

Students' Perspectives on Learner-Centred Teaching and Perceived Communication Competence in Undergraduate Anatomy Education in Nigeria

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Abstract

Background

Effective communication is essential for academic success and professional readiness in health sciences. However, communication skills remain underemphasized in traditional anatomy teaching. Learner-centred teaching (LCT) promotes active participation, peer collaboration, and reflection, which may enhance students' communicative competence. This study investigated undergraduate anatomy students' perceptions of the association between learner-centred teaching practices and communication competence at Babcock University.

Methods

A mixed-methods approach was employed using total enumeration of all 244 undergraduate anatomy students. Data were collected using a self-developed questionnaire assessing exposure to learner-centred teaching practices, perceived communication competence, and students' experiences. Quantitative data were analysed using descriptive statistics, Spearman correlation, and simple linear regression ($p < 0.05$), while qualitative responses were thematically analysed.

Results

Participants were aged 16–21 years, with most in their third or fourth year (64.8%), and 54.1% had received formal communication training. Greater exposure to learner-centred teaching significantly predicted perceived communication competence ($\beta = 0.780$, $B = 1.053$, $p < 0.001$). Learner-centred strategies, including group work, peer teaching, class discussions, and real-life scenarios, were widely implemented and positively perceived. Most students reported improved attentiveness (81%), confidence in speaking (59.4%), structured oral presentations (65.7%), listening skills (66.6%), and reflective communication during academic tasks (71.1%). Thematic analysis identified five contributors to communication improvement: group-based tasks, practical exposure, oral presentations, interactive engagement, and content mastery.

Conclusion

Greater exposure to learner-centred teaching was associated with higher self-perceived communication competence, including confidence, verbal fluency, teamwork, and reflective practice. These findings support integrating structured learner-centred pedagogies into anatomy curricula, alongside faculty development and formal assessment of communication competencies. Longitudinal studies are needed to determine whether these perceived gains translate into objectively measurable communication outcomes.

INTRODUCTION

Learner-centred teaching (LCT) is an educational approach that places students at the centre of the learning process by promoting engagement, autonomy, and knowledge construction. It is rooted in constructivist theory and advanced by Weimer (2002) and Blumberg (2008) [1]. It shifts instruction from passive information delivery to inquiry-driven, collaborative and reflective learning. Strategies including collaborative discussion, problem-based learning, and formative feedback encourage students to become active participants in their own learning through critical thinking, self-directed learning, and deeper understanding [2–4]. Although implementation requires institutional alignment and faculty adaptation, evidence suggests that LCT enhances motivation and meaningful learning outcomes [1]. LCT also supports the development of transferable competencies that are essential for lifelong learning and professional practice. One key outcome associated with such environments is improved communication competence.

Communication is a core 21st-century skill widely regarded as a fundamental graduate attribute. Effective communication underlies academic success, teamwork, professional readiness, patient-centred care, collaboration, and cross-cultural engagement within the health professions [5, 6]. It extends beyond the ability to speak and write clearly to include active listening, critical reflection, adaptation to diverse audiences, and constructive participation in collaborative learning environments [7, 8]. Learner-centred classrooms encourage dialogue, questioning, peer interaction, and reflective practice. Hence, they provide opportunities for students to develop these communication competences alongside disciplinary knowledge. In higher education, structured interaction, discussion, and applied learning environments play a critical role in refining these competencies [5].

Within anatomy education, curricular reforms have increasingly promoted learner-centred instructional approaches in response to reduced contact hours, expanding curricular content, technological advancements, and the need to prepare graduates with competencies beyond factual knowledge [9, 10]. Active learning strategies, including peer-assisted learning, small group discussions, case-based learning, and flipped classrooms, have demonstrated benefits for student engagement and academic performance [10, 11]. However, research evaluating these approaches has focused predominantly on knowledge acquisition and technical competencies [12–14]. Relatively little attention has been given to communication competence and other transferable skills as educational outcomes.

