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STUDY OF SOCIO-EMOTIONAL ENVIRONMENT OF AN INDIAN SECONDARY SCHOOL CLASSROOM THROUGH INTERACTION ANALYSIS

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Abstract:

The Indian Education system supports child-centered teaching and learning where the environment of a classroom has to be socially and emotionally motivating for the students and therefore, teachers' verbal behaviour plays a crucial role in building interactive teaching sessions for any classroom. In the midst of curriculum completion, the classroom's environment becomes a tensive platform for most of the students to interact with the teachers and they lose interest in the studies. Therefore, teachers of our Indian schools and colleges need to be assessed regularly and to be trained accordingly to improvise their teaching techniques and to bring new innovative teaching and learning ideas for their students. The paper presents the study that was carried out in an Indian secondary school based near Delhi NCR to review teachers' classroom behaviour and the teachers-students interaction through Flanders interaction analysis system. With the technique, quantitative and qualitative aspects of teacher's verbal behaviour in the classroom were studied. This technique was chosen as an observational system by an observer. The observer studied the verbal behaviour of teachers and students that were directly related to the social – emotional environment of the classroom. Also, the objective of the study was an advocacy for using Flanders interaction analysis in public schools as the quantity and quality of teacher and student interaction was an important aspect of an effective classroom teaching and enriched learning.

Key Words: Interaction Analysis, Teacher's Behaviour, Students' Behaviour, Indian Schools, Classroom Interaction & Learning Environment

Introduction:

In an educational setting, when we discuss on defining the term, 'classroom environment', it would cover physical settings, psychological environment which is created through social contexts and instructional components related to teacher characteristics and behaviors in the classroom. To understand various constructs like learning, engagement, motivation, social relationships, and group dynamics, scholars have been studying relationships between them. Today, with the advent of digital technology, there has been dynamic change in teaching methodologies which teachers must adapt to and moreover, with importance placed on school-wide performance to exhibit school success in terms of annual academic progress of students, teachers have enormous pressure to work on high scores at the same time. In these circumstances, the teacher- student interaction needs more attention at socio-emotional level for successful learning by the student. The important key players in a classroom are students and the teacher, therefore, beyond the physical setting of a classroom a psychological environment is also created, based on the interaction of these two key players in the classroom. There has been varied research carried out in this area and proliferated during the early twenty-first century. The studies in Indian scenario were more focused on student class participation rates, teacher support, and communication of learning goals. Student's development is not possible until school doesn't work on teacher's development that plays important in the classroom environment. As per NDTV, news channel, in their published survey dated 4th December 2017 stated about teacher's crisis and that India lacks one million school teachers. "In December 2016, Union Minister for Human Resource Development Shri Prakash Javadekar, in reply to a question raised in Lok Sabha had informed that in India at the Elementary level, a 17.51% post for government teachers was vacant and for Secondary level, 14.78% posts were vacant." (https://www.ndtv.com/education, Delhi, December 2017). This shortage of teachers has increased emotional and physical pressure on the working teachers from the state and school authorities and it has been affecting the classroom environment. The problems need to be dealt by the schools with right observational tools and assessment.

The role of teacher in a classroom is the most prominent one in creating a positively interactive classroom environment. It is based on teacher behaviors, teaching skills, along with teacher's competency level in the specific subject. Teacher's professional development is only possible with regular assessment on two important aspects, i.e. classroom interaction and behaviour of the teacher. Teacher's behaviour in a classroom can act as catalyst towards effective classroom interaction to build better relationships with students. Theoretically, teacher's behaviour is broadly classified in two categories: dominant and integrative. The

dominant behaviour, teacher position is active on lecturing, on explanation, text-reading and elaboration on the topic, where students' role is passive. In the integrative behaviour, by asking questions from the students, initiating direct interactions, accepting and repeating ideas of the students in the class.

