



Use of Non-verbal Communication in Pedagogic Practices at Public High Schools in Lahore

Dr. Irfana Rasul*, Dr. Muhammad Nadeem**, Ms Ayesha Afzal***

*PhD, University of Management and Technology, irfana.omer1@gmail.com.

**Principal Officer in Mines & Minerals Department, mnadeem439@gmail.com.

***PhD Scholar, University of Management and Technology, ayeshaafzal@umt.edu.pk

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ABSTRACT

It was a descriptive research which studied the use of non-verbal communication in the pedagogic practices at secondary school level in Lahore. The study was conducted to examine the practices of teachers' non-verbal communication used in conjunction with verbal communication in actual classroom setting by teachers which affected the participation and performance level of learners. It investigated the students' understanding, interpretation of and attitude towards non-verbal communication used by teachers and identified the existing barriers for the use of non-verbal communication strategies to improve students' learning. The non-verbal communication was restricted to five factors—physical appearance, facial expressions, eye contact, spatial distance and paralinguistic. The study was limited to the subject of English (compulsory) at the female secondary schools in public sector. The sample comprised of 1200 students and 40 teachers from female public high schools of Lahore (Punjab), Pakistan. The study recommended that all female teachers at secondary level schools should be provided an orientation in non-verbal communication which would help them to use these skills in their teaching methodologies. While recognizing the importance of non-verbal communication, the curriculum planners and policy makers should take practical steps to make it a part of teacher education programs for the training of prospective teachers. Moreover, an awareness among students shall be created on how to interpret and reflect upon the teachers' non-verbal communication signals during teaching-learning process.



Introduction

Education, no doubt, constitutes the most important support to the development of any society. Pakistan, like all other third world south Asian countries, needs to work on its educational sector on emergent priority basis (Aziz, Bloom, Humair, Jimenez, Rosenberg&Sathar, 2014; Baumann & Winzar, 2016). Though the vision 2030 sounds promising (Pakistan Economic Survey, 2015-16) and the global survey shows slight improvement in the number of enrolment of students at primary level, the real dilemma is a level increase in dropout rates at middle and further at high school level (Latif, Choudhary, &Hammayun, 2015). AlifAilaan (2015), a research organization working for education development in Pakistan, reported that the dropout rates were higher by 85% at higher level in schools.

There were multiple reasons that were identified for this decline in enrolment rate at middle and higher level; the factor that turned out to be the most prominent, in the case of Pakistan, was students' unwillingness to learn as reflected by AlifAilaan (2015) which put a huge question mark on the current pedagogic practices (Fassett&Nainby, 2017). The communication between a teacher and a student not only stays in class but also affects the overall conduct and personality of a student which in turn has a large

influence on student's behavior towards learning (Alivernini&Lucidi, 2011; Tavakolian& Howell, 2012; AbdElhay& Hershkovitz, 2019). So, it is imperative to create awareness among teachers to motivate and engage the students in the lesson through the use of non-verbal signals. Teacher's eye contact, facial expressions and body language allow the student to take interest and maintain attention for active participation. Soft facial expressions of the teacher not only encourage the student to be reflective but also to be confident in sharing the response which in turn develops better understanding of the lesson (Eaves & Leathers, 2017), thus leading to success.

Literature Review

Communication is the process of encoding and decoding messages that helps us to share our ideas, opinions, knowledge and information. Communication is usually associated with verbal words only but it is, in fact, complemented with non-verbal cues for effective transmission of information. In Non-verbal communication, we use a variety of gestures, body movements, facial expressions, eye contact, spatial behavior, touch and even silence (Burgoon, Guerrero, & Floyd, 2016) We also intensify the effect of words through paralinguistic elements, i-e pitch, volume, rate, tone, pauses and accent in order to persuade, emphasize, regulate and specify like or dislike (Tai, 2014; Haneef, Faisal, Alvi, Zulfiqar, 2014). Non-verbal communication also includes environmental factors i.e., physical appearance and artifacts like personal objects, jewelry and clothing etc. When all these features interact with verbal message they affect the meanings of our words. Even when we are silent, we are interacting. The time we avail to take a pause, to restart or to leave the podium, we send messages to the audience. Most of the times, non-verbal signals are also used to initiate the verbal interaction and these signals help to enhance and support the spoken words. More than 65 % of communication is done through non-verbal communication and gestures (Zeki, 2009) and we are much influenced by how the message is delivered rather than what is delivered (Lunenburg, 2010).

Non- verbal communication is a significant part of teaching and learning process. It is the responsibility of the teacher to make class environment active and alive while maintaining positive posture and signaling constructive non-verbal gestures. In order to make students active and wakeful in the class and maintain discipline, most of the teachers believe in keeping up extremely strict attitude and they less appreciate their students, which negatively affects their learning environment (Bambaeroo&Shokrpour, 2017). The teachers who are more open and friendly towards students have a positive relationship; their friendly attitude and gestures help and motivate students in learning.

In a teaching-learning process, non-verbal communication along with verbal communication has a distinctive impact (Bunglowala&Bunglowala, 2015). Non- verbal communication complements and accentuates verbal words to enhance the effectiveness of the message. To ensure the learning and understanding of the students, verbal and non-verbal communication shall go parallel; even if it is in conflict with each other, mostly students depend on non-verbal clues to interpret the message correctly (Phutela, 2015). Positive non-verbal input –physical appearance, facial expressions, eye contact, body movement, and paralanguage—not only elaborates the message but also strengthens the teacher-student interaction which in turn influences the behavior of the student towards learning process and improves academic performance of the students. Nonverbal immediacy as rapport building nonverbal behaviors (York, 2015) affects student's willingness to participate in the learning activities.