This evidence gap is particularly relevant in sub-Saharan Africa, where anatomy education continues to rely substantially on teacher-centred instructional practices because of large class size, limited resources, and traditional pedagogical approaches. Although competency-based education has gained prominence across health professions programmes, empirical evidence examining how LCT contributes to communication competence in African higher education remains limited. Understanding students' experiences is essential for informing curriculum reform and supporting the development of graduates equipped with both disciplinary knowledge and transferable professional skills. Therefore, this mixed-methods study investigated undergraduate anatomy students' perspectives on LCT and its association

with perceived communication competence at Babcock University, Nigeria. The findings provide evidence to inform curriculum development and the integration of learner-centred pedagogies that foster communication competence within anatomy and other health sciences programmes, particularly in resource-constrained educational settings.

METHODS

Ethical Approval

The Babcock University Health Research Ethics Committee approved this study (BUHREC 061/25NB/73). Participation was voluntary, with anonymity and confidentiality ensured by removing personal identifiers and assigning alphanumeric codes to participants. All participants provided informed consent before taking part in the study. All study procedures were conducted in accordance with the Declaration of Helsinki.

Study Design, Setting, and Participant Recruitment

A cross-sectional descriptive design was used to examine students' reported exposure to learner-centred teaching strategies and their perceived communication competence at a single point in time. The design did not involve manipulation of variables but allowed for the identification of patterns and associations within the study population. This design also allowed for the collection of rich, real-time data on students' experiences from a sample of the population, offering insight into how curricular strategies align with skill acquisition goals. Thus, the researcher was able to identify and better understand how learner-centred methods support student communication abilities in anatomy education.

According to the departmental records, the total number of anatomy undergraduate students was 244. We invited all undergraduate students at the Department of Anatomy of Babcock University, Ilishan-Remo, Ogun State, Nigeria. We aimed at including the full cohort in evaluating the impact of learner-centred teaching on communication skill development. Inclusion criteria were all currently enrolled undergraduate anatomy students who had had exposure to anatomy instruction during the study period and who provided informed consent. Students on leave of absence or those who declined participation was excluded. Multiple data collection methods were employed to increase participation, including in-class outreach, digital survey distribution, and follow-up reminders through student platforms.

Data Collection

Data were collected using a self-structured questionnaire developed to address the study objectives and informed by the operational definitions of the key study variables. The instrument assessed students' exposure to learner-centred teaching (LCT) practices and their perceived communication competence within undergraduate anatomy education.

Learner-centred teaching exposure was measured using items evaluating the frequency and nature of students' engagement in instructional strategies such as group discussions, peer teaching, case-based learning, flipped learning, and interactive questioning. Communication competence was assessed through self-reported measures of speaking confidence, clarity of explanation, structured oral presentation, active listening, audience adaptation, and reflective communication practices.

The questionnaire comprised four sections.

- Section A collected demographic information, including age, gender, year of study, previous communication skills training, and frequency of classroom participation.
- Section B consisted of 10 items assessing students' exposure to learner-centred teaching practices in anatomy courses.
- Section C included 10 items evaluating students' perceived communication competence in academic settings.
- Section D contained three Likert-scale items assessing students' overall learning experiences, together with two open-ended questions that explored perceptions of learner-centred teaching and recommendations for improving its implementation.

Items in Sections B, C, and the closed-ended component of Section D were rated on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Composite scores were calculated by summing responses within each construct, with higher scores indicating greater exposure to learner-centred teaching practices, higher perceived communication competence, and more positive overall learning experiences. Responses to the open-ended questions were analysed using thematic analysis to identify recurring patterns and themes regarding students' experiences and suggestions for improving learner-centred teaching.

