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Language of actions: The effects of teacher's kinesics on student learning and learning environment

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Abstract:

BACKGROUND: A teacher's appropriate use of nonverbal communication skills, mainly kinesics, can play a crucial role in the success of the students. Medical educators are unaware of the effective use of nonverbal communication as an instructional skill that can be used to engage learners, balance learners' participation by controlling the classroom environment, and motivate them to have a passion for learning. The purpose of the study was to explore the students' perceptions regarding the effect of teachers' kinesics on students' learning and their learning environment. This can be helpful for teachers in modifying their teaching styles and delivering quality education.

MATERIALS AND METHODS: A qualitative study with an exploratory design was conducted at a private medical institute in 2021 for a duration of 6 months. Fourteen medical students volunteered to participate in the study. Focus group discussions were conducted with the students to explore the experiences of the medical students regarding the use of nonverbal communication skills by their teachers and its effect on their learning in the classroom. The data collected was analyzed manually.

RESULTS: The results of the study revealed that teachers' nonverbal behaviors in the classroom significantly influence students' motivation, engagement, and learning in the classroom. Students preferred interaction with the teachers who were friendly and confident and used their nonverbal communication skills (eye contact, facial expressions, hand gestures) effectively, compared to strict and judgmental teachers.

CONCLUSION: Teachers need to motivate their students by improving their teaching styles and incorporating nonverbal behaviors positively in the classroom. By creating an impactful learning environment, students' participation and learning will increase, which will, in turn, improve their academic performance.

Keywords:

Kinesics, learning environment, medical education, nonverbal communication

Introduction

It is generally assumed that communication comprises speech and sound. According to the "7/38/55" rule proposed by psychologist Albert Mehrabian, 7% of communication comes from words, 38% from the tone of our voices, and 55% through our body language.^[1] Nonverbal communication (NVC) is defined as the behavior of the face, body, or voice minus the linguistic content. Scholars around the globe

believe that the role of NVC in students' learning is much greater compared to formal teaching in the classroom.^[2] According to Vygotsky's Social Development Theory, social interactions form the most important part of a learner's psychological development and learning.^[3] In a classroom, meaningful learning takes place through active interaction between the learners, their peers, and the teachers. Teachers use elements of body language, such as facial expressions, body movements, and gestures, in their teaching sessions, which influence

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students' learning of the content being taught to them in the classroom.^[4] Kinesics involves the use of body postures, eye contact, facial expressions, and gestures to convey messages. It is used to convey a message of acceptance or rejection, resolve disagreements, get attention, and initiate the communication process.^[5] In a classroom, the elements of kinesics used by the teachers can have a positive or negative impact on the student's learning experience.^[6] It has been reported that teachers who use NVC strategies in their classrooms develop a better bond with their students.^[7] Research has shown that eye contact, as a certain aspect of kinesics, affects an individual's perceptions and interpersonal relations.^[8] Medical educators are unaware of the effective use of NVC as an instructional skill that can be used to engage learners, balance learners' participation by controlling the classroom environment, and motivate them to have a passion for learning.^[1] Teachers, having a central role in students' learning environment, must have efficient communication skills to incorporate and actively support the element of relatedness of the students. Nonverbal behaviors can be useful in expressing emotions, conveying interpersonal attitudes, giving feedback, and gaining attention. A major chunk of the cognitive, emotional, social, and academic domains can be successfully integrated by using the NVC skills effectively.^[9] The credibility of a teacher also increases if he/she possesses good communication skills, verbal and nonverbal both considered.^[1,10] The body positioning, body movements, way of looking, appearance, and the facial expressions of the teacher are the main elements that may promote or hamper students' learning.^[11] As students consider teachers as their role models, it is the job of the teacher to maintain a friendly and comfortable learning environment for the students, where there is collaboration, interaction, and the needs of the students are welcomed, ensuring maximum student learning.^[12,13] Limited data is available on the nonverbal behaviors of the teachers despite their importance in students' learning and satisfaction. The purpose of the study was to explore the experiences of medical students regarding the effect of their teachers' NVC skills on the students' learning and their learning environment. The study will help teachers in understanding the importance of using their NVC skills effectively while delivering lectures. Teachers will be able to modify their teaching styles and understand to incorporate the elements the nonverbal behaviors to promote a conducive and friendly learning environment for the students.

