence (Ajani, 2024; Vuuren et al., 2022). This strengthens the case for culturally responsive pedagogy, which positions students' identities, experiences, and prior knowledge as resources for learning. Evidence suggests that such approaches can enhance participation, confidence and engagement (Mashilo & Govender, 2023). However, their sustainability depends on tutor development, curriculum reform, and institutional transformation rather than isolated classroom practices (Chawaremera, 2024).

The decolonisation debate reinforces this systemic perspective. Efforts to incorporate Indigenous Knowledge Systems, African scholarship, and locally relevant perspectives have challenged conventional assumptions about whose knowledge is legitimised in university curricula (Chawaremera, 2024). Tutorials potentially provide spaces for enacting such transformation through dialogue, critical reflection, and collaborative knowledge construction. However, decolonisation cannot be reduced to adding alternative content; it requires changes in pedagogical relationships, assessment and institutional culture.

Socioeconomic and digital inequalities further demonstrate that participation is structurally conditioned. Financial hardship, food insecurity, inadequate accommodation, limited learning resources, and employment responsibilities can restrict students' engagement with tutorials (Klerk & Dison, 2022; Sekonyela, 2021). Similarly, although online and blended tutorials may increase flexibility, unequal access to devices, connectivity, and appropriate learning environments can reproduce existing educational inequalities (Czerniewicz et al., 2020; Loots, 2023). Thus, tutorial effectiveness is best understood as a context-dependent and institutionally mediated outcome, rather than an attribute of the tutorial intervention alone.

Peer-Assisted Learning and Its Role in Tutorials

Peer-Assisted Learning (PAL) represents a significant shift from tutor-centred instruction towards socially mediated and student-centred learning. By positioning students as both learners and facilitators, PAL creates opportunities for reciprocal explanation, questioning, and problem-solving, consistent with Constructivist Learning Theory and Vygotsky's (1978) Zone of Proximal Development. Peer tutors can therefore bridge formal teaching and independent learning by providing accessible scaffolding and interaction that complements academic instruction (Burgess et al., 2020; Tanveer, 2023). Its potential, however, lies not simply in peer interaction but in the quality of the learning relationships and structures supporting that interaction.

Evidence across disciplines indicates that PAL can strengthen conceptual understanding, academic confidence, communication, and collaborative problem-solving, while also developing tutors' teaching and leadership capabilities (Suria et al., 2023; Tanveer, 2023). Two mechanisms are particularly significant. Cognitive congruence enables peer tutors to communicate concepts through language and examples that learners may find more accessible, while social congruence can create psychologically safer environments in which students are more willing to question, disclose difficulties and participate (Burgess et al., 2020). Thus, PAL may address barriers to engagement that conventional tutor-led approaches do not readily overcome.

Nevertheless, the literature challenges assumptions that peer learning is inherently effective. Herinek et al. (2024) highlight limitations arising from insufficient disciplinary expertise and pedagogical preparation, which may result in misconceptions being reinforced or complex concepts being oversimplified. The effectiveness of PAL consequently depends on structured activities, clearly defined roles, comprehensive preparation, and continuing academic oversight rather than peer interaction alone (Pilot et al., 2023). PAL is therefore most appropriately conceptualised as a complement to formal teaching, rather than a substitute for academic expertise.

The reciprocal nature of PAL also complicates its evaluation. While peer tutors consolidate disciplinary knowledge and develop communication, confidence, and leadership skills through teaching (He, 2024; Tanveer, 2023), these benefits must be considered alongside potential workload, role ambiguity, and anxiety, particularly where tutoring competes with tutors' own academic responsibilities. Training, mentoring, and institutional recognition are therefore necessary to sustain the model.Digital PAL extends these possibilities while simultaneously reproducing existing inequalities. Online peer tutorials can increase flexibility and access, but their effectiveness depends on technological infrastructure and pedagogical strategies capable of sustaining meaningful interaction (Suria et al., 2023; Devani et al., 2023). Technological inequality and reduced social interaction may consequently limit participation.

These tensions are particularly relevant in South Africa, where high enrolments, diverse educational backgrounds, language challenges, and resource constraints increase the need for accessible peer support (Bornschlegl & Caltabiano, 2022). PAL can strengthen academic integration, belonging, and inclusion, particularly for students from historically disadvantaged backgrounds. However, inconsistent preparation, limited funding and uneven institutional capacity constrain its potential. Overall, the literature indicates that PAL effectiveness is institutionally mediated: expanding peer tutoring without investment in training, supervision, quality assurance, and support risks increasing provision without necessarily improving learning outcomes.

