



ANALYSIS AND EVALUATION OF CLASSROOM INTERACTION (VERBAL AND NON-VERBAL) AND TEACHING STYLE (DIRECT AND INDIRECT) IN PHYSICAL EDUCATION LESSON USING THE FLANDER SYSTEM FOR SYSTEMATIC OBSERVATION

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Abstract

The goal of the study was to determine how objective observation might be a vital tool for examining teacher-student interactions. It also aimed to determine the kind of instruction used (direct or indirect), how much of each was used, and how each contributed to improving the learning process. The researcher postulated that the direct teaching style is more frequently employed by the research sample than the indirect style and that objective observation is a useful method for examining teaching behavior. Because it was appropriate for the type of research, the descriptive method with an analytical approach was used. There were seven female physical education teachers in the city of Samarra who made up the study population. Five teachers made up the final sample after the exploratory sample was purposely excluded to create the study sample. The Flanders Interaction Analysis System, which has a series of equations that may be used to extract different variables used in data processing, was employed by the researcher to measure classroom interaction. The research's main conclusions showed that when teaching facts, regulations, and sequential responsibilities in an orderly fashion, direct instruction is necessary. On the other hand, when teaching concepts and ideas using discovery-based methods, indirect teaching is used.

Keywords: classroom interaction, teaching style, Flander system, systematic observation.

Introduction

Numerous changes and alterations in all facets of life, as well as a great scientific revolution, are characteristics of the modern era. This calls for paying close attention to this development and dealing with these modifications. Given that educational institutions are one of the main engines of progress, focus has been placed on the educational process to preserve culture by passing on knowledge, abilities, and concepts to coming generations.

More than ever, educational institutions must make every effort to produce modern people who can think logically and constructively and who have the knowledge and abilities to adjust to the demands of their age. To create a well-rounded person in every way—physically, cognitively, psychologically, socially, and healthily—this endeavor seeks to attain balanced and comprehensive development for society's members (Omar & Abdul Hakim, 2008).

To determine and diagnose the factors that affect one another, research and studies have concentrated on how participants interact during the educational process. Numerous aspects of the educational process have been clarified by these investigations. However, because of its complexity and the wide range of variables and interaction types involved, they have not addressed every facet of it.



Even though research on teacher-student interaction techniques and strategies in the classroom is still in its infancy, the body of information in this area has shown to be quite valuable for physical education teacher preparation. It has helped define the educational process, differentiate between different teaching philosophies, and pinpoint the connection between student achievement and classroom conduct. Innovative methods of fostering interactive interactions with the goal of improving student conduct have been established as a result (Stiles, L.J., 1971).

Several studies have emphasized classroom interaction as a central concept. For instance In their study of classroom interactions among fifty-six secondary school students, Qadri and Halima (2012) discovered a connection between student conduct, teacher management, the overall ambiance of the class, and teacher treatment. Teaching methods and classroom interactions in Nigerian elementary schools were examined by Hardman, F., et al. (2008). The study examined fifty-nine teacher questionnaires and forty-two lecture videos from ten states, mostly in northern Nigeria. The results showed that teachers were more concerned with explaining the content than with making sure students understood it. Yiqi, L. (2012) investigated classroom interactions that promote critical thinking abilities in secondary school liberal studies classes in Hong Kong. According to the findings, Web 2.0 increased the physical borders of classrooms, and as digital technology advanced, multimedia emerged as a key component of modern classrooms. In Tanzanian elementary schools, O-Saki, K.M., and Agu, A.O. (2002) studied classroom interactions. They concluded that more interaction promotes involvement and active learning in both boys and girls, which lowers school dropout rates and helps teachers meet their objectives. Cadima, J., Verschueren, K., Leal, T., et al. (2016) investigated the quality of teacher-student relationships and classroom climate as determinants of self-regulation in 206 preschoolers from a socially disadvantaged preschool population. The results showed that classroom quality had a moderate effect on observed self-regulation, especially helping kids who struggled with self-control.