Though most of the non-verbal signs are emblematic, they may be used differently by different people in varied contexts and cultures (Bhat & Kingsley, 2020). Similarly, though non-verbal cues help to convey intentional meaning, there is not just one specific intentional message underlying that sign. Furthermore, most of the times non-verbal gestures are used unconsciously by the teachers without prior planning.

Positive facial expressions improve the academic association between teacher and students, create conducive learning environment, and engage the students in learning activities; thus improving the connectedness among teacher, student and the course (Behera, Matthew, Keidel, Vangorp, Fang, & Canning, 2020). The students notice the change in expressions—for example, the way a teacher raises eyebrows, rolls the eyes, frowns, yawns, nods, and gasps— and respond accordingly, so teachers shall know how to mirror and control their facial expressions for an effective transformation of knowledge (Bowden, 2012). A teacher often uses different facial blends during interaction with students. He shall be aware of certain facial techniques; for example, to hide some emotions and to highlight the others for effective teachings. Such

“leakage cues”, Sarah Trenholm and Arthur Jenson (2000), also help the students to get feedback from the teacher about their performance in the class.

Facial expressions can add visual effects and vividness for a magical display of the words (Tai, 2014), thus enhance student engagement and interest in the learning activities. A teacher can use a smile as a powerful tool to attract the attention of students and making them comfortable enough to ask questions in the class without any hesitation. On the other hand, expression of anger –through raised eye brow—can also be used purposefully to alert the students who are not active in the learning process. Moreover, a teacher shall use a variety of facial expressions what Varner and Beamer (2005) stated as “rapid fire exchanges”. He mentioned that one expression shall not be used consistently or hold on for a longer time.

Body movements are the deliberate movements and signals that one can use to support the oral discourse and a teacher can use body movements—hand and arm movement, finger pointing, tapping a pen, twisting the hair, and widening the arms etc.—to translate his words, emphasize certain ideas, regulate and control the flow of conversation. Body gestures of a teacher are a pertinent factor in contributing to the unsaid impact for academic interaction and in getting intuitional results. The way a teacher folds the arms, slumps forward, sits or stands, slouches, and crosses legs drop clues to the students regarding certain attitudes and traits of the teacher which may not be reflected through verbal words but they mirror up the personality of the teacher (Linda & Mukhaiyar, 2019). An active posture of the teacher makes the students to remain attentive during the lesson while dull posture of a teacher makes the students dull and passive as well. Body movements of the teacher demonstrate the confidence, enthusiasm and energy of the teacher. To appreciate the students, postural echo and inclination angle of the teacher have a powerful impact to make the students comfortable to respond to the instruction and win trust of the students through considerate attitude reflected through body gestures. The distance maintained by the teacher reflects the feeling of acceptance or rejection towards the students. Teachers can enjoy the freedom of space whereas the students cannot. Teacher shall make conscious effort to approach each student in the class because it not only avoids feeling of favoritism but also encourages the concept of joint ownership (Antipova&Volkodav, 2019) Students who are closer in distance to the teacher are also found to be more reflective in non-verbal gestures regardless of the cognitive ability they possess.

A teacher can lean toward students while speaking. A nonthreatening way of leaning toward a student communicates that teacher is paying special attention to the student and invites him to respond back. Similarly, leaning away reflects that teacher is disinterested to continue communication (Khan & Zeb, 2021). A teacher can also nod his head to encourage the students in the class. If a teacher nods in the middle of a statement spoken by a student, it communicates that he agrees with him. Too many head nods shall be avoided because it communicates impatience of the teacher who wants the student to finish speaking quickly. If a student faces difficulties to communicate thought, a teacher can offer slow-paced head nods along with eye contact to help the student to convey his point of view.

The gestures and postures of students also provide feedback to the teacher about the lesson taught. Moreover, there are some tell- tale signs which reflect that students are not paying proper attention to the lesson and they help the teacher to change his/her style and methodology of teaching (Behjat, Bayat&Kargar, 2014).

Paralanguage in communication process refers to the vocals and not words. It not only includes sounds, like murmurs or gasps, but also vocal characteristics, like pitch, rate, volume, inflection and rhythm. Non-verbal cues like tone, intonation, pitch, pause, and voice are used as explicit means to convey the intended meaning with thoughts and feelings. Each paralinguistic factor adds different flavor in the quality of conversation, arouses a different emotion with varied tendency and has a specific function to influence the listener; however, the teachers who offer variety in tone, pitch, rhythm, intonation, and voice quality often engage the students successfully (Surkamp, 2014; Sutiayatno, 2015). Teachers who create a culture of high paralinguistic expressiveness are taken as more inspirational and creative, thus inculcating soft skills among the students. Applauding tone of the teacher invites all students to participate in the class without any fear; whereas, harsh tone, and monotone have a negative impact on student’s perception of the instruction. Through a positive intonation a teacher can boost up and motivate the students. Similarly through variation in the pitch, volume, inflection and tone of speaking a teacher can emphasize or deemphasize the ideas or points in the lesson.

Physical appearance of the teachers refers to both controllable and uncontrollable attributes such as height, weight, hair style, dressing, skin color, body shape, and accessories that belong to the teacher. Physical appearance of a teacher has an impact on the learning environment; a neat and fresh look of the teacher indirectly demands a clean appearance of the students; decent dressing mirrors up sophisticated personality of the teacher; use of professional accessories while avoiding too much artifacts, cosmetics and jewelry, exemplifies to adopt formal attire at school.