Prior to the experiment in the secondary school, the study of literature survey covered research based theories on teacher's behaviour and classroom interaction. According to Ryans, "The term teacher behavior in this may be defined as the behavior or activities of persons as they go about doing whatever is required of teachers particularly those activities which are concerned with the guidance and direction of the learning activities of the students." (Ryans, D. G., 1956, pp. 462-475). A teacher while teaching in a classroom performs many actions and interacts with the students. Therefore, 'teacher behavior' can be defined as a role which a teacher plays for an overall development of the students. There are four main types of teacher behaviour, namely direct, indirect, non-verbal and verbal behaviors. In direct behavior, the teacher directly gives instructions and directions to his students to bring desirable change in their behavior and to achieve the objectives of teaching learning process. It includes lecturing giving instructions information's and demonstration. In Indirect, behavior a teacher works as a motivator or catalytic agent. It includes the satisfaction of students' curiosity to solve the questions asked by pupils and to analyze the work done by them. Teachers' verbal behavior is expressed through the medium of language. The expression of this type of behavior is either in oral form or written form. Teachers' non-verbal behavior includes the use of chalk board to draw painting to use various types of teaching aids physical movements gestures to teach the lesson in the classroom.

A number of techniques are being used currently in India as well as in other countries for observing of teachers' behaviour like Simulated social skill teaching, Micro teaching, Programmed instruction, T- Group training and Interaction analysis. The simulated social teaching, developed by Cruick Shank (1968) has been represented by several terms such as role playing, artificial teaching, pilot training, laboratory method, clinical method and inductive scientific method. The simulation technique is used to induce certain behaviors in artificial situation and the teacher has to play several roles as a teacher, as a student and as a supervisor. Cruick Shank considered this teaching paradigm with Diagnosis, Prescription and Evaluation. Similar to Simulated social skill teaching, Micro teaching was originated at Stanford University in 1963 for the modification of teacher behaviour. According to Prof. Allen, Micro teaching is a scaled down teaching encounter in class size and period."Basically, a "scaled down teaching encounter**"** in which a teacher teaches a small unit to group 5 to 10 students for a small period of 5 to 10 a student for a small period of 5 to 10 minutes and one teaching skill is practiced during the teaching. Programmed instruction, as stated by Susan Markel, "It is a method of designing a reproducible sequence of instructional events to produce a measurable and consistent effect on the behaviour of each and every acceptable student." It includes the following Principles of small steps, active responding, immediate feedback, self- pacing and of student testing. During teaching practice the pupil teachers are asked to teach a lesson by following the traditional approach of lesson planning. The classroom teaching is recorded or evaluated. The T-group training developed by Bethel and Mine in 1947, is also an observation device for the modification teacher behaviour. T-Group consists of eight to twelve trainees and its meeting continues for two or three hours where they discuss solutions on the basis of their experiences. It is used as a mechanism of observation and feedback device for the modification of teacher behaviour and helpful for developing social relations. The last technique among all is the interaction analysis for analyzing and observing the classroom behaviour. It provides the structure, components and flow of behaviour of classroom activities. Also used as a mechanism of feedback device for the observation and modification of teacher behaviour. In India, pupil's teachers are trained in both theory and practice of interaction analysis for using it as an observation and feedback device. The teacher and observer are well acquainted with encoding and decoding process of interaction analysis. The record sheet of classroom observation should begiven to the teacher to decode her/his own behaviour by preparing the matrix table and it provides her/him own teaching components and flow of behaviour. The interaction analysis as an observation device may be useful for developing the following teaching behaviour in terms of the verbal interaction of the classroom more effective and interesting, Students' participation can be increased by the teacher in his teaching, teacher may shift his direct behaviour into indirect behavior, creative behaviour patterns can be developed by giving the awareness and the practice of interaction modes and the technique can be used with another feedback device like micro teaching and simulated teaching. Like Ober defined interaction analysis as 'systematic observation representing useful means of identifying, classifying, studying and measuring specific variables as they interact within the instructional learning settings'. By this classroom problems or challenges and the root cause can be identified to work on the solutions of it.

According to Dr. S.K. Thakur classroom interaction analysis "may be defined as an instrument which is designed to record categories of verbal interaction during, or form, recorded teaching learning sessions. It is a technique for capturing qualitative and quantitative dimensions of teachers' verbal behaviour in the classroom."

Dr. Satya Pal Ruhela (2002), in his book 'Educational Technology' writes that class interaction analysis may be conveniently divided into two parts. In the classroom, interactive process is initiated by the teacher by communicating new ideas, information, and behaviour skills to the students by interacting with them.