Validity and Reliability of the Instrument: Content validity of the questionnaire was established through expert review by three specialists in anatomy and medical education, who evaluated the relevance, clarity, and representativeness of each item with respect to the study constructs. Their feedback informed revisions to item wording, removal of ambiguous statements, and refinement of the questionnaire to ensure adequate coverage of learner-centred teaching practices and communication competence. Face validity was assessed during pilot testing with undergraduate anatomy students who were not included in the main study but had characteristics similar to those of the target population. Based on participant feedback and expert recommendations, items in Section B were refined to improve clarity and comprehension. Internal consistency of the revised instrument was assessed using Cronbach's alpha, yielding a coefficient of 0.74, indicating acceptable reliability.

Data Collection Procedure: Data were collected using a structured, self-administered questionnaire administered through Google Forms. Following an in-person briefing at the end of scheduled anatomy classes, all eligible students received a link to an electronic survey via their class communication

platforms. The purpose of the study, voluntary nature of participation, confidentiality measures, and participants' right to withdraw at any stage without penalty were explained before survey administration.

To minimise response bias, the questionnaire was completed anonymously, and no personally identifiable information, including names, matriculation numbers, or IP addresses, was collected. Lecturers involved in student assessment did not have access to individual responses, thereby reducing the potential for social desirability bias. Participants were encouraged to complete the questionnaire independently and to provide honest responses. Reminder messages were disseminated weekly over four weeks to maximise participation.

Before the main survey, the questionnaire was pilot-tested among undergraduate anatomy students outside the study population to assess clarity, estimated completion time, and technical functionality. Minor modifications to item wording were made based on the pilot findings.

Data Analysis

Quantitative data were exported from Google Forms into Microsoft Excel and analysed using IBM SPSS Statistics version 22. Descriptive statistics, including frequencies, percentages, means, and standard deviations, were used to summarise participants' demographic characteristics, exposure to learner-centred teaching practices, and perceived communication competence. The relationship between learner-centred teaching exposure and communication competence was examined using Spearman's rank correlation. Simple linear regression analysis was subsequently performed to determine the extent to which learner-centred teaching exposure predicted students' perceived communication competence. Statistical significance was established at $p < 0.05$. Qualitative responses to the open-ended questions were analysed using thematic analysis. Responses were manually coded, grouped into categories based on recurring patterns, and synthesised into overarching themes that reflected students' experiences of learner-centred teaching and their recommendations for improving communication skill development within anatomy education..

RESULTS

Demographic Characteristics

A total of 111 undergraduate students participated in the study (Table 1), which was almost half the study population. The study population had a mean age of 19.14 years (SD = 2.07; range = 16-21), with more females than males. Most participants were in their third or fourth year.

Table 1. Participant Characteristics (n = 111)

Variable	Category	n (%)
Age (years)	16–18	46 (41.4)
	19–21	52 (46.8)
	22–24	12 (10.8)
	≥25	1 (0.9)
Gender	Male	28 (25.2)
	Female	83 (74.8)
Year of Study	100 Level	23 (20.7)
	200 Level	16 (14.4)
	300 Level	34 (30.6)
	400 Level	38 (34.2)
Formal Communication Training	Yes	60 (54.1)
	No	51 (45.9)

Effect of LCT on Communication Skills

Most respondents reported exposure to key learner-centred practices (Table 2). High levels of agreement were observed for regular use of group work, inclusion of peer presentations, and encouragement to ask and answer questions during class; The use of real-life or clinical scenarios was strongly endorsed, with most of the students indicating agreement. Perceptions of the instructor functioning primarily as a facilitator were more moderate. Similarly, more than half of students reported that the classroom atmosphere felt safe for expressing ideas, while some remained neutral. Motivation to prepare ahead of class was reported by over half of respondents. Interactive teaching methods were associated with high reported attentiveness. Although about half of students indicated having more opportunities to speak compared with traditional classes, nearly one-third expressed neutral views. Many of the respondents agreed that LCT supported retention of anatomical concepts.