Through an eye-contact a teacher can reflect the degree of attention or interest towards the students and persuade them to develop interest in the lesson. Eye-contact also helps the teacher to regulate interaction with students. It not only motivates them to pay attention but also makes them disciplined because they know that the teacher's eye can approach them (Barati, 2015). A prolonged gaze is not appreciated because it causes a sense of unease rather a gaze that lasts from three to four seconds is encouraged.

Often, we use a variety of codes to support the verbal messages. Sometimes these codes may leave ambiguous meanings. For example, pat on the back of a student may be used to appreciate the performance or to pay attention to the task given. In such cases, the receiver has to decide the real meaning according to the situation. Non-verbal cues help in better comprehension of the concepts taught by the teacher because they provide additional meaning to the context (Megawati & Hartono, 2020). By using gestures we can convey the meanings of some specific words in a better way. For example, when the students hear the adjective 'grand' and look at the teacher who uses an accompanying gesture which illustrates the meaning 'tall' and the students interpret from the gesture of teacher that grand means tall.

As non-verbal signals help to create a shared construction of interpretation of the message, it augments the spoken words by ensuring an accurate intended transfer of knowledge (Khan & Zeb, 2021). Synergizing both, verbal information and non-verbal signals, is imperative to make the teaching-learning process fathomable for successful results (Bambaeroo&Shokrpour, 2017). It demands expertise and training on the part of teachers for better learning outcomes (Burgoon, Guerrero, & Floyd, 2016).

Most of the times teachers spend time preparing for what to say rather than how to say. In the teacher –student interaction, a teacher shall make sure that non-verbal gestures are used to support the verbal message. Moreover, both verbal and non-verbal communication shall go parallel in the communication process. It demands proper training and practice of teachers to have maximum output. There are some non-verbal cues which are difficult to control but a proper handling can avoid misinterpretations and thus miscommunication. A trained teacher can make his verbal message more powerful and persuasive through the use of non- verbal cues.

What type of association occurs in the classroom has an implications for how it affects outside the walls of classroom (Barati, 2015).A teacher shall use non-verbal communication carefully and purposefully to have maximum outcome. It is like a weapon which can be used to defend or offend and art of the teacher lies in using it as a defensive tool to enhance the efficiency and efficacy of students.

Both teachers and students can improve their non-verbal communication through awareness of certain tactics. For example, students shall not try to interpret non-verbal cues in isolation to other such codes or from verbal message. They shall be interpreted in the context in which they are used. One shall also look for cluster of codes used at a time to interpret the meaning. For example, if the crossed arm are accompanied by a pedestrian tone of voice or avoidance of eye-contact (Reyes, Brackett, Rivers, White&Salovey, 2012) Moreover teachers shall make it sure that the non-verbal gestures used by them are interpreted by the students correctly constructively because wrong interpretation of the message may make it more complex and difficult to comprehend.

In the context of Pakistan, literature accentuated (Haneef, Faisal, Alvi& Zulfiqar, 2014; Shams, Khan, Zainab, Shah&Farid, 2016) that teachers know the importance of non-verbal signals but the questions as to whether they are trained for the purpose, whether the students correctly interpret the cues, whether the usage brings in potential and desired outcomes or not, are still unanswered. In order to explore the gap in the teachers' perspective and practice, the researchers planned this study.

Statement of the problem

The study investigated the significance of non-verbal communication in the existing teaching practices and the effect of non-verbal signals on the learning process of students in schools at secondary level.

Research Objectives

Following research objectives guided the study.

- i. To examine the practices of teachers' non-verbal communication used in conjunction with verbal communication in actual classroom setting which affect the learning process of students.
- ii. To investigate the students' understanding, interpretation of and attitude towards non-verbal communication signals used by teachers.

Research Questions

Following research questions were set to meet the objectives.

1. Which non-verbal communication signals are used by the teachers in the classroom setting?
2. What are the effects of teachers' non-verbal signals on the learning process of students?

Methodology Population and Sampling

All the students of the 9th and 10th class and Subject School Teachers (General) teaching 9th and 10th class of female Public High Schools in Lahore (Punjab), Pakistan were considered as the population of this research study. The sample was comprised of 20 female Public High Schools of Lahore, Punjab, Pakistan. On the basis of disproportionate sampling, 60 students (30 from 9th class, 30 from 10th class) and 40 teachers (1 teaching to 9th class, 1 teaching to 10th class) from each school were selected randomly which resulted in a total of 1200 students and 40 teachers as the subject of study.

Instrumentation

To extract the information two questionnaires were used:

- i. A questionnaire for the teachers of secondary schools (consisting of 25 questions) covering all the five areas _ (i) Physical appearance (ii) Facial expressions (iii) Eye contact (iv) Body movement (v) Paralanguage _ of non-verbal communication was developed on the basis of the objectives of the study to explore the non-verbal communication signals used by teachers.
- ii. A questionnaire for the students of secondary schools (consisting of 25 questions covering all the five areas _ (i) Physical appearance (ii) Facial expressions (iii) Eye contact (iv) Body movement (v) Paralanguage _ of non-verbal communication was developed to collect information about the effect of non-verbal communication on the learning process and outcomes of students. Five point likert scale with response options: 1= "strongly disagree", 2 = "disagree", 3 = "undecided", 4 = "agree", 5= "strongly agree," was used to measure responses on both questionnaires.

Delimitation

The study was delimited to female secondary schools of public sector in Lahore only. Class ix and x (only female schools) were the subjects. Though the significance of non-verbal communication is undeniable in all subjects, the study was delimited to the subject of English (compulsory) only. Five areas of non-verbal communication (Physical appearance, Facial expressions, Eye contact, Body movement, and Paralanguage) were included to collect data.

