CONCEPTUAL ASPECTS OF FLANDER'S INTERACTION ANALYSIS CATEGORY SYSTEM (FIACS) TECHNIQUE

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ABSTRACT

Flander's Interaction Analysis Category System (FIACS) is a process of encoding and decoding the study pattern of teaching and learning process of classroom. The systematic observation is a set of procedures. It uses a system of categories to encode and quantifies classroom behaviour of teacher and students. The systematic observation represents a useful means of identifying, studying, classifying and measuring specific variables as they interact within instructional learning situation. The purpose of developing the observational system is that a teacher can be trained to use them for analyzing classroom behaviour and for planning and studying his own teaching activities. Since 1960, the efforts have been made in this direction to develop the systems of observation. The works of with all (1949), Ned A. Flanders and Amidon (1960), Medley and Mitzel (1948) and Galloway (1968) have developed system of observation for studying the classroom teaching activities. This paper makes a detailed analysis of FIACS.

***Key Words:** Interaction Analysis, FIACS, Classroom Behaviour, Encoding and decoding*

INTRODUCTION

Interaction analysis is a process of encoding and decoding the study pattern of teaching and learning. In the coding process, categories of classifying statements are established, a code symbol is assigned to each category and a trained observer records by jotting down code symbols. In the decoding step, a trained analyst interprets the display of coded data and reconstructs the original events on the basis of the encoded data even though he may not have been present when the data were collected. Although there are many systems for coding spontaneous verbal communication in classroom, a typical system for interaction analysis will usually include;

1. a set of categories, each defined clearly,
2. a procedure for observation and a set of ground rules which govern the coding process, steps for tabulating data in order to arrange a display, and
3. suggestions which can be followed in some of the more common applications.

DIMENSION OF INTERACTION

According to Daniel G. Bobrow, the three dimension of interaction are Communication, Coordination and Integration.

The first dimension of interaction is communication. For communication to exist between two agents there must be some common ground of mutual understanding. Where does this come from and how does it develop? What techniques are used by people and systems to build and extend this base for communication? Communication between a particular pair of agents might not always be easy or even possible. In such cases, communication can be facilitated by interposing a mediating agent.

The second dimension of interaction is coordination. With multiple agents with multiple active goals, progress requires agent to share resources and work towards some common goals. Various organizational structures, for example, based on market and business hierarchies have been used in the resource allocation process. But resources are not the only thing that must be shared. For independent agents to work together, they must be able to predict other's behaviour, but not necessarily in great detail. Joint commitments to future action are a useful way of organizing this information.

Meaning of classroom interaction analysis:
Classroom interaction analysis refers to a

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technique consisting of objective and systematic observation of the classroom events for the study of the teacher's classroom behaviour and the process of interaction going inside the classroom.

Thakur's view: 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 from, recorded teaching learning sessions. It is a technique for capturing qualitative and quantitative dimensions of teacher's verbal behaviour in the classroom."

Ruhela's view: Dr. Satya Pal Ruhela, in his book 'Educational Technology' writes that class interaction analysis may be conveniently divided into two parts; viz. Verbal interaction and Non-Verbal interaction.

Flanders' interaction analysis system: Flanders' system is an observational tool used to classify the verbal behaviour of teachers, and pupils as they interact in the classroom. Flanders' instrument was designed for observing only the verbal communication in the classroom and non-verbal gestures are not taken into account.

Basic theoretical assumptions of Interaction analysis: The various theoretical assumptions, which are basic to very idea of interaction analysis, are as follows:

1. In a normal classroom situation, it is verbal communication, which is predominant. (Flanders 1965)
2. Even though the use of spoken language might be resort to non-verbal gestures in classroom, verbal behaviour can be observed with higher reliability than most non-verbal behaviour and also it can reasonably serve as an adequate sample of the total behaviour in classroom.
3. We can normally assume that verbal statements of a teacher are consistent with his non-verbal gestures and, in fact, his total behaviour. This assumption was sustained in terms of experience in Minnesota studies. (Flanders,1966).
4. The teacher exerts a great deal of influence on the pupils. Pupil's behaviour is affected to great extent by this type of teacher behaviour exhibited. (Anderson and others,1946).