Materials and Methods

Study design and setting

A qualitative exploratory study was carried out at a private medical institute where a module-based integrated curriculum is implemented in the basic

sciences years (Year 1, 2, 3), followed by a clerkship model in the clinical sciences years (Year 4, 5). The study was carried out in 2021 for a duration of 6 months.

Study participants and sampling

A convenience sampling technique was used for the selection of participants. The target population was the medical students from all respective years at the institution. Inclusion criterion was students in their 2nd year and 4th year course. Any student not willing to participate was excluded from the study. The sample size was 14 ($N = 14$), and the interviews of the students were recorded through focus group discussions.

Data collection tool and technique

Semi-structured interview questions were utilized to get in-depth answers from the participants. The interview questions were developed after a thorough literature search and were aligned with the objectives of the study. The focus group discussions were conducted using online Zoom meeting software. The interviews were recorded after taking permission from the participants; hand notes were also taken by the researcher. The recordings were used by the primary researcher to transcribe the data.

Data was transcribed and analyzed manually through thematic analysis by the researchers. The strategy of triangulation was employed to validate the trustworthiness of the data. The recordings of the focus group discussions were seen and the handwritten notes were read several times before the data was transcribed. Single meaningful units in the transcriptions that captured something interesting about the research question were coded. The codes were mainly utilized to get subthemes (categories). Main themes were formed by merging the subthemes. The themes and subthemes were also reviewed and compared with the original data to avoid overlapping. The final themes were developed after identifying the purpose of each respective theme. Considering the research question, findings of the data analysis were produced, which were supported by the data extracts (quotes) to justify the presence of the themes. External audit was carried out through a discussion of thematic analysis and results including themes, subthemes, and codes with two other medical educationists. Their input on the interpretation and perception of results was considered, and the analysis was finalized by the researchers.

Ethical consideration

The ethical approval was obtained from the Institutional Review Board and the Ethics Committee (reference: IRB# 120-21). Participation in the study was voluntary. Informed consent was taken from all the participants by the researcher before conducting the interviews. The participants were briefed about the purpose of the study,

and all the participants were assured of anonymity, confidentiality, and secrecy of information.

Results

After the collection of data, qualitative thematic analysis was done manually. The demographic details of the participants of the study ($n = 14$) are given in Table 1.

After the thematic analysis, the results showed that the NVC strategies used by the teachers have a significant effect on students' learning and their learning environment. Seven themes and 13 subthemes emerged after coding categorization of the data. An overview of the themes is given in Table 2, along with representative quotes from the participants.

1. *Quality of lectures delivered to the students:* The participants highlighted that the teacher's efforts, lack of student engagement, and the duration of the lecture are all factors that have a direct effect on the quality of their learning. They highlighted the lack of interaction in their teaching sessions as one of the major factors hampering their learning in the classroom.
2. *Communication and student learning:* Participants preferred teachers who made them understand the content by conversing with them during the teaching sessions. They also highlighted that the teachers should use their NVC skills more while teaching to make them understand better.
3. *Teachers' use of kinesics and student learning in class:* According to the participants, kinesics significantly influences their learning in the classroom. The students' motivation and sense of accountability improve when teachers make eye contact. Moreover, the teachers use their hand gestures effectively to emphasize important points and to gain their attention, which helps them in staying engaged with the content being delivered.