Data Analysis

Factor analysis

All items in the questionnaire were measured to see the effect of teachers' non-verbal communication on the students' learning process. Overall, there were five factors each consisting of five items. Total explaining variance in each variable was 62.411%. The value of KMO statistic was 0.832 showing sampling adequacy appropriate for the data. The Bartlett's test of Suphericity yielded a Chi-Square statistic 2710.533 and the null hypothesis was rejected at 0.01% level of significance with $p=0.000$. Cronbach's Alpha was greater than 0.05 in all factors which showed the reliability and internal consistency of test items (For tables see Appendix A).The Cronbach's coefficient for each factor was calculated as:

Table 1.Factor Analysis (Non-verbal Communication Teachers and Students)

No	Factor	Cronbach Alpha
1	Physical Appearance	.987
2	Facial Expressions	.876
3	Eye Contact	.902
4	Body Movements	.899
5	Paralanguage	.845

Descriptive Analysis

To get descriptive statistics, frequency analysis in the form of percentage was applied while selecting all items from all five sections (both questionnaires) which reflected the given details (For tables see Appendix B):

Physical Appearance (PA)

Most of the teachers as well as the students were aware of the positive effects regarding physical appearance in the teacher-student encounter as 75% of teachers and 71% of students agreed that teachers did not use over accessories. Most of the students (76%) felt that attractive appearance of the teacher motivated them to have a positive attitude which reflected that physical appearance was considered important by students while 40% students felt dull because of dull appearance of teacher.

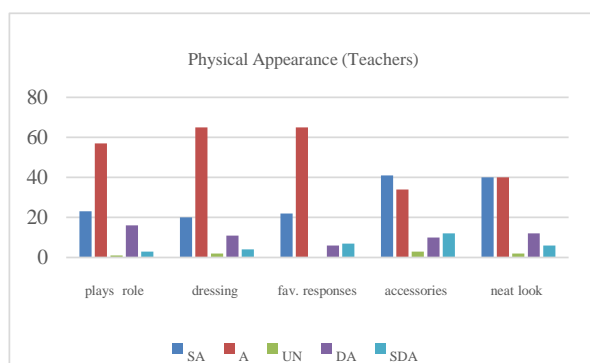


Figure 1. Descriptive statistics (PA: Teachers)

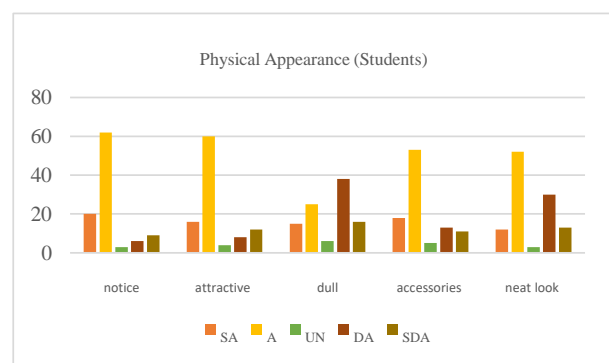


Figure 2. Descriptive statistics (PA: Students)

Facial Expressions (FE)

A majority of the teachers (65%) reported that anger discouraged the students to ask question; similarly, 48% students agreed that teacher's facial expression improved learning process which reflected awareness on the part of teachers as well as students but 60% students responded that their teachers did not use soft facial expressions to motivate them during lesson which spotlighted lack of practical implication of the known theory.

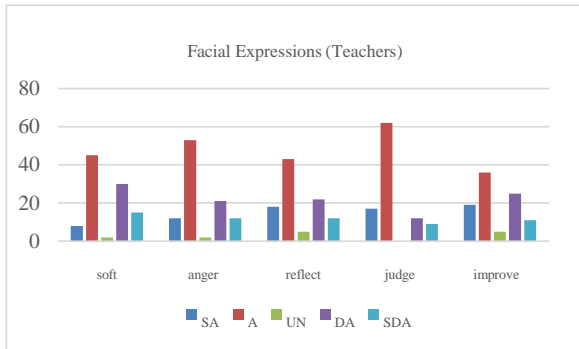


Figure 3. Descriptive statistics (FE: Teachers)

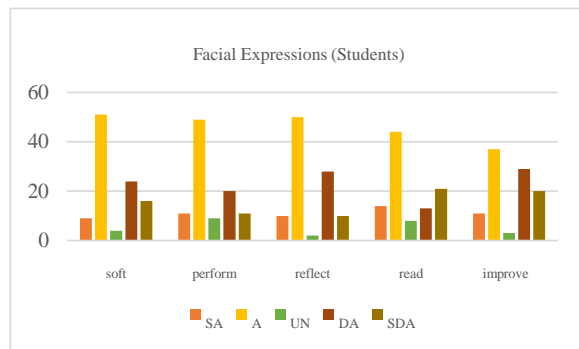


Figure 4. Descriptive statistics (FE: Students)

Eye Contact (EC)

The data reflected that 64% teachers used eye contact as a tool to maintain discipline in classroom and 71% students recorded that teachers could guess the feedback of students through an eye contact, but 58% students responded that they were not engaged in the lesson whenever they avoided eye contact with the teacher which highlighted lack of practical training of respective teachers.