There are still issues despite the important results of earlier studies on behavior modification and educational strategies. Among these include challenges in learning motor skills, physical education classes, and the absence of impartial observation techniques. To change teaching behaviors and promote new ones that promote learning, these approaches entail the quantitative classification of behavior based on occurrence frequency and necessitate knowledge of noteworthy events. Researchers have been inspired to utilize objective observation to examine the behaviors of teacher-student interactions because teacher behavior shapes the environment in which students behave. To accomplish a powerful teaching performance, this strategy seeks to discover both the positive and negative parts of each party's behavior, promoting the former and overcoming the latter.

Methods and Procedures

Participants

A random sample of female physical education teachers employed by Samarra's secondary schools for girls in the 2023–2024 school year made up the research population. Each of the seven (7) teachers that took part had a bachelor's degree in physical education. Excluding the pilot study sample of two (2) teachers, the research sample was purposefully chosen utilizing a thorough enumeration procedure. Five (5) teachers, or 71% of the total population, made up the final research sample as a result.

Measurements and Procedures

The researchers employed the ten behavioral categories that make up Flander's observation system. This strategy is regarded as a direct and indirect way to keep an eye on the teacher-student exchanges, both verbal and nonverbal.

Below is a brief overview of the behavioral categories in Flander's system:

Teacher/Student/Other Behaviors Observed
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Teacher Talk	Indirect influence	1. Accepts Feeling: Accepting and clarifying the feeling tone of students in a nonthreatening manner. Feelings may be positive or negative. Predicting or recalling feelings is included.
		2. Praises or Encourages: Praising or encouraging student action or behavior. Jokes that release tension, but not at the expense of another individual; nodding head, saying "um hm?" or "go on" are included.
		3. Accepts or Uses Ideas: Clarifying, building, or developing ideas suggested by a student. As more of the teacher's own ideas come into play, shift to Category 5.
		4. Asks Questions: Asking a question about content or procedure with the intent that a student answers.
	Direct influence	5. Lectures: Giving facts or opinion about content or procedures; expressing the teacher's own ideas, asking rhetorical questions.
		6. Gives Directions: Giving directions, commands or orders with which a student is expected to comply.
		7. Criticisms or Justifies Authority: Making statements intended to change student behavior from unacceptable to acceptable pattern; bawling out someone; stating why the teacher is doing what he/she is doing; extreme self-reference.
Student talk	8. Responds: Talk by student in response to teacher. Teacher initiating the contact or solicits student statement.	
	9. Initiates: Talk by students, which they initiate. If "calling on" students is only to indicate who may talk next, observer must decide whether student wanted to talk. If so, use this category.	
Silence	10. Silence or Confusion: Pauses, short periods of silence, and periods of confusion in which communication cannot be understood by the observer.	

(Mahmoud, Baha Said, et al., 2016)

Recording Procedures

Using a form that lists the behavioral categories determined by the observation system, the observer logs one of the types of behavior that occur during the teacher-student interaction every three seconds. The observer takes a 5-minute break every five minutes of observation. The behavioral patterns are then depicted in a table by converting these observations into numerical entries. Within the major portion of the lecture, observations are made for 15 minutes (Table 1).

Data Summarization

The observer or instructor can describe and discuss the interaction in several ways after finishing the data entry in the analysis table. Dividing the sum of each column by the total number of numbers in the table yields the percentage for each category (column), which is the most straightforward analysis.



To complete the description and discussion of the relationships between the teacher and the students, these can be examined through specific sections of the table. Only the teacher can decide what constitutes "good," "bad," "desirable," or "undesirable" behavior.

Table Areas:

- **Teacher Influence:** The percentage of the teacher's influence shows how much interaction involves the teacher's verbal behaviors. This is calculated by dividing the total of columns (1-7) by the total numbers in the table.
- **Student Influence:** The percentage of student influence shows how much interaction involves the student's verbal behaviors. This is calculated by dividing the total of columns (8-9) by the total numbers in the table.
- **I/D Ratio (Indirect/Direct):** To determine whether the teacher exhibits direct or indirect behavior, the sum of columns (4, 3, 2, 1) is divided by the sum of columns (7, 6, 5) plus (4, 3, 2, 1).
- **Special I/D Ratio:** To determine the ratio of encouragement and control, the sum of columns (3, 2, 1) is divided by the sum of columns (7, 6) plus (3, 2, 1). This indicates the level of encouragement and control compared to the content focus.