4. *NVC skills of clinical teachers:* The participants highlighted that the clinical teachers use their body language more effectively and prove to be better teachers as well.
5. *Teacher's body language and student's learning:* Participants mentioned that they observe their teachers very keenly. They also reported that strict teachers hampered their learning. Moreover, participants preferred teachers who were more confident while teaching compared to casual teachers because it shows their lack of interest in teaching.
6. *Students' learning and classroom environment:* Participants mentioned that the environment of the classroom is greatly influenced by the aura a teacher maintains during the lectures.
7. *Effect of the teacher's voice quality:* Participants reported that they are forced to pay attention when the teacher has a monotonous tone. Whereas they prefer teachers who use intonations in their voice while teaching and have a voice loud enough to be heard by all the students in the classroom.

Discussion

The purpose of conducting this study was to create awareness among the teachers about how their facial expressions, gestures, body positioning, eye contact, and body language impact the students' learning while they interact with the students. Classroom interaction between students and teachers has a significant role in a students' learning. The teacher's kinesics behaviors in the classroom have a significant impact on a student's motivation level and attention during the lectures. Lectures can be effective when they are interactive with discussions and questions being asked.^[14] As a teacher's facial expressions transmit many messages which are later perceived and interpreted by the students, these can be used by the teachers accordingly to modify the behaviors of the students in the classroom.^[13] The participants reported that the teachers who are practising clinicians use their communication skills more effectively and prove to be better teachers. Good communication skills of health-care workers are very important in gaining patients' confidence and compliance. Lack of communication can also lead to misdiagnosis and poor cooperation.^[15] Students consider their teachers as role models; therefore, it is very important for physicians to use their communication skills effectively in front of their students. Participants also reported that teaching sessions when the teachers were confident, friendly, and well prepared promoted their learning, rather than strict and judgmental teachers. This finding is supported by a study published about the teacher-related factors that influence a student's motivation, which included the teacher's preparedness, attitudes, communication skills, and teaching practises.^[16] Classrooms where teachers are

Table 1: Demographic data of the study participants

Respondent number	Year of medical school	Gender
R1	2 nd year	Female
R2	2 nd year	Male
R3	2 nd year	Female
R4	2 nd year	Male
R5	2 nd year	Male
R6	2 nd year	Male
R7	2 nd year	Female
R8	4 th year	Male
R9	4 th year	Female
R10	4 th year	Female
R11	4 th year	Male
R12	4 th year	Male
R13	4 th year	Female
R14	4 th year	Female

Table 2: Themes obtained from data analysis, along with their representative quotes

Theme	Subthemes	Representative quotes
Quality of lectures	Lack of efforts and communication by the teacher	Our lectures were not very interactive, we had to understand concepts ourselves.... That definitely takes down the spirit of a lecture (R3)
Communication and student learning	Teacher's nonverbal communication	I think if you do develop other techniques to convey the lecture content through these nonverbal communication techniques, than that can really help (R6)
Teacher's use of kinesics and student learning	Teacher's eye contact	For me, if a teacher makes eye contact with me after every 10 to 15 minutes, I will remain attentive and I will try to listen to the lecture (R8) She looks at you I think that's really kind of an encouragement and it gives you a confidence (R2)
	Using hand gestures for emphasis and student attention	... I have seen teachers use their hands gestures to get our attention or to emphasize on certain thing (R1) Eye contact, hand gestures and positioning was prevalent in the lectures. And it did have an effect, we were much more attentive in those lectures (R3)
	Facial expression affects the quality of lectures	When you're sharing it with enthusiasm we want to listen because we know that you're passionate about ... whereas if someone walks into the class sad and angry then that affects the quality of the lecture and that decreases your learning in the class as well (R1) I think use of hand gestures and facial expressions in a good way would definitely increase our learning (R9)
Nonverbal communication skills of clinical teachers	Walking in the class makes the lecture interactive	The teacher who moves in the class gains our attention more as we have to stay attentive the whole time (R2)
	Display of empathy through body language	... Their body language and tone all of a sudden change and they display so much empathy (R9) I noticed the teachers who are actually working in the hospitals, they use their body language way more and hence most of them are good teachers as well (R11)
Teacher's body language and students' learning	Body language and personality	Personality is reflected by a person's body language and it also does affect our learning We learn better in a class with a friendly teacher (R1)
	Comparison of strict and friendly teachers	She was welcoming and friendly so I really enjoyed her lectures (R3) Teachers who are very strict, when they walked into the class whatever body language there was, we always had a feeling that we must remain quiet and were always scared (R4)
	Strictness and self-improvement	Strictness motivates you and it challenges you. If this teachers' standards are this high so I need to go up to that standard ... this moulds you in the way that it contributes to a student studying (R5)
	Teacher's confidence	If they come in very confidently, I would automatically sit up on my chair and start listening more attentively (R8) Teachers should have an open body language because similar to patients, generally in communication it makes it easier to communicate effectively (R8)
Student learning and classroom environment	Maintaining class dynamics	The teacher's facial expressions are more important when it comes to making noises in the class (R3) If there's a sort of judgmental environment or if they would give us some sort of strict expressions or cues. That of course, is not satisfactory for us (R8)
Effect of the teacher's voice quality	Use of voice intonation	Good communication skills, Other than that I think the tone of your voice and how you intonate your voice is something which is important in class (R1) When the teacher uses a monotonous tone it actually just feels like a lullaby (R8)