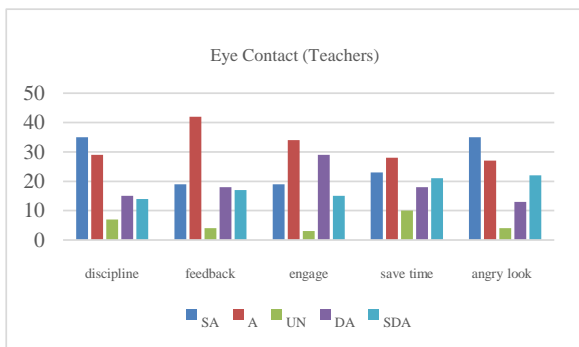


Figure 5. Descriptive statistics (EC: Teachers)

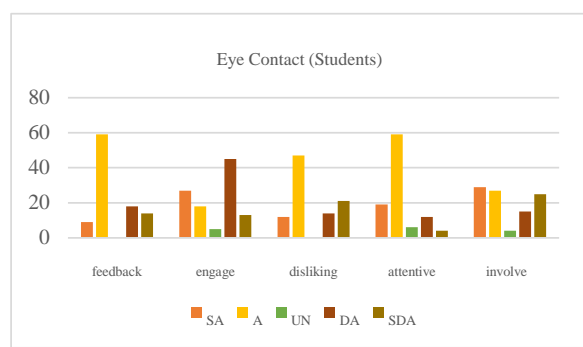


Figure 6. Descriptive statistics (EC: Students)

Body Movement (BM)

Most of the teachers (60%) thought that they remain fresh if they avoid sitting in the class and students felt dull if they tried to sit in classroom during lecture; similarly, 78% students thought that teachers could guess through body movement of students whether they got lesson or not and 68% students responded that they could easily understand the lecture if teacher used hand movement. There were 58% of the students who agreed that their teacher did not move constantly in the class during lesson and 50% of the students responded that the teacher used to sit in the chair during teaching which made them dull in the class.

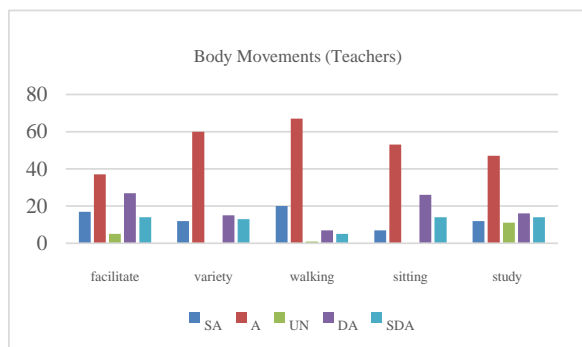


Figure 7. Descriptive statistics (BM: Teachers)

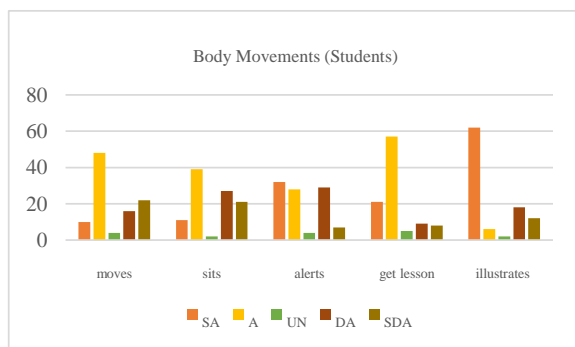


Figure 8. Descriptive statistics (BM: Students)

Paralanguage (PL)

The data reflected that 76% teachers used moderate rate of speaking for clarity and 74% teachers used moderate volume to understand the lesson properly, but only 49% teachers increased or decreased pitch of voice to maintain interest of students during teaching. Most of the students (61%) responded that they did not like the way their teacher talked to them and 49% students recorded that their teachers did not encourage them to participate in the class with a soft tone.

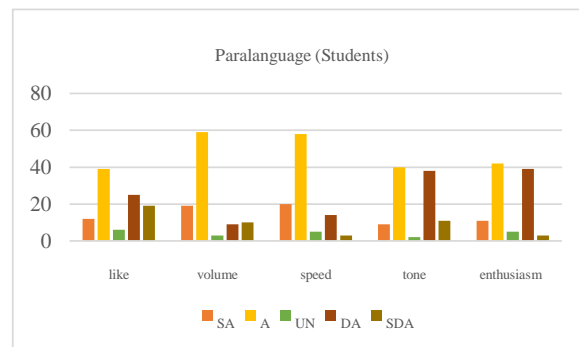
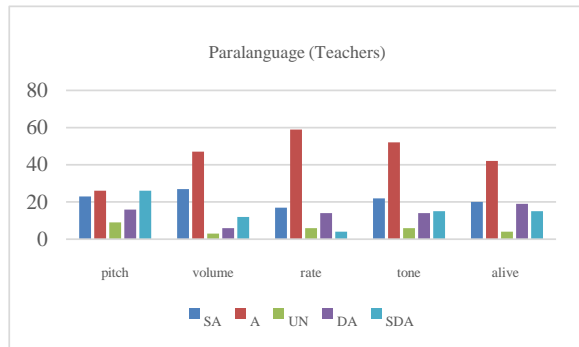


Figure 9 Descriptive statistics (PL: Teachers)

Figure 10 Descriptive statistics (PL: Students)

Linear Regression using Step-wise Method

Step-wise regression was applied to identify the strong factors affecting students' interpretation of non-verbal communication. All (five) specified factors— Physical appearance, Facial expressions, Eye contact, Body movement, and Paralanguage—were entered into the model which generated five models. The results of the model are depicted below:

Table 2. Linear Regression using Step-wise Method (Dependent Variable: Students' Non-verbal Communication)