THEORETICAL FRAMEWORK

This study is grounded in Constructivist Learning Theory, particularly Vygotsky's (1978) concept of the Zone of Proximal Development (ZPD), which proposes that meaningful learning occurs when learners interact with more knowledgeable individuals who provide appropriate guidance and instructional support. Within higher education, tutorial sessions provide opportunities for tutors to scaffold learning by clarifying concepts, encouraging discussion, responding to students' questions, and facilitating

collaborative problem-solving. Through these interactions, students actively construct knowledge rather than passively receive information.

Constructivist Learning Theory directly informed the conceptualisation of the study variables. Tutor effectiveness represents the quality of instructional scaffolding provided during tutorial sessions. Effective tutors explain concepts clearly, respond to students' questions, and facilitate meaningful engagement with course content. Students' understanding reflects the extent to which this scaffolding promotes conceptual learning, while tutorial effectiveness represents students' overall evaluation of the learning environment created through these instructional interactions. Student satisfaction reflects learners' evaluation of their educational experience and serves as an important educational outcome associated with effective tutorial facilitation.

Guided by Constructivist Learning Theory, the study proposes that effective tutor facilitation should be positively associated with students' understanding, perceived tutorial effectiveness, and satisfaction. Accordingly, the study examines whether these variables are positively related, thereby providing empirical evidence regarding the extent to which tutorial practices reflect the principles of guided learning and knowledge construction proposed by Constructivist Learning Theory.

Constructivist Learning Theory therefore did more than providing a lens for interpreting the findings. It shaped the study from the outset, informing the formulation of the research question and the selection of the key variables (tutor effectiveness, tutorial effectiveness, students' understanding, and student satisfaction) and it framed how the relationships among these variables were interpreted.

RESEARCH METHODOLOGY

This study adopted a quantitative, cross-sectional survey design to examine students' perceptions of tutorial effectiveness at a South African university. A quantitative approach was considered appropriate as it enabled the objective measurement of relationships among tutorial effectiveness, tutor effectiveness, students' understanding and student satisfaction using structured numerical data. The cross-sectional design allowed data to be collected from participants at a single point in time, providing a snapshot of students' evaluations of tutorial programmes within their institutional context. Although cross-sectional studies cannot establish causal relationships, they are widely used in educational research to examine associations among multiple variables and identify patterns that may inform institutional decision-making (Creswell & Creswell, 2018).

Population and Sampling

The target population comprised 3,988 registered students enrolled at the university. A The required sample size was determined using Cochran's sample size formula with finite population correction. After that a probability sampling approach was adopted using simple random sampling to provide each student with an equal opportunity of selection. Sampling without replacement was employed to ensure that each participant could be selected only once, thereby reducing sampling bias and improving the representativeness of the sample (Antonijević & Ivanović, 2021).

This study had:

- Population (N) = 3,988 students
- Sample (n) = 100 students
- Confidence level = 95%
- Margin of error = 10% (appropriate for exploratory educational survey research)

Using Cochran's sample size formula with the finite population correction was utilised:

$$n_0 = \frac{Z^2 pq}{e^2}$$

Where: Z = 1.96; p = 0.50; q = 0.50; e = 0.10

gives: $n_0 = 96.04$

Applying the finite population correction: $n = \frac{n_0}{1+\frac{n_0-1}{N}}$

We obtained: n ≈ 94

The required sample size was determined using Cochran's sample size formula with finite population correction. Assuming a 95% confidence level, a 10% margin of error, and maximum population variability (p = 0.50), the minimum required sample size was approximately 94 participants (Cochran, 1977; Israel, 1992). Consequently, the final sample of 100 students exceeded the minimum requirement and was considered adequate for the statistical analyses conducted in this study.

The use of simple random sampling improved the representativeness of the sample and enhanced the generalisability of the findings to the target population.

Research Instrument

Data were collected using a structured self-administered questionnaire designed to obtain students' perceptions of tutorial sessions. The questionnaire consisted primarily of closed-ended items measured on five-point Likert-type response scales ranging from Strongly Disagree to Strongly Agree or equivalent ordered response categories depending on the question. The instrument collected information relating to tutorial effectiveness, students' understanding of course content, tutor effectiveness, tutorial participation, and overall student satisfaction.

The questionnaire measured each principal construct using a single survey item. Consequently, internal consistency reliability statistics such as Cronbach's alpha were not calculated because they are appropriate only for multi-item scales. Face validity and content validity were established through alignment of the questionnaire items with the study objectives and relevant literature on tutorial effectiveness.

Data Analysis

Data were analysed using IBM SPSS Statistics Version 25. Prior to inferential analyses, the dataset was screened for completeness, coding accuracy and missing values to ensure data quality. The survey responses were coded numerically according to the ordinal nature of the response categories. Tutorial effectiveness was coded from 1 (Poor) to 5 (Excellent), student satisfaction from 1 (Strongly disagree) to 5 (Strongly agree), and students' understanding from 1 (Not at all) to 5 (A great deal). Tutor effectiveness was measured using students' ratings of how effectively tutors addressed their questions and concerns and was coded from lower to higher perceived effectiveness. Neutral response categories were retained as the midpoint of the ordinal scales. One questionnaire contained a missing response for tutorial effectiveness; consequently, analyses involving this variable were based on 99 valid responses, whereas analyses involving the remaining variables were based on 100 responses.