5. The relation between students and teacher is a crucial factor in the teaching process and must be considered an important aspect of methodology.(Haggerty,1932)
6. It has been established that social climate is related to productivity and to the quality of interpersonal relations. It has been proved that democratic atmosphere tends to keep work of a relatively high level even in the absence of the teacher. (Lewin, 1939)
7. Children tend to be conscious of a warm acceptance the teacher and to express greatest fondness for the democratic teacher. (H.V. Perkins, 1950)
8. The role of classroom climate is crucial for the learning process. (Perkins, 1956)
9. The teacher-classroom verbal behaviour can be observed objectively by the use of observational technique designed to 'catch' the natural modes of behaviour, which will also permit the process of measurement with a minimum disturbance of normal activities of the group of individuals. (Wrightstone J. Wayne, 1958)
10. Modification of teacher classroom behaviour through feedback is possible (Flanders 1963), though how much can change occur and more knowledge relating to the permanence of these changes will require further research.(Flanders, 1963,1966)

Teacher influence is expressed primarily through verbal statements. Non-verbal acts of influence do occur, but are not recorded through interaction analysis. The reasonableness of this assumption rests upon the assertion that the quality of the non-verbal acts is similar to the verbal acts; to assess verbal influence, therefore it is adequately a simple of all influences.

These assumptions focus our attention on the verbal participation of teachers and students in teaching-process.

Flanders's Ten Category System: The Flander's system attempts to categories all the verbal behaviour to be found in the classroom. It has two main categories: teacher talk and pupil's talk. A third category covers other verbal behaviour, i.e., silence or confusion.

Flander's Interaction Analysis Categories (FIAC)

		Category number	Activity
Teacher talk - Indirect influence	Response	1.	**Accepts feeling:** Accepts and clarifies an attitude or the feeling tone of a pupil in a non-threatening manner. Feeling may be positive or negative. Predicting and recalling feelings are included.
		2.	**Praises or encourages:** Praises or encourages pupil action or behaviour. Jokes that release tension, but not at the expense of another individual; nodding head, or saying "Um hm?" or "go on" and included.
		3.	**Accepts or uses ideas of pupils:** Clarifying or building or developing ideas suggested by a pupil. Teacher extensions of pupil ideas are included but as the teacher brings more of his own ideas into play, shift to category five.
		4.	**Asks questions:** Asking question about content to procedure, based on teacher ideas, with the intent that a pupil will answer.
Teacher talk – Direct influence	Initiation	5.	**Lecturing:** Giving facts or opinions about content or procedures; expressing his own ideas, giving his own explanation, or citing an authority other than a pupil.
		6.	**Giving directions:** Directions, commands or orders to which a pupil is expected to comply.
		7.	**Criticising or justifying authority:** Statements intended to change pupil behaviour from non-acceptable to acceptable pattern; bawling someone out; stating why the teacher is doing what he is during; extreme self-reliance.
Pupil talk	Response	8.	**Pupil-talk response:** Talk by pupils in response to teacher. Teacher initiates the contact or solicits pupil statement or structures the situation. Freedom to express own ideas is limited.
	Initiation	9.	**Pupil-talk Initiation:** Talk by pupils, which they initiate. Expressing own ideas; initiating a new topic; freedom to develop opinions and a line of thought, kike asking thoughtful questions; going beyond the existing structure.
Silence		10.	**Silence or confusion:** Pauses, short periods of confusion in which communication cannot be understood by the observer.

Procedure of Flander's Interaction Analysis: Encoding and decoding are the two process of interaction analysis. The encoding process is used for recording classroom events and preparing observation matrix by encoding the numbers of ten category system. The decoding is process of interpreting observation matrix.