The students participate actively through continuous interaction during the session process of teaching and learning. Therefore, the verbal and non-verbal activities with the students are known as classroom interaction. In verbal classroom interaction messages, information's, instructions are exchanged in the class through talks, lectures, conversations, discussions, story- telling, narration in a language known to the students. Wherein, non-verbal classroom interaction deals with symbolic, non-symbolic, and spontaneous or managed expressions, eye-contact, body postures, gestures, conversational silences.

Need of the Study:

With the dearth of teachers today in India has affected the teaching quality in schools. The state and the schools need to prepare and train the working and available teachers, so that no child feels left out in darkness of ignorance or think to quit learning. Every student gets the maximum benefit of the knowledge taught by the teachers. Schools need to use methods of improving their teachers' skills rather than making them laborers of burden, where the sufferer are the students in the end. Among all the observation methods discussed above, for Indian secondary schools where classrooms have multi-ethnic and multilingual students. The best fit method for analyzing and improving is the Interaction Analysis is also one of the observation devices. The activities of a teacher which he/she performs in the classroom can be observed, and his/her drawbacks (limitations) can be removed. To increase the effectiveness of the teachers, the study was undertaken. The subsequent section of methodology covers insight on interaction analysis technique developed by Ned A. Flanders known as Flanders System of Interaction Analysis (FIA) and analysis of the observations collected based on FIA technique.

Objective of the Study:

Through Flanders' system of interaction analysis (FIA), to identify specific behavior of the teachers by observation and recording. Collect relevant data and find remedial course of action and strategies to work on the issues affecting socio-emotional learning environment of the classroom.

Methodology:

Classroom interaction analysis refers to a technique consisting of an objective & systematic observation of the classroom events for the study of teacher's classroom behaviour and also the process of interaction going inside the classroom. It assists a teacher to bring desirable modifications in teaching behaviour and to improve interaction with students for making the teaching process more purposeful and effective. Interaction analysis is specialized research procedure that provides information about only a few of the many aspects of teaching. It is an analysis of spontaneous communication between teacher and students, and it is of no value if no one is talking or if teacher talks continuously, or if student reads from a book. It essentially consists of the process of encoding and decoding. By the process of encoding the classroom events are recorded in a meaningful way; while the process of decoding arranges the data into a useful display and then analysis the results in order to study patterns of teacher behaviour and classroom interaction. Thus interaction analysis works as a standardized observation tool and analysis technique for identifying the patterns of teacher behaviour and analysis classroom interaction between the teacher and the students.

Ned A. Flanders' developed the technique of classroom interaction analysis in 1960 and refined it in 1970 at the University of Minnesota. The flow of the classroom events can be recorded and analyzed systematically and objectively. According to Flanders, the purpose of the interaction analysis is to help the teacher to develop and control his teaching behavior and to investigate the classroom interaction and patterns of teaching events. It is concerned primarily with verbal behavior. This can be observed with high reliability than non-verbal behavior. In interaction analysis, it is theoretically assumed that verbal statements of a teacher are consistent with his/her non-verbal gestures. The relation between students and teacher is considered as a crucial factor in the teaching process and is an important aspect of methodology and Teacher influence is expressed primarily through verbal statements. Non –verbal acts of influence do occur, but are not recorded through interaction analysis.

Flanders' Interaction Analysis Categories (FIAC):

Flanders' analysis is also called as Reciprocal Category system as it attempts to categorize all the verbal behavior observed in a classroom where teacher's behaviour would act as stimulus for students' behaviour and vice versa. Therefore, it has two main categories or groups. Teacher talk and Students talk. A third category covers other verbal behaviour, the Silence or Confusion. An outline of entire verbal behaviour comprising of ten categories is given as:

Table of the 'Ten FIACcategories of the Verbal Behaviour in a classroom Interaction'

Teacher Talk		**Student Talk**		
Indirect 1. Accepting feelings. 2. Praising & Encouraging 3. Accepting ideas 4. Asking questions	Direct 5. Lecturing 6. Direction 7. Criticism and Justifying Authority	8. Response	9. Initiation	10. Silence & Confusion

The categories' description areas following:

The 'Teacher Talk - Indirect Influence' (Response)

- Accepts feelings: Accepts and clarifies the feeling tone of the students in a non Threatening manner. Feelings may be positive or negative.
- Praises or encourages: Praises or encourages student's action or behaviour in this category i.e. nodding head, saying yes, fine, good, excellent etc.
- Accepts or uses ideas of students: Clarifying, building or developing ideas as suggested by the student. Teacher extension of pupil ideas is included but as the teacher brings more of his own idea into play and shift to category 5.
- Asks Questions: Asking a question about content or procedure with the intention that a student answers.