Translating and Interpreting Information

Cross Content (Shape 1):

The cross-shaped area (A) indicates teacher behavior that emphasizes primarily asking questions, lecturing, and demonstrating skills. High focus in this area suggests a strong emphasis on content delivery.

Increased Indirect Influence:

Extensive use of indirect influence is shown by frequent repeats in cells that connect rows (3, 2, 1) and columns (3, 2, 1). Shape 1's Region (R) indicates that the instructor places a great deal of focus on embracing pupils' emotions, supporting their actions, and making use of their ideas.

Increased Direct Influence:

Extensive usage of direct influence is indicated by frequent repeats in cells that intersect rows (7, 6) and columns (7, 6). The teacher's emphasis on giving lengthy instructions, giving directives, anticipating answers, and changing the thoughts or actions of the students is evident in this area, which is designated as Region (C) in Shape 1.

- Patterns in cells (6, 6), (7, 6), (6, 7), and (7, 7) suggest organizational directives from the teacher that students do not follow, resulting in criticism or reprimands. This may reflect problems or student resistance to teacher influence.

Student Impact Assistance:

Region (D) in Shape 1 indicates student verbal behavior and the support of such behavior by other students. A high frequency of interactions in table cells intersecting (9, 8) columns and (9, 8) rows marks this influence.

Teacher Response to Students:



How the teacher reacts to the actions of the students is an important part of the relationship. Direct replies to students are represented by Region (F) in Shape 1, whereas Region (E) represents indirect reactions. The relative frequencies in these areas can be compared to show how the teacher responds to students.

Figure (1) clearly illustrates the areas of behavior analysis according to the Flander system.

		1	2	3	4	5	6	7	8	9	10
Accepts Feeling	1										
Praises or Encourages	2		B								
Accepts or Uses Ideas	3										
Asks Questions	4										
Lectures	5				A						
Gives Directions	6										
Criticisms or Justifies Authority	7										
Responds	8										
Initiates	9										
Silence or Confusion	10										

Following the completion of the observation and exploratory experiment procedures, the researchers applied and documented ten classes, with two lessons for each of the five physical education teachers in the Samarra city's secondary schools. Together with the support staff, the researcher led some introduction classes and gave each teacher a preliminary rundown of the experiment's goals. From Sunday, March 10, 2024, to Thursday, April 18, 2022, the actual study experiment got underway.

Statistical Methods

Preliminary findings (frequencies and percentages) were obtained by analyzing the behavior of the teachers to determine classroom interaction using the Flander analysis system. The researcher utilized some system-specific statistical equations, which are described in the data summary, to process some of the data and provide final data for the variables that the researcher sought to reach.

Results

	1	2	3	4	5	6	7	8	9	10
1	121									



2		150										
3			182									
4				222								
5					552							
6						610						
7							210					
8								390				
9									110			
10										470		
Total	121	150	182	222	442	610	210		390	110	407	3017
%	4	5	6	7	18	20	7		13	4	16	

Table (1): Shows the interaction analysis model

Classes from 1 to 8 = 1380.
 Teacher's behavior = $(2047/3017) \times 100 = 67.84\%$.
 Student's behavior = $(500/3017) \times 100 = 16.57\%$.
 Silence = $(470/3017) \times 100 = 15.59\%$.
 Ratio of indirect teaching behavior to direct = $(121+150+182+222)/(552+610+210+657) = 657/2047 \times 100 = 32.09\%$.

Ratio of indirect teaching behavior to direct, affecting the teacher's motives and control desire = $(121+150+282)/(820+453) = 453/1273 \times 100 = 35.58\%$

Discussion

It was easier to explain and talk about the teacher-student interaction in the classroom when the data was entered into the analysis table. The simplest method is to divide the sum of each column by the total in the table to determine the percentage for each behavioral category, as shown in Table (1). By developing a methodical and consistent graphic to depict such interaction, Flanders established this method, which aids in examining various table sections and is depicted in Figure (1).