Table 2. Students' perceptions of learner-centred teaching (LCT) in anatomy education (n = 111)

Item	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
The anatomy course allows group work regularly	2 (1.8%)	1 (0.9%)	21 (18.9%)	38 (34.2%)	49 (44.1%)
Peer presentations were part of the teaching strategy	3 (2.7%)	6 (5.4%)	13 (11.7%)	34 (30.6%)	55 (49.5%)
I was encouraged to ask and answer questions during class	3 (2.7%)	6 (5.4%)	17 (15.3%)	38 (34.2%)	47 (42.3%)
The use of real-life or clinical scenarios enhanced my learning	0 (0.0%)	4 (3.6%)	11 (9.9%)	31 (27.9%)	65 (58.6%)
The instructor acted more as a facilitator than a lecturer	1 (0.9%)	9 (8.1%)	38 (34.2%)	35 (31.5%)	28 (25.2%)
I felt more motivated to prepare ahead of class	7 (6.3%)	3 (2.7%)	26 (23.4%)	45 (40.5%)	30 (27.0%)
The classroom atmosphere made me feel safe to express my ideas	6 (5.4%)	7 (6.3%)	28 (25.2%)	40 (36.0%)	30 (27.0%)
I was more attentive in class due to the interactive methods	2 (1.8%)	3 (2.7%)	16 (14.4%)	41 (36.9%)	49 (44.1%)
I had more opportunities to speak compared to traditional classes	4 (3.6%)	8 (7.2%)	33 (29.7%)	35 (31.5%)	31 (27.9%)
Learner-centred teaching helped me retain anatomical concepts better	1 (0.9%)	2 (1.8)	26 (23.4%)	43(38.7%)	39 (35.1%)

Communication Skills Development

Most students experienced some degree of improvement in communication skills (Table 3). The largest proportion reported sometimes, followed by often, and always. Smaller proportions reported rarely or never experiencing improvement. A majority reported increased confidence when speaking in front of peers, while some were neutral and a few disagreed. Slightly over half indicated improved ability to explain anatomical terms clearly, although a notable proportion remained neutral. Improvement in structured oral presentations was reported by more than half of respondents, with only a few expressing disagreement. Comfort in asking questions was endorsed by about half of the students, whereas some were neutral and a few disagreed. Similarly, about half agreed that they expressed ideas more logically and fluently, while one-third reported neutral perceptions. Listening skills during group discussions showed one of the strongest positive patterns. Confidence in group communication contexts was also high, with only a little disagreement. Over half of respondents indicated improved ability to tailor

communication to different audiences, although some remained neutral. Regarding non-verbal communication awareness, about half agreed that they had become more conscious of non-verbal cues, while some were neutral. The highest level of agreement was observed for reflective communication practices, with many students reporting increased reflection on how they communicate during academic tasks.

Table 3. Communication Skills Development (n = 111)

		Frequency	Valid Percent
Valid	rarely	19	17.1
	sometimes	43	38.7
	often	29	26.1
	always	16	14.4
	never	4	3.6
	Total	111	100.0

Perceptions of Communication Competence

Responses to the communication competence items demonstrated generally positive student perceptions of the impact of LCT on multiple domains of communication performance (Table 4). A majority of respondents reported increased confidence when speaking in front of peers, while some were neutral and a few disagreed. Similarly, over half indicated improved ability to explain anatomical terms clearly and accurately, while a sizeable neutral proportion suggests variability in perceived mastery of discipline-specific communication. Improvement in structured oral presentation skills was strongly endorsed by more than half of the respondents.

Comfort in asking questions during class was reported by over half of the students, whereas some remained neutral and a few disagreed. In addition, over half agreed that their ideas could now be expressed more logically and fluently, though one-third reported neutral perceptions. Listening competence showed one of the strongest positive trends, with more than half of respondents agreeing that their active listening skills had improved through discussions and only a few expressing disagreement. Confidence in group communication contexts was similarly high, indicating the perceived benefit of collaborative learning environments. More than half of the respondents reported improved ability to tailor explanations to different audiences, although some were neutral.

Awareness of non-verbal communication cues was endorsed by over half of the students, while some remained neutral. The strongest endorsement was observed for reflective communication practice, with many agreeing that they now reflect more on how they communicate during academic tasks, and only a few disagreeing.