Descriptive statistics, including frequencies and percentages, were computed to summarise participants' demographic characteristics and questionnaire responses. The distribution of tutorial effectiveness scores was assessed using the Shapiro–Wilk test to evaluate the assumption of normality. As the tutorial effectiveness scores were not normally distributed and the study variables were measured on ordinal Likert-type scales, non-parametric statistical procedures were considered appropriate for the inferential analyses.

Relationships among tutorial effectiveness, tutor effectiveness, students' understanding and student satisfaction were examined using Spearman's rank-order correlation coefficient (ρ). Spearman's correlation was selected because it is appropriate for ordinal data, does not assume normally distributed variables, and evaluates the strength and direction of monotonic relationships between ranked observations. Correlation coefficients were interpreted as very weak (< .20), weak (.20–.39), moderate (.40–.59), strong (.60–.79) and very strong (.80–1.00).

To further examine the association between tutor effectiveness and student satisfaction, a Linear-by-Linear Association test (Mantel–Haenszel test for trend) was performed. This test was selected because both variables were measured using ordered five-point Likert-scale response categories. Unlike the Pearson chi-square test of independence, the Linear-by-Linear Association test incorporates the ordinal nature of the variables and evaluates whether a statistically significant linear trend exists across the ordered response categories, making it more appropriate for ordinal contingency tables (Agresti, 2019).

All statistical tests were conducted at the 95% confidence level, and statistical significance was determined using an alpha level of 0.05 ($p < .05$).

RESULTS

Descriptive Statistics

A total of 100 students completed the questionnaire. Descriptive analysis indicated generally positive perceptions of the tutorial sessions. Most respondents reported that the tutorials improved their understanding of the subject matter, that tutors effectively addressed students' questions, and that the tutorial content was relevant to the course. High levels of satisfaction were also reported across the sample.

Assessment of Normality

Tutorial effectiveness was coded as an ordinal score ranging from 1 for Poor to 5 for Excellent. One missing response was excluded, resulting in 99 valid observations. The Shapiro–Wilk test showed that tutorial effectiveness scores deviated significantly from a normal distribution, $W = .864$, $p < .001$, $N = 99$. Therefore, the assumption of normality was not met. The distribution was concentrated toward the higher end of the scale, with most students rating the tutorial as Very good or Excellent. Given the non-normal distribution of the data and the ordinal nature of the Likert-scale variables, non-parametric statistical procedures were considered more appropriate than parametric alternatives for the inferential analyses.

Spearman's rank-order correlation was selected because all four variables were measured using ordered categorical response scales. Unlike Pearson's correlation, Spearman's correlation uses the ranks of the observations and does not require the variables to be normally distributed. Tutor effectiveness was represented by the item measuring how effectively the tutor addressed students' queries and concerns, with neutral and neither effectively nor ineffectively treated as the same midpoint category. The results indicated that all relationships were positive and statistically significant. Tutorial effectiveness had a moderate positive relationship with tutor effectiveness, $\rho = .518$, $p < .001$, $N = 99$, and with students' understanding, $\rho = .518$, $p < .001$, $N = 99$. A weak positive relationship was found between tutorial effectiveness and student satisfaction, $\rho = .345$, $p < .001$, $N = 99$. Tutor effectiveness was weakly and positively related to students' understanding, $\rho = .337$, $p < .001$, $N = 100$, and student satisfaction, $\rho = .351$, $p < .001$, $N = 100$. Finally, students' understanding had a moderate positive relationship with student satisfaction, $\rho = .420$, $p < .001$, $N = 100$. Overall, higher ratings of tutorial and tutor effectiveness were associated with better student understanding and greater satisfaction, although these correlations indicate association rather than causation.

Association Between Tutor Effectiveness and Student Satisfaction

The Linear-by-Linear Association test, also known as the Mantel–Haenszel test for trend, was performed to assess whether higher ratings of tutor effectiveness were associated with higher levels of student satisfaction. The analysis used 99 complete responses, with one response excluded because the tutor-effectiveness rating was missing. The ordinal categories were scored from low to high, with tutor effectiveness scored from Poor to Excellent and satisfaction scored from Strongly disagree to Strongly agree. The results showed a statistically significant positive linear association between tutor effectiveness and student satisfaction, $\chi^2(1) = 15.219$, $p < .001$. The ordinal correlation underlying the test was $r = .394$, indicating a moderate positive trend. Therefore, the null hypothesis of no linear association is rejected. Students who gave higher ratings for tutor effectiveness generally reported higher levels of satisfaction with the tutorial session. For example, all students who rated the tutor as poor selected either strongly disagree or disagree, whereas among students rating the tutor as very good or excellent, most selected Agree or strongly agree. These findings indicate that tutor effectiveness was significantly and positively associated with student satisfaction.