judgmental are reported to be detrimental to the students as well.^[17] Teachers who are lenient and less strict in classroom management are appreciated by the students as well.^[18] Teachers should not deliver a negative message of judgment through their nonverbal behaviors. Students preferred teachers who taught in such a fashion that it felt as if they were conversing with the students and made the students comfortable in participating. Studies highlight the important aspects of effective teaching that include motivating the students, providing a comfortable learning environment, effective communication, and showing concern for students' learning.^[14,19] Teachers who positively use their hand gestures while teaching

to emphasize important points were considered better by the participants. Previous studies from the literature show that the use of gestures by instructors significantly enhances students' learning of complex concepts, as they serve to make the content accessible to the students and contribute to the stability of what they have learned.^[20,21] Participants in our study reported that teachers who maintain a monotonous tone during the lectures do not increase their learning due to the lecture being boring. To engage the students' attention, a monotone voice should be avoided by the teachers.^[1] Teachers should be mindful of using the appropriate quality of their voice during delivery of the lecture to maximize the

learning experiences of the students. Teachers in the medical profession do not receive any formal training on how to be effective educators. Workshops related to communication skills (verbal and nonverbal) can prove to be a successful intervention that can be arranged by the institutions to facilitate the teachers in improving their teaching standards. A mindset needs to be developed by the teachers to consider their NVC behaviors important. This way, a comfortable and conducive learning environment can be established in the classrooms, which will be beneficial for the students. Considering the results of this study, teachers can recognize their important nonverbal behaviors that can help the students in learning better. We, as educators, need to bring innovation in our thinking, teaching, and the content we teach to our students, ensuring the delivery of quality education to the students.

Limitations of the study

There are a few limitations of this study. Firstly, it was a single-institutional study with an integrated teaching system. Conducting a multi-institutional study where teachers use different teaching styles would have been beneficial. Collecting the opinions of students from different institutions would have improved the validity of the study by generating rich data.

Future work

Future studies need to be carried out on a larger scale involving multiple institutes to explore the views of the students studying in different learning environments. Moreover, the viewpoints of students of different disciplines can be studied to get more authentic results.

Conclusion

A teacher's NVC skills have a significant influence on students' learning in the classroom. Teachers should be mindful while planning their instructional strategies about how to ensure maximum student learning by utilizing their nonverbal behaviors positively. Teachers must be encouraged to polish their communication skills, focusing more on their NVC behaviors. Considering its importance in student learning, teachers need to understand the importance of effectively utilizing their nonverbal behaviors for the benefit of the students.

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Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient(s) has/have given his/her/their consent for his/her/their

images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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