Model	β	t-value	p-value
1 (Constant)		7.580	.000
Eye Contact	.702	38.742	.000
2 (Constant)		2.279	.028
Eye Contact	.612	31.784	.000
Facial Expressions	.207	10.144	.000
3 (Constant)		.342	.757
Eye Contact	.522	21.287	.000
Facial Expressions	.223	11.104	.000
Paralanguage	.130	7.168	.000
4 (Constant)		-1.720	.074
Eye Contact	.520	21.738	.000
Facial Expressions	.172	9.866	.000
Paralanguage	.128	5.430	.000
Body Movements	.110	6.463	.000
5 (Constant)		-2.688	.005
Eye Contact	.488	21.341	.000
Facial Expressions	.182	9.845	.000
Paralanguage	.151	5.565	.000
Body Movements	.076	5.499	.000
Physical Appearance	.060	3.920	.000

Model 1 illustrated that teachers' eye contact was singularly responsible for 70% of the variance in students' interpretation of communication signals for effective learning process (eye contact: $r=.702$; $P=.000$). Model 2 explicated that teachers' eye contact and facial expressions collectively influenced 81% of the variance in students' interpretation of communication signals for effective learning process (eye contact: $r=.612$, $P=.000$; facial expressions: $r=.207$, $P=.000$). Model 3 explained that teachers' eye contact, facial expressions, and paralanguage were collectively responsible for 87% variation in students' interpretation of communication signals for effective learning process (eye contact: $r=.522$, $P=.000$; facial expressions: $r=.223$, $P=.000$; paralanguage: $r=.130$, $P=.000$).

Model 4 explained that teachers' eye contact, facial expressions, paralanguage, and body movements collectively influenced 92% of the variance in students' interpretation of communication signals for effective learning process (eye contact: $r=.498$, $P=.000$; facial expressions: $r=.172$, $P=.000$; paralanguage: $r=.141$, $P=.000$; body movements: $r=.086$, $P=.000$). Model 5 explained that teachers' eye contact, facial expressions, paralanguage, body movements, and physical appearance collectively influenced 95% of the variance in students' interpretation of communication signals for effective learning process (eye contact: $r=.488$, $P=.000$; facial expressions: $r=.182$, $P=.000$; paralanguage: $r=.151$, $P=.000$; body movements: $r=.076$, $P=.000$; physical appearance $r=.060$, $P=.000$).

Conclusion and Discussion

The study reported that non-verbal signals used by the teachers facilitated the students' learning process and affected the learning outcomes. The teachers were aware of the importance of non-verbal communication cues to affect learning process but they were not using it as a technique to effect the learning of students positively.

The study corroborated literature (Pennington, 2021) as it was deduced from the findings that most of the teachers were aware of the importance of physical appearance as an important tool in the teacher – student interaction. They used reasonable accessories and observed cleanliness. However, some teachers did not use sophisticated appearance and neat looks as a tool to inspire the students to follow them. With reference to students' response on physical appearance, it was deduced that most of the students noticed the dressing of their teachers and gave a more favorable response to attractive and sophisticated teachers which might have resulted in adopting this quality by the students.

With reference to teachers' responses on facial expressions, it was concluded from the study that most of the teachers used facial expressions while delivering the verbal message but did not control their emotions of anger or disliking for a response of student during the lesson which might have a negative effect on the minds of students. Moreover, facial expressions of many teachers were not soft during the lesson which might have discouraged the students to ask questions or problems and thus resulted in low participation level of students. In addition, a considerable number of teachers ignored facial gestures of students as a tool to further improve their teaching style. With reference to students' responses on facial expressions, it was concluded that students found lack of soft facial expression by the teachers during lesson which might have worked as a barrier in the teacher-student communication. Findings supported other research (York, 2015) that students were not reflective on the understanding of the lesson and teacher's angry look discouraged them to participate fearlessly.

With reference to teachers' responses to eye-contact, it was inferred that a noticeable number of teachers did not use eye contact as a technique to get feedback of the lesson from students. Moreover, some teachers did not engage the students in the lesson who avoided an eye contact with them which might have made them duller. With reference to students' responses to eye-contact, it was drawn that dull students suffered due to lack of eye-contact of their teachers who developed more eye-contact with the good or bright students. Lack of teacher's eye-contact also made the back-benchers dull and passive because they thought their presence was not felt by the teacher. It was more used to maintain discipline in the classroom rather than engagement in the learning activities.

With reference to teachers' responses to body language, it was concluded that most of them did not use a variety of body gestures—like hand movements, arm movements and head nods—to facilitate the process of learning which showed lack of awareness and expertise. Moreover, they also ignored body

language of the students to get feedback of the lesson. The study also highlighted that many teachers preferred sitting in the chair which might have resulted in ignoring the students sitting at the back. With reference to students' responses to body language, it was concluded that they became active and alert in the class when the teacher moved towards them. However, many students found the teachers sitting in the chair for a longer duration during lesson which might have made the students relaxed and disinterested in the lesson.

With reference to teachers' responses on paralinguistic, the conclusion was drawn that a large number of teachers did not increase or decrease their pitch of voice to facilitate the learning process of students. Furthermore, many teachers used aggressive tone in response to the irrelevant queries of the students which might have discouraged the students for further questioning, thus they were left dissatisfied for being unanswered. In addition, rate of speaking and volume of teachers was found moderate in almost all the teachers which resulted in proper comprehension of the lesson. With reference to students' responses on paralinguistic, the conclusion was drawn that a large number of students were de-motivated due to the dull tone of the teachers. It was also concluded that most of students could not answer the queries due to strict tone of the teacher which might have decreased their participation level during lesson. Moreover, most of the students found the volume and rate of speaking of their teachers at a comfortable level.