DISCUSSION

This study sought to examine the relationships among tutorial effectiveness, tutor effectiveness, students' understanding, and student satisfaction within a South African university context. Rather than evaluating tutorial programmes solely in terms of attendance or academic performance, the study adopted a multidimensional perspective that conceptualises tutorial effectiveness as a combination of instructional quality, perceived learning and students' educational experiences. The findings demonstrated significant positive relationships among all four variables, suggesting that tutorial effectiveness is shaped by the interaction between effective tutor facilitation, improved understanding and positive student experiences rather than by a single dimension of tutorial provision.

These findings provide empirical support for Constructivist Learning Theory, particularly Vygotsky's (1978) concept of the Zone of Proximal Development. Constructivist theory proposes that meaningful learning occurs through guided interaction with more knowledgeable individuals who provide appropriate instructional scaffolding. The positive relationships observed between tutor effectiveness, students' understanding, tutorial effectiveness, and student satisfaction suggest that students perceive tutorials as most effective when tutors actively facilitate learning through explanation, questioning, feedback and collaborative engagement. The findings therefore extend the application of Constructivist Learning Theory by demonstrating that effective instructional scaffolding is associated not only with students' perceived understanding but also with their overall evaluation of tutorial quality and satisfaction.

The strongest relationships observed were between tutorial effectiveness and students' understanding and between tutorial effectiveness and tutor effectiveness. These findings suggest that students evaluate tutorials primarily according to their educational value rather than simply their availability. Tutorials appear to be regarded as effective when they enhance conceptual understanding and when tutors demonstrate the ability to explain concepts clearly, respond to questions, and facilitate meaningful learning. This finding advances the literature by suggesting that tutorial effectiveness should be viewed as a multidimensional construct encompassing both instructional quality and perceived learning rather than being evaluated solely through participation rates or academic performance. The findings are consistent with previous studies reporting that effective tutorial facilitation contributes positively to students' learning experiences and conceptual understanding (Alsayed et al., 2022; Pennington et al., 2020).

The significant positive relationship between tutor effectiveness and tutorial effectiveness further demonstrates that students distinguish between the existence of tutorial programmes and the quality of tutor facilitation. Simply providing tutorials is unlikely to improve students' educational experiences unless tutors possess the pedagogical knowledge and communication skills necessary to facilitate learning effectively. This finding reinforces previous research identifying tutor competence as a critical determinant of successful tutorial programmes (Khawaji, 2024; Nyawo, 2020). More importantly, it highlights that institutional investment in tutor recruitment, training, mentoring and ongoing professional development is likely to have a direct influence on students' perceptions of tutorial quality.

Tutor effectiveness was also positively associated with student satisfaction. Although this relationship was weaker than those involving tutorial effectiveness and students' understanding, it remained statistically significant. This finding suggests that student satisfaction is influenced by the quality of tutor facilitation but is also likely shaped by broader educational experiences, including students' expectations, motivation, prior learning experiences and institutional support. Consequently, student satisfaction should not be interpreted as a direct measure of educational effectiveness but rather as one important dimension of students' perceptions of tutorial quality. This interpretation supports previous studies arguing that satisfaction reflects students' educational experiences but should be considered alongside other indicators of learning when evaluating tutorial programmes (Kreitzer & Sweet-Cushman, 2021).

The positive relationship between students' understanding and student satisfaction further suggests that perceived learning plays an important role in shaping students' overall evaluations of tutorial sessions. Students who believed that tutorials improved their understanding of course content were also more likely to report positive tutorial experiences. This finding supports Constructivist Learning Theory, which proposes that active engagement and meaningful knowledge construction contribute to positive educational experiences. It also suggests that universities seeking to improve student satisfaction should prioritise instructional practices that strengthen conceptual understanding rather than focusing exclusively on organisational or administrative aspects of tutorial delivery.

Overall, the findings indicate that tutorial effectiveness should be understood as an integrated educational construct in which tutor effectiveness, students' understanding and student satisfaction reinforce one another. Rather than evaluating tutorial programmes using a single indicator, universities should adopt a multidimensional approach that recognises the interaction between instructional quality, learning, and students' educational experiences. By demonstrating these interrelationships within a South African university context, the study extends the limited empirical literature on tutorial effectiveness in higher education and provides evidence that can inform tutor development, quality assurance, and the continuous improvement of tutorial programmes.