Encoding Process: The first step in the process of encoding is to memorize the code Numbers, in relation to key phrase of words, which are indicated in capital in ten-category system. An observer sits

on the last bench of the classroom and observes the teacher when he is teaching. At an interval of every three seconds he writes down that category number which best represents or communication event just completed. For instance, when teacher is lecturing the observer puts 5; when he asks question he puts 4; when student replies he put 8; when teacher praises he puts 2; when teacher asks to sit down he puts 6; when again the teacher starts lecturing he puts5. The procedure of recording events goes on at the rate of 20 to 25 observations in per minute.

Ground rules for encoding observation: Because of the complexity of the problems involved in categorization, several ground rules have been established. The rules of observation add in developing consistency in trying to categorize teacher classroom behaviour.

Rule 1: When it is not certain in which of two or more categories a statement belongs, choose the category that is numerically farthest from the category 5. For e.g., if an observer is not sure whether it is 2 or 3 then choose 2. If in doubt between 5 and 7, he chooses 5.

Rule 2: If the primary tone of the teacher's behaviour has been consistently direct or consistently indirect, do not shift into an opposite classification unless a clear indication of shift is given by the teacher. This rule is often called the rule of the biased, unbiased observer.

Rule 3: An observer must not concern with his own biases or with the teacher's intent. If a teacher attempts to be clever, pupils see his statements as criticism of pupils; the observer sues category 7, rather than category 2. This rule has particular value when applied to the problem of helping teachers to gain insight by their own behaviour, e.g., 'I was trying to praise them' I wanted them to answer that question'.

Rule 4: If more than one category occurs during the three seconds interval, then all category used in that interval are recorded. If no change occurs within three seconds, then repeat category number.

Decoding process: After encoding the classroom events into ten-category system 10x10 matrix table is prepared for decoding the classroom verbal behaviour. The generalized sequence of the pupil-teacher interaction can be estimated in this matrix table. It indicates, what form a pair of categories. The first number in the pair indicates the row and the second number shows the column for example (10-6) pair would be shown by a tally in the cell formed by row 10 and column 6. For example the observer has written down the code numbers beginning with 6 as follows: 6,10,5,1,4,8,8,2,3,6,4,8,9,7.

Tabulating a matrix: To tabulate these observations in a 10 into 10 matrix, the first step is to make sure that the entire series begins and ends with the same number. The convention is to add 10 to the beginning and end of the series, unless 10 is already present. So our earlier series now become 10,6,10,5,1,4,8,8,2,3,6,4,8,9,7,10. The observations are now entered in a 10x10 matrix so that the sum of column one equals the sum of row one, the sum of column 2 equals the sum of row 2, etc. The numbers are tallied in the matrix one pair at a time. The first pair in this case is 10-6; the tally is placed in row 10, column 6 cell. The second pair is 6-10, tally this in row 6, column 10 and so on. 'N' always will be tabulated by N-1 tallies in the matrix. In this case, we started a series of sixteen numbers and the series produce 15 tallies in the matrix.

	1	2	3	4	5	6	7	8	9	10	Total
1				1							1
2		1									1
3						1					1
4							11				2
5	1										1
6						1				1	2
7										1	1
8		1						1		1	3
9							1				1
10						1	1				2
Total	1	1	1	2	1	2	1	3	1	2	15

Interpreting the matrix: No classroom interaction can be ever recreated. It is part of a moment in history. The purpose of interaction analysis is to preserve selected aspects of interaction through observation, encoding, tabulating and then decoding.

1. **The proportion of teacher talk, pupil talk, and silence or confusion:** The proportion of tallies in columns 1,2,3,4,5,6 and 7, columns

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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. After several years of observing, we anticipate an average of 68 percent teacher talk, 20 percent of pupil talk and 11 or 12 percent silence or confusion.

2. **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.

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

4. **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.

5. **Steady state cells:**

	1	2	3	4	5	6	7	8	9	10	Total
1	1.1										
2		2.2									
3			3.3								
4				4.4							
5					5.5.						
6						6.6					
7							7.7				
8								8.8			
9									9.9		
10										10.10	
Total											

The above figure shows the 'steady state' cells along the diagonal from the upper left to the lower right. If these cells are heavily loaded it shows that the teacher remains in a particular category for more than three seconds. The cell with the highest frequency of the entire matrix is typically the 5-5 cell which lies on this diagonal indicating that the teacher frequently stays longer than 3 seconds when he provides information through lecture.