Research proved that if teachers are confident about their dressing and physical appearances then they are much confident about delivering their lecture to their students. Physical appearance is important not only for teachers but also for students who noticed their teachers' dressing. Soft facial expressions improved teaching and learning style. Anger on teachers' face discouraged the students and smile motivated the students. As eye contact is a tool to maintain discipline in class. Students also agreed that they got disliking signals from teachers if students created disturbance. Body movement had a positive effect as students felt dull if teachers tried to sit in class and teachers also felt fresh while walking during lesson. If teacher used a variety of body movements then it made lecture interesting and students felt comfortable in lesson due to moderate voice and volume of teachers which developed better understanding of the lesson.

Recommendations

Following recommendation were suggested to improve the pedagogic practices for better learning outcomes.

1. Introducing pre-service and in-service teacher training programs to realize the importance of non-verbal communication may provide platform to the teachers to get them skilled in the art of communication.
2. Teachers may use facial expressions purposefully not only to reflect the positive feelings of appreciation, , encouragement, happiness and enthusiasm but also to control the negative feelings like anger, aggressiveness, and disliking for effective teaching. Further, they may also use facial expressions as a tool to judge the understanding level of students.
3. Teachers may use eye contact to approach the students at distance and to ensure active participation of all the students rather than a few favourites in the class.
4. Teachers may use a variety of body movements to facilitate the understanding of difficult concepts. It will not only increase the participation level of the students but also decrease the dropout rate at secondary school level.
5. Teachers may avoid monotone and use a variety of tones while teaching for proper understanding of the students. Teachers may also use pitch as a technique to emphasize or deemphasize certain ideas during the lesson. Rise and fall in the pitch of voice may also be used in teaching poetry for better comprehension of the lesson.
6. The skill of non-verbal communication may also be incorporated in the supplementary material by the textbook board to make the students aware of the importance and interpretation of non-verbal communication.

Implications

The proposed suggestions will help the researchers, administrators, planners, teachers and students to find the relationship between verbal and non-verbal communication in the teaching- learning process. Using a variety of non-verbal signals by teachers may help the students to comprehend the concepts better and engage in the co-creation of knowledge. It will encourage the teachers not only to have an orientation in non-

verbal communication but also to utilize the acquired skill in their teaching practices. It will also help the policy makers to realize the worth of non-verbal communication and make it a part of the teacher education programs so that the prospective teachers can be trained in this important skill.

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Factor analysis

No.	Factors	Items	Factor loadings	Cronbach's Alpha
1	Physical Appearance	You think that physical appearance plays an important role in the interpersonal encounter between teacher and student.	.773	0.987
		You understand that your students notice your dressing when you enter the class.	.619	
		Your sophisticated appearance helps to get more favourable responses from students in a classroom.	.832	
		You use reasonable accessories because too many accessories work as a barrier in the communication process.	.973	
		Your neat look motivates the students to observe cleanliness in the school hours.	.813	
		You mostly notice the physical appearance of your teacher the moment he/she enters the class.	.654	
		Attractive appearance of your teacher motivates you to have a positive attitude towards him/her.	.694	
		You feel dull in the class because of dull appearance of your teacher.	.600	
		Your teacher uses reasonable accessories which do not divert your attention during lesson.	.787	
		You dress up neatly for school because your teacher is always dressed nicely and expects the same from you.	.532	
		You mostly use soft facial expressions like a smile to motivate students to participate more comfortably.	.806	
		You think that anger on your face discourages the students to ask questions in the class.	.519	

2	Facial Expressions	You often reflect through facial expressions that the students are doing good work.	.836	0.876
		You mostly judge the students' understanding of the lesson through their facial expressions.	.785	
		Students' facial expressions help you to improve your teaching style.	.757	
		Your teacher has soft facial expressions which motivate you to ask question or problem in hand.	.676	
		Your performance in the class is reflected through different expressions on the face of the teacher.	.782	
		You show your understanding of the concepts through your facial expressions in the classroom.	.659	
		Your teacher reads your facial expressions during lesson and repeats difficult concepts if you are unclear.	.762	
		Teacher' facial expressions help you to improve your learning style.	.970	
3	Eye Contact	You use eye contact as a tool to maintain discipline in the class.	.884	0.902
		You use eye contact to monitor feedback from the students while teaching.	.671	
		You usually engage the students who avoid an eye contact during the lesson.	.786	
		You use eye contact as a technique to save time in the class.	.675	
		You prefer an angry look than abusing the students verbally for a negative response.	.598	
		You give feedback to the teacher about the lesson taught through an eye contact.	.987	
		Your teacher engages you in the lesson whenever you avoid an eye contact with him /her.	.976	
		You understand when the teacher's eye contact signals disliking.	.845	
		Your teacher uses regular eye contact to make you attentive in the class.	.765	
		Your teacher's eye contact motivates you to show involvement in the lesson taught.	.567	
4	Body Movement	You use body language to facilitate the teaching -learning process.	.923	0.899
		You use a variety of body movements (like head nods, position of arms, movement of hands etc.) in class.	.854	
		You prefer walking in the class because it makes your students active.	.765	
		You avoid sitting in the chair while teaching to remain fresh.	.569	
		You study body movements of students to get feedback of the	.778	

		lesson taught.		
		Your teacher moves constantly in the class during the lesson.	.981	
		Your teacher often sits in the chair during teaching which makes you dull in the class.	.909	
		You become alert when your teacher moves towards you in the class.	.765	
		You understand that the teacher gets through your body gestures whether you have got the lesson or not.	.543	
		You understand some points better when your teacher illustrates them with hand movements.	.657	
5	Paralanguage	You often increase or decrease your pitch of voice to stress or un stress certain points while teaching.	.832	0.845
		You use a moderate volume according to the number of students in the class.	.982	
		You use moderate rate of speaking (neither too fast nor too slow) for proper understanding of students.	.900	
		You use soft tone during teaching to encourage students to participate more in the lesson.	.712	
		Your fresh tone during teaching makes the classroom environment alive.	.854	
		You like the way your teacher talks.	.798	
		The volume of teacher in the class is comfortable enough to understand the lesson properly.	.600	
		Your teacher speaks with medium speed during the lesson which helps you to understand the concepts comfortably.	.599	
		Your teacher encourages you to participate in the class with a soft tone.	.943	
		Fresh tone of your teacher motivates you to do work enthusiasm.	.967	