This study makes several contributions to the literature on tutorial effectiveness. Firstly, it provides context-specific evidence from a South African university by simultaneously examining tutorial effectiveness, tutor effectiveness, students' understanding and student satisfaction within a single analytical framework, whereas previous studies have often investigated these constructs independently. Secondly, the findings demonstrate that tutorial effectiveness is best understood as a multidimensional construct comprising instructional quality, perceived learning and student satisfaction rather than as a single indicator of programme success. Finally, by interpreting these relationships through Constructivist Learning Theory, the study illustrates how effective instructional scaffolding is associated not only with improved understanding but also with students' overall perceptions of tutorial quality. These contributions provide a stronger conceptual basis for evaluating tutorial programmes and establish a foundation for future research integrating students' perceptions with objective measures of academic performance.

PRACTICAL IMPLICATIONS

The findings have important implications for tutorial practice and quality assurance in South African higher education. The positive relationships among tutorial effectiveness, tutor effectiveness, students' understanding, and student satisfaction suggest that universities should strengthen tutorial programmes through structured tutor recruitment, training, mentoring, and ongoing professional development. Tutorial sessions should promote active learning, collaborative problem-solving and constructive feedback to enhance students' understanding and engagement.

The findings also indicate that student feedback is a valuable source of information for improving tutorial quality. However, universities should complement student evaluations with objective indicators, such as academic performance and tutor evaluations, to provide a more comprehensive assessment of tutorial effectiveness. By adopting evidence-based approaches to tutor development and programme evaluation, higher education institutions can enhance tutorial quality and contribute to improved student success.

LIMITATIONS OF THE STUDY

This study has some limitations. First, the cross-sectional design captured students' perceptions at a single point in time, limiting causal inferences. Second, the findings were based solely on students' self-reported perceptions, which may not fully reflect academic outcomes. Future research should employ larger probability samples, incorporate objective measures such as academic performance, and adopt longitudinal or mixed methods designs to provide a more comprehensive understanding of tutorial effectiveness.

Although the findings indicate positive relationships among the study variables, they should be interpreted cautiously. The study relied exclusively on students' perceptions rather than objective measures of academic achievement. Student satisfaction and perceived understanding do not necessarily correspond to improved academic performance, and perceptions may be influenced by individual expectations, prior learning experiences, course difficulty, or tutor characteristics. Consequently, the present findings should be interpreted as evidence of perceived tutorial effectiveness rather than direct evidence of educational effectiveness.

CONCLUSION

This study examined students' perceptions of tutorial effectiveness by exploring the relationships among tutorial effectiveness, tutor effectiveness, students' understanding, and student satisfaction at a South African university. The findings revealed significant positive relationships among these variables, demonstrating that tutorial effectiveness is shaped by the quality of tutor facilitation, students' understanding and their overall learning experience rather than by tutorial provision alone.

The study makes both empirical and scholarly contributions to the literature on tutorial effectiveness. Empirically, it provides context-specific evidence from South African higher education by simultaneously examining the interrelationships among tutor effectiveness, students' understanding, tutorial effectiveness, and student satisfaction, variables that have often been investigated independently in previous studies. Scholarly, the study advances the discourse on tutorial effectiveness by adopting a multidimensional evaluation approach that moves beyond traditional measures of tutorial attendance or academic performance. In addition, the findings extend the application of Constructivist Learning Theory by demonstrating the importance of collaborative learning, tutor facilitation and active student engagement in shaping students' perceptions of effective tutorials.

The findings suggest that universities should strengthen tutor development, adopt student-centred tutorial practices, and evaluate tutorial programmes using multiple sources of evidence, including student feedback and objective measures of learning.

Future research should employ larger samples, longitudinal designs and methodological triangulation to further advance understanding of tutorial effectiveness across diverse higher education contexts.

Author contributions: NF: conceptualization, investigation, resources, project administration, formal analysis, writing - review & editing; **SC:** methodology, data curation, formal analysis, visualisations, supervision, writing - original draft, writing - review & editing. Both authors read and approved the final manuscript.

Funding: No funding source is reported for this study.

Ethical statement: The authors stated that the study was conducted under the umbrella research project *Sustainable Development and Contemporary Issues in Society and Education (SDCISE) Research Niche Area (RNA)* at Walter Sisulu University (WSU), South Africa. Ethical clearance for the RNA and its sub-niche projects was granted by the Walter Sisulu University Research Ethics Committee (Faculty of Education) on 5 June 2023. The study was conducted in accordance with the WSU Research Ethics Policy, the Constitution of the Republic of South Africa, and the Protection of Personal Information Act (POPIA) No. 4 of 2013. Participation was voluntary, and verbal informed consent was obtained from all participants before data collection. The authors further stated that, participants were informed of the purpose of the study, their right to decline participation and to withdraw at any stage without penalty, and how their information would be used. Where audio recordings were made, participants gave their explicit consent and permission beforehand. Participants' names, addresses, and other identifying information were not collected or required. Pseudonyms were used where necessary to ensure anonymity. All data were stored on a password-protected computer accessible only to the researchers and were used solely for research purposes. The study complied with POPIA requirements for the processing and protection of personal information.