Table 4: Perceptions of Communication Competence (n = 111)

Item	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I feel more confident speaking in front of my peers.	5 (4.5%)	13 (11.7%)	27 (24.3%)	41 (36.9%)	25 (22.5%)
I can explain anatomical terms clearly and accurately.	2 (1.8%)	10 (9.0%)	40 (36.0%)	40 (36.0%)	19 (17.1%)
My ability to give structured oral presentations has improved.	3 (2.7%)	5 (4.5%)	30 (27.0%)	44 (39.6%)	29 (26.1%)
I am more comfortable asking questions in class.	7 (6.3%)	11 (9.9%)	32 (28.8%)	34 (30.6%)	27 (24.3%)
I can express my ideas more logically and fluently.	5 (4.5%)	4 (3.6%)	37 (33.3%)	43 (38.7%)	22 (19.8%)
My active listening skills have improved through discussions.	—	6 (5.4%)	31 (27.9%)	48 (43.2%)	26 (23.4%)
I am more confident communicating in group settings.	3 (2.7%)	6 (5.4%)	27 (24.3%)	45 (40.5%)	30 (27.0%)
I can now better tailor explanations to different audiences.	3 (2.7%)	8 (7.2%)	36 (32.4%)	40 (36.0%)	24 (21.6%)
I have become more aware of non-verbal cues in communication.	—	7 (6.3%)	42 (37.8%)	39 (35.1%)	23 (20.7%)
I now reflect more on how I communicate during academic tasks.	1 (0.9%)	8 (7.2%)	23 (20.7%)	51 (45.9%)	28 (25.2%)

Thematic Analysis

Aspects of the Course that Most Improved Communication: Qualitative responses to the open-ended question on which course components most enhanced communication skills revealed a consistent pattern emphasising active, collaborative, and context-rich learning experiences. Five major themes emerged: collaborative learning, practical and hands-on exposure, oral communication activities, interactive teacher engagement, and content mastery and relevance (Table 5).

Table 5: Aspects of the Course that Most Improved Communication (n =111)

Theme	Subthemes	Description	Sample Student Responses
1. Group Work & Collaborative Learning	- Group presentations	Collaborative tasks enhanced verbal communication, idea sharing, and confidence.	"Group work and Team-based Activities", "Group projects and group presentations", "Group presentations"
	- Team-based activities		
	- Peer collaboration		
2. Practical and Hands-On Learning	- Gross anatomy & dissection	Applying knowledge practically improved students' ability to explain complex ideas clearly.	"Gross anatomy of upper and lower limbs", "Practical class during presentation", "Hands-on practical"
	- Clinical exposure		
	- Lab sessions		
3. Presentations & Oral Expression	- Formal presentations	Presenting topics helped students organize thoughts, speak fluently, and build self-confidence.	"Presentation/defence", "Presentation classes", "Histopathology... I was able to speak fluently..."
	- Seminar defence		
	- Public speaking opportunities		
4. Interactive Learning & Teacher Engagement	- Question & answer sessions	Teacher-student interaction and open discussions helped build fluency and participation.	"Lecturer asking questions orally", "Feedback sessions", "Interactive sessions", "Teacher interactions"
	- Class interaction		
	- Lecturer feedback		
5. Content Mastery & Relevance	- Subject-specific learning	Learning anatomy and related content enhanced students' ability to use accurate language.	"Understanding the structure and function of body parts in anatomy helped me explain things", "Biology 102".
	- Real-life correlation		
	- Vocabulary building		

Suggestions for Improving LCT in Anatomy Education: Students' suggestions reflected a clear desire to further strengthen learner-centred anatomy instruction through greater interactivity, technological support, inclusivity, and responsive teaching practices. The qualitative responses clustered into six major improvement themes, with an additional category reflecting satisfaction with current practice (Table 6).