The 'Teacher Talk – Direct Influence' (Initiation)

- Lecture: Giving facts or opinion about content or procedure, expressing his own Ideas, giving his own explanation, or citing an authority.
- Giving directions: Directions, commands or orders with which a student is expected to comply.
- Criticizing or justifying authority: Statements intended to change students' behaviour from non-acceptable to acceptable patterns: bowling someone out, stating what the teacher is doing, what he is doing, and extreme self-reference.

The 'Student Talk' divided in two.

- Student's talk- response: Talk by students in response to teacher. Teacher Initiates the contacts or solicits the student statement or structures the situation. Freedom to express own ideas is limited.
- Student talk-initiation: Talk by students which they initiate voluntarily expressing own ideas, initiating a new topic, freedom to develop one's opinions and a line of thought, like asking thoughtful questions; going beyond the existing structures.

The 'Silence or confusion': These are the pauses, short periods of silence and periods of confusion in which the observer cannot understand the communication.

In this system, all teachers' statements are either considered indirect or direct. This classification gives central attention to the amount of freedom the teacher gives to the student. In a given situation the teacher can be direct, that is minimizing the freedom of the student to respond which depends teacher's lesson plan goals. In order to make the total behaviour or total interaction in the classroom meaningful, the Flanders system categorizes students talk and the last section of silence or confusion is included in order to account for the pauses, short periods of silence and periods of confusion in which communication cannot be understood.

Planned Procedure of Using the Flander's Instrument (FIA) by the Observer in the Class:

There are following two processes of interaction analysis: Encoding or Observation and recording of verbal behaviour and Decoding with Construction and Interpretation of interaction matrix tables.

Encoding Process: In this, categories for classifying statements are established a code symbol. A symbol is assigned to each category by the trained observer. The trained observer is impartial neither known to the students nor to the teacher and record at every 3 seconds is an event recognized. The observer sits on the last bench of the classroom when teacher is teaching. At an interval of every three seconds he writes down that category number which best represents are communication event that teacher just completed. For instance, when teacher is lecturing on the topic the observer puts 5; when he asks question, the observer codes the event 4; when students replies, coding as 8.Therecording procedure of the events goes on at the 20 to 25 observations per minute.

Decoding Process: It is divided into two steps, first is the construction of the matrix table and next is the interpretation of it.

Construction of Interaction Matrix Tables: After encoding the classroom events into ten-category system 10x10 matrix table is prepared for decoding the classroom verbal behaviour. The interaction matrix table consists of 10 rows and 10 columns. The generalized sequence of the student teacher interaction can be estimated in this matrix table. It indicates what events proceed and what follow. The two continuous categories from a pair, thus, a tally are marked in a particular cell. The first number in the pair indicates the row and second number shows the column.

Interpretation of Interaction Matrix Table: Interaction analysis is studied through observation, encoding, tabulating and then decoding. The interpretation is based on calculations in percentages and ratios as following:

The proportion of teacher talk, student talk, and silence or confusion: The proportion of tallies in columns 1, 2, 3, 4, 5, 6 and 7; columns 8, 9 and column 10 to the total tallies indicates how much the teacher talks, the student talks and the time spent in silence or confusion.

The ratio between indirect influence and direct influence: The sum of column 1, 2, 3, 4, divided by the sum of columns 5, 6, 7 gives this ratio. If the ratio is 1 or more than 1, the teacher is said to be indirect in his behaviour. This ratio, therefore, shows whether a teacher is more direct or indirect in his teaching.

The ratio between positive reinforcement and negative reinforcement: The sum of columns 1, 2, 3 is to be divided by the columns 6 and 7. If the ratio is more than 1 then the teacher is said to be good.

Student's participation ratio: The sum of columns 8 and 9 is to be divided by total sum. The answer will reveal how much the students have participated in the teaching-learning process.