Teacher's Influence

The teacher's impact percentage, which came to 67.84%, demonstrates the magnitude of their involvement in the conversation, mostly through verbal behavior. Given the substantial proportion, the teacher controls most of the decisions made during the teaching phase and dominates the class. To improve their capacity to produce the intended learning outcomes and initiate changes in cognitive structures that manifest as behavioral changes, teachers must possess communication skills, which are seen as difficult yet crucial. Some educators think that because students struggle to organize the communication process, their participation impedes the attainment of objectives.



In educational philosophy and practice, communication and classroom engagement are novel ideas. While interaction include not just cognitive communication but also emotional, social, psychological, and educational communication, communication is defined as the process of conveying information from a sender to a recipient, involving numerous paths for information transmission.

The general behaviors are regarded as direct teaching, which works effectively for learning facts, roles, and laws as well as the connections between events and actions. The instructor oversees preparing and delivering knowledge to the pupils, frequently in the form of lectures, with the help of practice and feedback opportunities.

Direct instruction, which aims to clarify specifics and provide feedback, is very helpful when teaching difficult abilities that must be broken down and practiced. It also increases students' enthusiasm and enjoyment.

Indirect Teaching

It is also crucial to take note of indirect teaching, which relies on students discovering and acquiring facts indirectly by creating and altering behavioral models and incentives during the discovery process—often by presenting a specific challenge. The teacher's job in this situation is to lead and assist the students in their discovery process (Malhas, Emad, 2004).

The type of engagement and communication that occurs between the teacher and students, as well as between the students themselves, determines how well the educational process goes. The instructor's skill to facilitate this engagement is crucial. "Verbal interaction refers to the total speech and words exchanged between the teacher and students in the classroom" (Jebur M. et al., 2021). "An objective and accurate attempt to describe and organize observable behaviors and actions during the lesson" is what behavioral interaction analysis is (Jebur M, et al., 2021). To help the instructor evaluate and plan their teaching strategy, it tracks what the teacher and students say and do to study behavior.

Student Participation

16.57% of the entire session time was found to be devoted to student engagement, which is a low percentage when compared to the ideal scenario. It is not appropriate for the instructor's personality to control or determine the relationship between the teacher and students.

Successful relationships with students depend on effective teacher leadership. Even while this leadership has clear goals, it will play a detrimental role if it turns authoritarian. Instructors may "assert their authority through clear and appealing educational behaviors and goals, rather than through authoritarian actions" (Hogue, M.,2006).

This style of teaching is more effective for delivering a large amount of information in a brief period, but it does not offer students the opportunity for necessary participation.

Indirect to Direct Teaching Ratio

32.09% was the ratio of indirect to direct teaching behavior, and 35.58% was the ratio influencing motivation and the need for control. The low percentages indicate that direct teaching behaviors were employed by the study population.

When teaching facts, laws, and the sequential evolution of roles, or when the content needs to be explained by the presentation of facts and examples, as well as by offering training chances with corrective feedback, direct teaching is favored. This enables step-by-step learning without advancing before mastering earlier stages.

The teacher's job is to facilitate and structure the lesson's content through exploratory questions and responses. In contrast, indirect teaching is employed when teaching specific ideas and concepts through exploration tactics.

Teacher's Beliefs



The low percentage of indirect teaching behavior, according to the researchers, reflects teachers' perceptions that students lack prior knowledge of the subject matter and have poor comprehension skills. Since their performance is determined on the learning results of their pupils, they aim to offer the content as fast as possible. Teachers have not done their jobs well if the kids do not learn.

These findings support the study's hypothesis that when teaching new and challenging abilities, especially to students who are less proficient or lack experience, teachers typically use direct teaching approaches (Dougherty, N. J., 1983).

Conclusion

Based on the findings, the researchers draw the conclusion that when teaching facts, laws, and the orderly succession of responsibilities, direct teaching should be utilized. When teaching concepts and ideas using exploration methodologies, indirect teaching should be used. Observation systems are regarded as a trustworthy instrument for examining the teaching process and determining its advantages and disadvantages. The researchers advise using observation systems as instruments for examining the educational process considering these findings. Additionally, they recommend the use of observation methods in various research to determine the teaching process's advantages and disadvantages. Any shortcomings in the educational process can be addressed with the use of objective examination of instruction.

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