Table 6: Suggestions for Improving LCT in Anatomy (n = 111)

Theme	Subthemes	Description	Sample Responses
1. Use of Technology & Visual Aids	- 3D models and apps	Students recommended incorporating technology (e.g., 3D models, apps) to improve visualisation and understanding of anatomical structures.	"Use of 3D anatomy apps to aid learning", "More visual representation like 3D images", "I wish the slides were more detailed"
	- Anatomage table		
	- Detailed slides		
	- Visual boards		
2. Practical & Real-Life Application	- Lab sessions	Students suggested increasing hands-on activities and applying real-life examples to enhance engagement and retention.	"Lab sessions should be used more", "More real-life anatomical objects", "Real clinical cases we can see and solve"
	- Clinical scenarios		
	- Physical anatomical objects		
3. Interactive & Problem-Based Learning	- Group work	Learners emphasised participatory approaches, including small group discussions and solving anatomical problems together.	"Problem-based learning", "Encourage group work", "Teachers should give presentation works and let students teach"
	- Peer teaching		
	- Group discussions		
	- Problem-solving exercises		
4. Inclusive & Flexible Teaching Methods	- Diverse learning styles	Suggestions included catering to different learner preferences, simplifying content, and allowing students more voice and flexibility in class.	"Adapt to diverse learning styles", "Let creativity come in", "The teacher should slow down a bit when talking"
	- Simpler explanations		
	- Slower pacing		
	- Student choice		
5. Assessment & Feedback Strategies	- Formative quizzes	Students recommended regular, low-stakes assessments and feedback to track learning and promote engagement.	"Formative assessments", "Oral quizzes of past and present courses", "Reflective learning: write what you've learnt"
	- Oral exams		
	- Reflection		
	- Trivia-based learning		
6. Lecturer-Student Relationship	- Approachability	Calls were made for lecturers to be more supportive, approachable, and open to student voices and concerns.	"Make the teachers approachable", "Lecturers should try to carry their students along", "Voices should be listened to"
	- Encouragement		
	- Listening to students		

7. Satisfaction/No Suggestions	- No improvement needed	Some students expressed satisfaction with current teaching methods and had no additional suggestions.	"None", "Nil", "It is already impressive", "I don't have any at the moment"
	- Positive experiences already		

Regression Analysis: Students with greater exposure to learner-centred teaching practices reported significantly higher levels of perceived communication competence. Simple linear regression demonstrated that learner-centred teaching was a significant positive predictor of communication competence ($\beta = 0.780$, $B = 1.053$, $SE = 0.081$, $t = 12.997$, $p < 0.001$).

Table 7: Linear Regression Analysis

Coefficients ^a					
Model		Unstandardized Coefficients		Standardized Coefficients	t
		B	Std. Error	Beta	
1	(Constant)	3.012	3.609		0.835
	LCT	1.053	.081	0.780	12.997
a. Dependent Variable: CS					

DISCUSSION

The present study examined whether students' perceptions of learner-centred teaching were associated with perceived communication competence among undergraduate anatomy students. Regression analysis further showed that learner-centred teaching was a significant positive predictor of perceived communication competence ($\beta = 0.780$, $p < 0.001$), suggesting a strong association between active learning experiences and students' confidence in their communication abilities. Although the cross-sectional design precludes causal inference, these findings contribute empirical evidence supporting learner-centred pedagogy as an approach that may foster communication competence alongside disciplinary learning within anatomy education

Most participants belonged to Generation Z. This cohort is widely recognised for preferring interactive, collaborative, and technology-supported learning environments [15,16]. Their positive perceptions of learner-centred teaching are therefore consistent with educational research demonstrating that contemporary learners value rapid feedback, teamwork, authentic learning experiences, and opportunities for active participation [15,17]. These findings reinforce calls for health sciences curricula that move beyond content transmission to incorporate active learning strategies that better reflect students' learning preferences while preparing them for collaborative professional practice.