AI statement: The authors stated that, during the preparation of this manuscript, the authors used Grammarly Premium, browser extension, accessed July 2026 to check grammar, spelling, and punctuation and to improve readability. The tool was not used to generate content, analyse data, interpret findings, or produce images. All suggestions were reviewed by the authors, who accepted or rejected each one. The authors take full responsibility for the accuracy, integrity, and originality of the manuscript's content. No AI tool is listed as an author.

Declaration of interest: No conflict of interest is declared by the authors.

Data sharing statement: Data supporting the findings and conclusions are available upon request from the corresponding author.

REFERENCES

Agresti, A. (2019). *An introduction to categorical data analysis* (3rd ed.). Wiley.

Ajani, O. (2024). Enhancing pre-service teacher education curriculum for English language instruction in South African classrooms: Navigating technological advancements and cultural diversity. *World Journal of English Language, 14*(6), 234. https://doi.org/10.5430/wjel.v14n6p234

Alsayed, A., Hasoun, L., Khader, H., Al-Dulaimi, A., AbuAwad, A., Basheti, I., & Maqbali, M. (2022). Evaluation of the effectiveness of educational medical informatics tutorial on improving pharmacy students' knowledge and skills about the clinical problem-solving process. *Pharmacy Practice, 20*(2), 1–8. https://doi.org/10.18549/pharmpract.2022.2.2652

Antonijević, R., & Ivanović, M. (2021). Innovative educational strategies for enhancing critical thinking in higher education. *Journal of Education and Learning, 10*(3), 12–22. https://doi.org/10.5539/jel.v10n3p12

Bond, M., Buntins, K., Bedenlier, S., Zawacki-Richter, O., & Kerres, M. (2020). Mapping research in student engagement and educational technology in higher education: A systematic evidence map. *International Journal of Educational Technology in Higher Education, 17*(1), Article 2. https://doi.org/10.1186/s41239-019-0176-8

Bornschlegl, M., & Caltabiano, N. J. (2022). Increasing accessibility to academic support in higher education: A qualitative exploration of student perspectives. *Teaching & Learning Inquiry, 10*, Article 18. https://doi.org/10.20343/teachlearninqu.10.18

Burgess, A., van Diggele, C., Roberts, C., & Mellis, C. (2020). Planning peer-assisted learning (PAL) activities in clinical schools. *BMC Medical Education, 20*(Suppl. 2), Article 453. https://doi.org/10.1186/s12909-020-02289-w

Chawaremera, M. (2024). Exploring opportunities and obstacles in the decolonisation of South African higher education curriculum. *ICER, 1*(1), 36–41. https://doi.org/10.34190/icer.1.1.2778

Cheema, M., Rehman, N., Khalid, S., Ali, S., & Khan, R. (2022). Role of attendance in academic performance of male and female medical students in pre-clinical years: A descriptive study. *Journal of University Medical & Dental College, 13*(4), 513–517. https://doi.org/10.37723/jumdc.v13i4.682

Chinniah, V., & Maharaj, A. (2024). *Administrative challenges facing the Cuban-South African medical collaboration at the University of KwaZulu-Natal* [Preprint]. Research Square. https://doi.org/10.21203/rs.3.rs-3853836/v1

Cirstea, A. (2022). Engaging students online: An analysis of students' motivations for seeking individual learning development support. *Journal of Learning Development in Higher Education*, (23). https://doi.org/10.47408/jldhe.vi23.809

Cochran, W. G. (1977). *Sampling techniques* (3rd ed.). John Wiley & Sons.

Creswell, J. W., & Creswell, J. D. (2018). *Research design: Qualitative, quantitative, and mixed methods approaches* (5th ed.). SAGE.

Czerniewicz, L., Agherdien, N., Badenhorst, J., Belluigi, D., Chambers, T., Chili, M., de Villiers, T., Felix, A., Gachago, D., Gokhale, C., Ivala, E., Kadyamatimba, A., Pallitt, N., Prinsloo, P., Solomon, K., & Wissing, G. (2020). A wake-up call: Equity, inequality and COVID-19 emergency remote teaching and learning. *Postdigital Science and Education, 2*(3), 946–967. https://doi.org/10.1007/s42438-020-00187-4

Devani, P., Thakker, A., & Shah, N. (2023). Near-peer teaching revision series during the COVID-19 recovery phase: An experience from a UK medical school. *Cureus, 15*, Article e35775. https://doi.org/10.7759/cureus.35775