6. **Content cross cell:** The cell corresponding to the numbers 4 and 5 in the column and the row are known as 'content cross' cells. If these cells are overloaded they reflect the teacher's emphasis on the subject matter.

7. **Constructive integration cells and vicious cells:** Two areas that are most sensitive to the positive and negative aspects of social skill is the teacher-student relationship.

	1	2	3	4	5	6	7	8	9	10	Total
1											
2		A									
3											
4											
5											
6											
7							B				
8											
9											
10											
Total											

Area A might be called "Constructive Integrative Cells" while area B is called the "Vicious Cells". The cells corresponding to number 1,2 and 3 are known as constructive integration cells. Cells of numbers 6 and 7 are known as vicious cells. These cells reveal the teacher's attention to problems of classroom management and control as distinct from concern with the subject-matter.

ADVANTAGES OF FIACS

Ned Flanders' technique of Interaction Analysis is a boon for observing student-teacher interaction. As Dr. M.B. Buch says, it is " a bold step in the right direction to improve the quality of education" Several advantages are claimed for this method of analysis. The following are a few among them.

1. The analysis of matrix is so dependable that even a person not present when observations were made could make accurate inferences about the verbal communication and get a mental picture of the classroom interaction.

2. Different matrices can be made and used to compare the behaviour of teachers at different age levels, sex, subject-matter etc.,

3. This analysis would serve as a vital feedback to the teacher or teacher trainee about his

intentions and actual behaviour in the classroom. The supervising or inspecting staff can also easily follow this system.

4. It is an effective tool to measure the social-emotional climate in the classroom.

Precautions in use of Flanders Interaction analysis

1. The classroom encoding work should be done by an observer, who is familiar with entire process and knows its limitations.
2. It is an exploratory device therefore value judgments about good and bad teaching behaviours are to be avoided. This technique is not an evaluator device of classroom teaching.
3. The questions regarding classroom teaching can only be answered by inspecting the matrix table. The observer cannot answer the question relating to teacher behaviour.
4. A comparison between the two matrices can be reliability terms of behaviour ratios, interaction variables and percentage of frequencies in each category and calls frequency but value judgment is not possible.
5. The accuracy of the observation depends upon the reliability of the observer. The classroom recording should be done after estimating the reliability of observers.
6. At least two observers should encode the classroom interaction for analyzing teaching and teacher behaviour.

Limitations of Flanders interaction analysis

1. Efforts to describe teaching are often interpreted as evaluation of the teaching act and of the teacher. While descriptions may be used as a basis of evaluation, judgment can be made only after additional value assumptions are identified and applied to the data.
2. The system of interaction analysis is content-free. It is concerned primarily, with social skills of classroom management as expressed through verbal communication.
3. It is costly and cumbersome and requires some form of automation in collecting and analyzing the raw data. It is not a finished research tool.

4. Much of the inferential power of this system of interaction analysis comes from tabulating the data as sequence pairs in a 10 x 10 matrix. This is a time consuming process.
5. Once the high cost of tedious tabulation (electric computers) is under control but the problem of training reliable observers and maintaining their reliability will still remain.
6. Its potential as a research tool for a wide application to problems is to be explored.
7. The system devotes little attention to student talk and focuses a great deal of attention on direct/ indirect nature of Teachers performance. It is considered a great drawback of Flanders system.

CONCLUSION

Ned A. Flanders defines, "Teaching as an interactive process. Interaction means participation of teacher and students in the process of teaching". In this process, teacher influences the students; students also interact with the teacher. Interaction takes place among the students themselves also. It means, in the process of teaching, everybody interacts with every other person involved in the process. Teacher influences students through lecture, ask questions, criticizing, giving directions etc. Student's reacted to the teacher's lecture and questions, they give responses. It is interaction between teachers and students. The system does not describe the totality of the classroom activity. While administering FIACS, some behaviour is always over looked and who is to say that the unrecorded aspects of the teaching act are more important than those recorded.

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