The observed association between learner-centred teaching and communication competence is consistent with previous research across health professions education. Bingen et al. reported that flipped classroom approaches enhanced nursing students' communication, collaboration, and self-regulation through peer interaction and reflective learning [18]. Similarly, McLean and Gibbs argued that learner-centred pedagogies promote adaptability, critical reflection, and interpersonal competence, all of which underpin effective professional communication [19]. Together with the present findings, these studies suggest that communication competence develops not only through explicit communication training but also through learning environments that encourage dialogue, collaboration, questioning, and reflection. The findings also align with studies from Tanzania, Nigeria, and Rwanda demonstrating that participatory instructional strategies enhance learner engagement and communication-related competencies across diverse educational settings [20–22].

Notwithstanding these positive findings, the effectiveness of learner-centred teaching depends substantially on the quality of its implementation. Studies from Malawi have shown that large class sizes, limited infrastructure, inadequate technological resources, and persistent teacher-centred practices can constrain the successful adoption of learner-centred approaches despite widespread recognition of their educational value [22]. Likewise, concerns have been raised that poorly scaffolded learner-centred activities may increase students' cognitive workload and create organisational challenges if appropriate institutional support is lacking [19,23]. The generally favourable perceptions reported in the present study may therefore reflect a learning environment in which institutional support and instructional design enabled students to engage meaningfully with learner-centred activities. These findings highlight that educational outcomes are influenced not only by pedagogical approaches themselves but also by the contexts in which they are implemented.

The strong positive association observed between learner-centred teaching and perceived communication competence is also consistent with evidence supporting active learning approaches such as flipped classrooms, problem-based learning, and case-based learning. These instructional strategies encourage students to explain concepts, justify decisions, negotiate ideas, and collaborate with peers, thereby strengthening communication alongside disciplinary understanding [24–28]. Rather than viewing communication as a separate curricular component, the present findings suggest that it can be intentionally cultivated through well-designed learner-centred educational experiences embedded within anatomy teaching.

The findings have important implications for curriculum development within health professions education, particularly in resource-constrained settings. As competency-based education continues to expand, communication competence has become an essential graduate attribute alongside critical thinking, teamwork, and clinical reasoning. The positive perceptions of learner-centred teaching among undergraduate anatomy students suggest that integrating structured collaborative learning, peer teaching, case discussions, and reflective learning activities into anatomy curricula may support the development of these broader professional competencies. Faculty development initiatives that

strengthen educators' capacity to design and facilitate learner-centred instruction will also be essential for successful implementation.

From a theoretical perspective, the findings extend constructivist learning theory by demonstrating how active participation, dialogue, collaboration, and reflection may contribute to communication competence within anatomy education. Furthermore, the study adds to the relatively limited body of evidence from sub-Saharan Africa examining learner-centred pedagogy in health sciences education. By providing empirical evidence from a Nigerian university, the study contributes to ongoing discussions on curriculum innovation and competency-based education within resource-constrained higher education contexts.

Several limitations should be acknowledged. First, the cross-sectional design limits causal interpretation of the observed associations. Second, the study was conducted at a single university, which may limit the generalisability of the findings to other institutions or educational contexts. Third, communication competence was assessed using students' self-reported perceptions rather than objective measures of communication performance, introducing the possibility of response and social desirability bias. Future research should employ longitudinal and multi-institutional designs, incorporate objective assessments of communication competence, and explore how learner-centred teaching influences communication skills across different health professions programmes and stages of training.

CONCLUSION

This study demonstrates that learner-centred teaching is positively associated with undergraduate anatomy students' perceived communication competence. Students identified collaborative learning, peer interaction, oral presentations, and reflective learning as important contributors to communication development, underscoring the value of learner-centred pedagogies in fostering transferable professional skills alongside disciplinary knowledge. These findings support the integration of structured learner-centred teaching strategies and communication-focused learning activities within anatomy and other health sciences curricula. Future longitudinal and multi-institutional studies incorporating objective measures of communication competence are warranted to further establish the educational impact of learner-centred teaching across diverse higher education contexts.

Declarations

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