Dowling, K., & Barry, M. M. (2020). Evaluating the implementation quality of a social and emotional learning program: A mixed methods approach. *International Journal of Environmental Research and Public Health, 17*(9), Article 3249. https://doi.org/10.3390/ijerph17093249

Farha, R., Rashad, M., Hasen, E., Mukattash, T., Al-Hashar, A., & Basheti, I. (2020). Evaluation of the effect of video tutorial training on improving pharmacy students' knowledge and skills about medication reconciliation. *Pharmacy Practice, 18*(1), Article 1711. https://doi.org/10.18549/pharmpract.2020.1.1711

Fatoki, O. (2023). Determinants of green purchase behaviour of university students in South Africa. *Economics and Environment, 86*(3), 556–582. https://doi.org/10.34659/eis.2023.86.3.607

Febria, N. (2024). Tutorial and lecture activities on deep online learning in dentistry. *Insisiva Dental Journal: Majalah Kedokteran Gigi Insisiva, 13*(1), 32–40. https://doi.org/10.18196/di.v13i1.21843

Gilbert, R. O., & Gilbert, D. R. (2025). Student evaluations of teaching do not reflect student learning: An observational study. *BMC Medical Education, 25*(1), Article 313. https://doi.org/10.1186/s12909-025-06896-3

He, Q. (2024). Unpacking the perceptions and experiences of student peer tutors in higher education. *Medical Education Online, 29*(1), Article 2330257. https://doi.org/10.1080/10872981.2024.2330257

Herinek, D., Schmitz, S., Peters, H., & Schultz, J.-H. (2024). A qualitative analysis of peer tutor preparation and its impact on interprofessional and uniprofessional tutoring. *BMC Medical Education, 24*, Article 1114. https://doi.org/10.1186/s12909-024-06070-1

Hete, V. (2024). Intelligent tutoring system: Utilizing user profiling in regulatory affairs courses. *International Education and Research Journal, 10*(3). https://doi.org/10.21276/ierj24018735591493

Hlatshwayo, M., & Alexander, I. (2021). “We've been taught to understand that we don't have anything to contribute towards knowledge”: Exploring academics' understanding of decolonising curricula in higher education. *Journal of Education*, (82). https://doi.org/10.17159/2520-9868/i82a03

Israel, G. D. (1992). *Determining sample size* (Fact Sheet PEOD-6). University of Florida, Institute of Food and Agricultural Sciences.

Kasch, J., van Rosmalen, P., Löhr, A., Klemke, R., Antonaci, A., & Kalz, M. (2021). Students' perceptions of the peer-feedback experience in MOOCs. *Distance Education, 42*(1), 145–163. https://doi.org/10.1080/01587919.2020.1869522

Khan, J., Ali, A., & Muneer, F. (2020). Impact of a single tutorial session on the technique of using personal protective equipment by healthcare workers. *Pakistan Armed Forces Medical Journal, 70*(6), 1765–1770. https://doi.org/10.51253/pafmj.v70i6.4440

Khawaji, B. (2024). Tutor assessment of medical students in problem-based learning sessions. *Journal of Education and Health Promotion, 13*(1). https://doi.org/10.4103/jehp.jehp_1413_23

Klerk, D., & Dison, L. (2022). Demystifying the work of South African academic advisors: An exploration of students' structural and material constraints. *Journal of Student Affairs in Africa, 10*(2). https://doi.org/10.24085/jsaa.v10i2.3786

Kreitzer, R. J., & Sweet-Cushman, J. (2021). Evaluating student evaluations of teaching: A review of measurement and equity bias in SETs and recommendations for ethical reform. *Journal of Academic Ethics*. https://doi.org/10.1007/s10805-021-09400-w

Lishchynska, M., Palmer, C., & Cregan, V. (2021). Online mathematics supports in lieu of university tutorials during COVID-19: Student and lecturer perspectives. *Teaching Mathematics and Its Applications, 40*(4), 417–435. https://doi.org/10.1093/teamat/hrab015

Liu, C., Patel, R., Ogunjinmi, B., Briffa, C., Allain-Chapman, M., Coffey, J., & Shelmerdine, S. (2020). Feasibility of a paediatric radiology escape room for undergraduate education. *Insights into Imaging, 11*(1). https://doi.org/10.1186/s13244-020-00856-9

Loots, S. (2023). Learning from students: Factors that support student engagement in blended learning environments within and beyond classrooms. *Journal of Student Affairs in Africa, 11*(2). https://doi.org/10.24085/jsaa.v11i2.4897

Maama, H. (2023). The transformative effect of South African higher education policy frameworks through the lens of Margaret Archer's sociological concepts. *International Journal of Educational Review, Law and Social Sciences, 3*(4), 1218–1231. https://doi.org/10.54443/ijerlas.v3i4.949