Participants: Total Four teachers teaching VI and VIII classes of an English medium CBSE affiliated senior secondary school located near Delhi NCR region participated in the study. As they requested, their identities were kept anonymous and real names were changed. The subjects taught were science and English. The teachers were really interested in improvising their interactive skills for academic betterment of their students in Science and English. The strength of the students in the class were between 35 and 40.

Data Analysis and Findings: The section covers four observations of four teachers and their students, labeled as observation 1, 2, 3 and 4.The total duration for each observation recorded in the classroom = 20 minutes

Observation	Teacher's name	Class taught	Subject	Topic	Date	Total students	Observer
1	Babita Sharma	VIII A	Science	Source of Energy	02.02.2017	35	Deepika
2	Anita Singh	VI-A	Science	Crop Production	02.02.2017	39	Deepika
3	Suman Tyagi	VI-A	English	Type of Verbs	06.02.2017	39	Deepika
4	Sushma Shankaran	VIII-A	English	Speeches	06.02.2017	36	Deepika

Interpretation of Behaviour Ratios: The indices of behaviour ratios are meaningless unless these are interpreted against the norms i.e. the standard normative expectations as developed by Ned Flanders for grade VI, VII, VIII. Table shows comparison of standard normative expectations and those found out for classes VI and VIII for all the four observations recorded below:

	Behaviour Ratios	Standard Indices (in %) by Ned Flanders	Observations - Calculated (in %)			
			1	2	3	4
1	Teacher Talk Ratio (TTR)	67	68.1	66.5	80.7	68.1
2	Student Talk Ratio (STR)	21	19.4	18.5	10.6	19.4
3	Silence/Confusion (S/C)	12	12.2	14.9	8.9	12.2
4	Teacher Response Ratio (TRR)	26	51.6	56.8	65.2	51.6
5	Teacher Question Ratio (TQR)	19	23.7	25.1	14.0	23.7
6	Student Initiation Ratio (SIR)	12	8.3	23.73	3.95	17.28
7	StudentSteady State Ratio (SSSR)	37	16.04	75.12	52.49	36.38
8	Content Cross Ratio (CCR)	72	78.8	13.0	16.2	16.04
9	Instantaneous Teacher Question Ratio (ITQR)	42	31.8	52.64	75.0	53.73
10	Instantaneous Teacher Response Ratio (ITRR)	48	92	34.2	22.7	31.2

Discussion:

For Observation 1: According to the Normative expectations of the Behaviour ratios for good performance of the teacher; the student talk ratio, teacher response ratio, student initiation ratio, student steady state ratio and instantaneous teacher Question ratio should be greater than the given standard norms, whereas the performance is ineffective if the teacher talk ratio, silence or confusion ratio, content cross ratio, steady state ratio and instantaneous teacher response ratio are higher than their normative standard values. Here, considering these above statements, the performance of the teacher under observation 1 was satisfactory.

Feedback/Suggestions:

- The teacher should be encouraged to participate in the classroom activities and allowed free environment to put initiative questions.
- The teacher should try to limit her role or activities in response to student's talk.
- The teacher's activities related to Questions and lecturing should be proportionate with the student's participation.

For Observation 2: According to the Normative expectations of Behaviour ratios for good performance of teacher: the student talk ratio, teacher response ratio, student -initiation ratio, student steady state ratio and instantaneous teacher Question ratio should be greater than the given norms. The performance is ineffective if

the teacher talk ratio silence or confusion ratio, content cross ratio, steady state ratio and instantaneous teacher response ratio are higher than their normative values. Under observation 2, considering these statements, the performance of the teacher was average.

Feedback/Suggestions:

- Involvement of the students in classroom activities should be increased.
- Students should be encouraged to ask questions and to take initiative in the discussions.
- The teacher should decrease the questioning and lecturing time and increase classroom discussion time.

For Observation 3: According to the Normative expectations of Behaviour ratios for good performance of teacher: the student talk ratio, teacher response ratio, student -initiation ratio, student steady state ratio and instantaneous teacher question ratio should be greater than the given norms.The performance is ineffective if the teacher talk ratio silence or confusion ratio, content cross ratio, steady state ratio and instantaneous teacher response ratio are higher than their normative values. Here in observation 3 as per above statements, the performance of the teacher was unsatisfactory.