Appendix B

Descriptive Analysis

1. Physical Appearance

	Items	SA	A	UD	DA	SD
	You think that physical appearance plays an important role in the interpersonal encounter between teacher and student.	23	58	1	16	3
	You understand that your students notice your dressing when you enter the class.	20	65	2	11	4
	Your sophisticated appearance helps to get more favourable responses from students in a classroom.	22	65	0	6	7

Teacher	You use reasonable accessories because too many accessories work as a barrier in the communication process.	59	34	3	4	0
	Your neat look motivates the students to observe cleanliness in the school hours.	40	40	2	12	6
Student	You mostly notice the physical appearance of your teacher the moment he/she enters the class.	20	62	3	6	9
	Attractive appearance of your teacher motivates you to have a positive attitude towards him/her.	16	60	4	8	12
	You feel dull in the class because of dull appearance of your teacher.	15	25	6	38	16
	Your teacher uses reasonable accessories which do not divert your attention during lesson.	18	53	5	11	13
	You dress up neatly for school because your teacher is always dressed nicely and expects the same from you.	12	52	3	20	13

2. Facial Expression

	Items	SA	A	UD	DA	SD
Teacher	You mostly use soft facial expressions like a smile to motivate students to participate more comfortably.	7.5	45	2	30	15
	You think that anger on your face discourages the students to ask questions in the class.	12	53	2	21	12
	You often reflect through facial expressions that the students are doing good work.	18	43	5	22	12
	You mostly judge the students' understanding of the lesson through their facial expressions.	17	62	0	12	9
	Students' facial expressions help you to improve your teaching style.	19	36	5	25	11
	Student	Your teacher has soft facial expressions which motivate you to ask question or problem in hand.	9	51	4	24
Your performance in the class is reflected through different expressions on the face of the teacher.		11	49	9	20	11
You show your understanding of the concepts through your facial expressions in the classroom.		10	50	2	28	10
Your teacher reads your facial expressions during lesson and repeats difficult concepts if you are unclear.		14	44	8	13	21
Teacher' facial expressions help you to improve your learning style.		11	59	3	19	8

3. Eye Contact

	Items	SA	A	UD	DA	SD
	You use eye contact as a tool to maintain discipline in the class.	35	29	7	15	14
	You use eye contact to monitor feedback from the students while	19	42	4	18	17

Teacher	teaching.					
	You usually engage the students who avoid an eye contact during the lesson.	19	34	3	29	15
	You use eye contact as a technique to save time in the class.	23	28	10	18	21
	You prefer an angry look than abusing the students verbally for a negative response.	35	27	4	13	22
Student	You give feedback to the teacher about the lesson taught through an eye contact.	9	59	0	18	14
	Your teacher engages you in the lesson whenever you avoid an eye contact with him /her.	27	18	5	45	13
	You understand when the teacher's eye contact signals disliking.	12	47	0	14	21
	Your teacher uses regular eye contact to make you attentive in the class.	19	59	6	12	4
	Your teacher's eye contact motivates you to show involvement in the lesson taught.	29	27	4	15	25

4. Body Movement

	Items	SA	A	UD	DA	SD
Teacher	You use body language to facilitate the teaching -learning process.	17	37	5	27	14
	You use a variety of body movements (like head nods, position of arms, movement of hands etc.) in the class.	12	60	0	15	13
	You prefer walking in the class because it makes your students active.	20	67	1	7	5
	You avoid sitting in the chair while teaching to remain fresh.	7	53	0	26	14
	You study body movements of students to get feedback of the lesson taught.	12	47	11	16	14
	Student	Your teacher moves constantly in the class during the lesson.	10	48	4	16
Your teacher often sits in the chair during teaching which makes you dull in the class.		11	39	2	27	21
You become alert when your teacher moves towards you in the class.		32	28	4	29	7
You understand that the teacher gets through your body gestures whether you have got the lesson or not.		21	57	5	9	8
You understand some points better when your teacher illustrates them with hand movements.		72	6	2	8	12

5. Paralanguage

	Items	SA	A	UD	DA	SD
	You often increase or decrease your pitch of voice to stress or un stress certain points while teaching.	33	27	9	15	16

Teacher	You use a moderate volume according to the number of students in the class.	37	52	3	6	2
	You use moderate rate of speaking (neither too fast nor too slow) for proper understanding of students.	17	59	6	14	4
	You use soft tone during teaching to encourage students to participate more in the lesson.	22	52	6	14	15
	Your fresh tone during teaching makes the classroom environment alive.	20	42	4	19	15
Student	You like the way your teacher talks.	2	38	6	35	19
	The volume of teacher in the class is comfortable enough to understand the lesson properly.	19	59	3	9	10
	Your teacher speaks with medium speed during the lesson which helps you to understand the concepts comfortably.	20	58	5	14	3
	Your teacher encourages you to participate in the class with a soft tone.	9	40	2	38	11
	Fresh tone of your teacher motivates you to do work enthusiasm.	11	42	5	39	3