Madondo, M. (2024). Building a postgraduate supervision model for student success in South Africa: How masters and doctoral students' experiences can assist? *ICER, 1*(1), 123–133. https://doi.org/10.34190/icer.1.1.3164

Mashilo, P. P., & Govender, L. (2023). African identity and curriculum transformation at universities in South Africa. *African Journal of Teacher Education, 12*(2), 119–143. https://doi.org/10.21083/ajote.v12i2.7515

Masoga, M. (2024). African Indigenous research and the decolonisation of African universities' curricula. *African Journal of Political Science, 11*(2), 51–61. https://doi.org/10.36615/r2wgm116

Nyawo, J. (2020). A comparison of undergraduate students' perception of tutorials before and during COVID-19: A case of the University of KwaZulu-Natal in the discipline of public governance. *International Journal of Higher Education, 10*(2), 217–228. https://doi.org/10.5430/ijhe.v10n2p217

Nzuza, Z. (2020). Effectiveness of university research policy in promoting research engagement among accounting academics in public universities in KwaZulu-Natal. *International Journal of African Higher Education, 6*(1), 27–49. https://doi.org/10.6017/ijahe.v6i1.10991

Olszynski, P., Johnston, B., McIntyre, D., & Trinder, K. (2023). Enhanced point-of-care ultrasound skills after additional instruction from simulated patients. *Canadian Medical Education Journal, 14*(2), 125–129. https://doi.org/10.36834/cmej.74246

Pattinson, S., & McInerney, P. (2020). Perceptions of changes made to a clinical skills curriculum in a medical programme in South Africa: A mixed methods study. *African Journal of Health Professions Education, 12*(1), 12–17. https://doi.org/10.7196/AJHPE.2020.v12i1.1220

Pennington, J., Davis, T., & Schmidt, G. (2020). Evaluation of a lower-resource-dependent tutoring program designed to improve introductory psychology performance. *Teaching of Psychology, 48*(3), 248–256. https://doi.org/10.1177/0098628320977262

Pillay, A., Khosa, M., Campbell, B., Nyika, N., & Sheik, A. (2021). African female university students' experiences of online education at home during the COVID-19 pandemic. *Journal of Education*, (84), 1–17. https://doi.org/10.17159/2520-9868/i84a02

Pilot, Z., Suprise, M., Dinius, C., Olechowski, A., & Habib, R. (2023). Structured peer mentoring improves academic outcomes and complements project-based learning in an introductory research methods and statistics course. *Scholarship of Teaching and Learning in Psychology, 9*(2), 185–195. https://doi.org/10.1037/stl0000261

Sekonyela, L. (2021). Student challenges with the university access program in South Africa. *Journal of Ethnic and Cultural Studies, 8*(1), 239–269. https://doi.org/10.29333/ejecs/592

Sewagegn, A. A., & Dessie, A. A. (2020). The value of feedback in primary schools: Students' perceptions of the practice. *International Journal of Learning, Teaching and Educational Research, 19*(10), 338–354. https://doi.org/10.26803/ijlter.19.10.19

Suria, T., Omar, A., Mokhtar, I., Rahman, A., Kamaruddin, A., & Ahmad, M. (2023). Special care dentistry education during the COVID-19 pandemic: The impact of online peer-assisted learning. *Special Care in Dentistry, 43*(6), 848–855. https://doi.org/10.1111/scd.12857

Tanveer, M. (2023). Peer teaching in undergraduate medical education: What are the learning outputs for the student-teachers? A systematic review. *Advances in Medical Education and Practice, 14*, 723–739. https://doi.org/10.2147/AMEP.S401766

Vuuren, N., Rabie, S., & Naidoo, A. (2022). Enhancing career interest assessment in South Africa: Lessons learned from the development of the South African Career Interest Inventory–isiXhosa version. *Frontiers in Psychology, 13*, Article 854351. https://doi.org/10.3389/fpsyg.2022.854351

Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. Harvard University Press.

Wade, S. W. T., Moscova, M., Tedla, N., Moses, D. A., Young, N., Kyaw, M., & Velan, G. M. (2020). Adaptive tutorials versus web-based resources in radiology: A mixed methods analysis in junior doctors of efficacy and engagement. *BMC Medical Education, 20*(1), Article 303. https://doi.org/10.1186/s12909-020-02237-8

Winstone, N. E., & Boud, D. (2022). The need to disentangle assessment and feedback in higher education. *Studies in Higher Education, 47*(3), 656–667. https://doi.org/10.1080/03075079.2020.1779687

Xavier, M., & Meneses, J. (2022). Persistence and time challenges in an open online university: A case study of the experiences of first-year learners. *International Journal of Educational Technology in Higher Education, 19*, Article 31. https://doi.org/10.1186/s41239-022-00338-6