Feedback/Suggestions: The teacher should increase students' involvement in classroom activities.

- The teacher should use questions while guiding content oriented part of classroom discussion.
- The teacher should decrease his authoritarian behaviour during classroom interaction
- The teacher should pay attention towards classroom discussion rather than simple questioning and lecturing.

For Observation 4: According to the Normative expectations of Behaviour ratios for good performance of teacher, the student talk ratio, teacher response ratio, student -initiation ratio, student steady state ratio and instantaneous teacher question ratio should be greater than the given norms, whereas, the performance is ineffective if the teacher talk ratio silence or confusion ratio, content cross ratio, steady state ratio and instantaneous teacher response ratio are higher than their normative values. For observation 4, as per above statements, the performance of theteacher was satisfactory.

Feedback/Suggestions:

- The teacher should be encouraged to participate in the classroom activities as a facilitator.
- The teacher should try to limit her role in response to student's talk.
- The teacher's activities related to questions and lecturing should be proportionate with the student's participation.

Policy Implications of the Study: According to the Census of India of 2001, India has 122 major languages and 1599 other languages. In Indian scenario where schools have multilingual students, nature of classroom interaction created by the teacher matters the most. Well-trained teachers supported and encouraged by the schools can handle the pressure with perseverance and creativity. Apart from being academically competent, the teachers need to understand the interactive process especially in a classroom of adolescents. According to India's Education commission (1964-66) teacher – education programme was required so that teachers can be effective and they are trained periodically with new teaching innovations and current practices as these methods were effective in bringing excellence in teaching. There are various methods that deals with the different problem of teaching practice and are useful developing different skills and behaviour pattern. These assessment devices like FIAC are useful for developing effective teachers and the findings of the study highly recommends that CBSE should systematize schools to hire well-trained external observers for interaction analysis and submit quarterly reports to them.

References:

1. Bronfenbrenner, U. Toward ecology of human development. American Psychologist, 32, 513–531, 1977.
2. Fraser, B. Learning environments research: Yesterday, today, and tomorrow. In S. C. Goh & M. S. Khine (Eds.), Studies in educational learning environments: An international perspective (pp. 1–26).2002.
3. Moos, R.Evaluating educational environments: procedures, measures, findings and policy implications. San Francisco: Jossey-Bass. 1979.
4. Patrick, H., Ryan, A., & Kaplan, A.Early adolescents' perceptions of the classroom social environment, motivational beliefs, and engagement. Journal of Educational Psychology, 99, 83–98. 2007.
5. http://www.education.com/reference/article/classroom-environment/ accessed October 30th 2018
6. Ryans, D. G. Theory development and the study of teacher behavior. Journal of Educational Psychology, 47(8), 462-475. 1956.
7. Ryans, D. G. Teacher Behavior Theory and Research: Implications for Teacher Education. Journal of Teacher Education, 14(3), 274–293.1963.
8. Sampath K., Panneerselvam A. & Santhanam S. Introduction to Educational Technology, Sterling Publishers Private Limited, New Delhi (pp 53-64).2007.
9. Dr. Y.K. Singh, Dr. T.K. Sharma & Dr. Brijiesh Upadhaya, Educational Technology: Teaching Learning, APH Publishing Corporation, New Delhi (pp 263-280). 2008.

10. Ruhela Satya Pal, Education Technology, Indian Publishers Distributors, Delhi (India), 2002.
11. Amidon, E. Interaction Analysis. Theory Into Practice, 7(5), 159-167. 1968.
12. Amidon, Edmund J. Hough, John B, Interaction analysis: Theory, research and application. Addison-Wesley Publishing Company, 1967.
13. Ober, Richard L. Predicting student teacher verbal behaviour. Classroom Interaction Newsletter 2, 39-40, 1967.
14. Flanders, N. Analyzing Teacher Behaviour. Addison-Wesley: Reading, 1970.
15. http://cbseacademic.nic.in/ Accessed October 20th, 2018
16. http:// www.hindustantimes.com, in 5 years, private schools gain 17 million students, government schools losemillion. Accessed 17 April 2017.
17. http://www.nuepa.org.Accessed December 6th2016.