Analyzing Classroom Interaction between Teacher and Student Using Systematic Observation

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Abstract

The purpose of this study is to identify how to use systematic observation as an important way of analyzing interactive behaviors between the teacher and the student. Moreover, it tries to reveal the approved teaching method (direct and indirect) and the ratio of each to the other, and the role of each in enhancing the educational process. It is applied to a group of teachers Physical education for study Q in the city of Samarra and their number (NO: 12 80%) teachers, using (A. mae Timer) system for organized objective observation program. The study concluded to adopt direct teaching in teaching skills and the rules of games and the following roles regularly, in addition to being an honest tool for analyzing the teaching process and discovering its strengths and weaknesses. objective observation must be adopted as a tool to analyze the teaching process, and objective observation should be adopted in different studies to arrive at strength points. The weakness in the teaching process, and also that the objective analysis of teaching gives a clear picture of the teaching behavior.

Introduction

The current era is facing a huge scientific revolution and many changes and transformations in all areas of life. That thing calls for noticing this progress and facing these changes, and since educational institutions are one of the means of progress, "attention has been focused on the educational process as one of the means that work to achieve civilized communication by transferring experience Skills, and ideas to future generations " (Ackers & Hardman, 2001). The school has become a demand more than ever before to make every effort to educate the modern man who is capable of sound constructive thinking and is equipped with skills and knowledge that enable him to fit smartly with the way of his life and his characteristics. so it works on the comprehensive and balanced development of the members of society and building the integrated human being from all sides Physically, mentally, psychologically, socially, and healthy. Research and studies such as (Andaya & Abocejo, 2019) (Archambault et al., 2017) (Bloom et al., 1999) (Cadima et al., 2016) (Chen et al., 2002) and many others have been focused on the interaction that happens between the participants in the educational process to identify and diagnose the variables that affect each other and have contributed to shedding light On the many characteristics of the educational process, but it did not cover all its aspects because it is on a large degree of complexity and because of the large number of factors that overlap with it and the types of interactions between them.

Although the researches on the methods of teachers' interaction with students in the classroom are late according to other fields in education, the information gathered from it has had great importance in the field of preparing physical education teachers by describing the educational process and accurately distinguishing between teaching strategies and determining the relationship between Behavior that takes place in the lesson and the level of students, "they created new trends in interactive relationships and they aim to positively influence students' behavior. (Chiegil, 2017) Here we should shed light on some studies that dealt with the concept of classroom interaction and made it the focus of their interest, such as the study of (Claxton, 1988) Which dealt with the classroom interaction of students in the secondary stage, who are (56) students. The study concluded that there is a relationship between the student's behavior and the teacher's treatment, as well as the general atmosphere of the lesson and his teacher's management. The study (Gehlbach et al., 2012) indicates the achievement of class interaction and teaching practices in Nigerian primary schools, and the study was based on interaction and analysis of video recordings of (42) lessons and (59) questionnaires for teachers from (10) states, drawn mainly from northern Nigeria. The results revealed the prevalence of teacher interpretation of the subject matter in the classroom with little attention being paid to ensuring understanding of students. The study of (Good & Brophy, 1971) explores the classroom interaction that enhances the critical thinking ability of students in a liberal studies classroom in a high school in Hong Kong. the results indicate that Web 2.0 has expanded the physical boundaries of the classroom and multimedia has become a hallmark of the classroom. Contemporary Scholastic is due to advances in digital technology. The study of (Hardman & Hardman, 2017) focused on teacher characteristics and other factors that influence class interaction and influencing teaching behavior. The study of (Hardman et al., 2008) focused on studying classroom interaction in elementary schools in the United Republic of Tanzania and concluded that increasing classroom interaction can encourage learning and active participation by both boys and girls and can help reduce From the number of school dropouts and achieving the goals set for teaching. The study (Kafele, 2014) examined the quality of the classroom atmosphere and the bilateral relations between the teacher and the child as predictors of self-regulation on a sample of (206) socially deprived preschool children and a moderate effect was found between the quality of classroom instruction and perceived self-regulation so that children with lower self-regulatory skills benefit more from higher-quality classrooms.

Despite the distinguished results of previous studies and research in teaching methods and behavior modification, it still has obstacles, especially in the field of physical education lessons and learning of motor skills, as well as the lack of use of objective observation methods that serve as lists for quantitatively classifying behavior. It includes the number of occurrences of the specific event, and it also requires knowledge of important events to modify teaching behaviors and create new behaviors that facilitate the learning process, because the teacher's behavior produces an influential atmosphere for the student's behavior. This is what prompted the researchers to use the method of objective observation to analyze the behavior of the interaction between the teacher and the student to reveal the positive and negative aspects in the behavior

of each of them, so it works on adopting the positive behaviors and overcoming the negative behaviors to reach the effective teaching performance.

Method

Subject

The study population was determined from teachers of physical education of middle schools in Samarra / Salah al-Din Governorate / Iraq for the academic year 2019-2020, they were (15) teachers. As for the study sample on which the experiment was applied, it was selected through a total counting for the community members with the exclusion of (3) teachers who refused to participate in the experiment, so the final research sample was (12) teachers and they were (80%) of the total community.

Observation System

The observation system prepared by A. mae Timer (Lacy & Darst, 1985) (Leriche et al., 2016) consisting of (11) behavioral categories, was used as a direct and indirect method for monitoring the verbal and non-verbal interaction between the teacher and the student.

Category 1:

Acknowledge Feelings: Accepts. clarifies or acknowledges the feeling lone of students in a nonthreatening manner - Demonstrates feelings of acknowledges with physical contact. such as a pat on the shoulders - Parts an arm around the shoulders - Smiles[b] - Nods head affirmatively - Winks[b].

Category 2:

praises or Encourages: Nods head or says " un um, yes, good, etc, " or something similar - Pats the student's back suggesting that he go on or keep trying - Gestures with index finger and thumb together - Claps, raises eyebrows and smiles - Displays work of the student[b] - Uses any behavior that releases the tension of the student.

Category 3:

accepts or used ideas of students: Uses student's idea cognitively or physically - builds or modifies the verbal or non – verbal pattern - Clarifies student's idea.

Category 4:

Asks Questions: Asks questions that lead one or more students to respond with cognitive, psychomotor, or affective behavior.

Category 5:

Demonstrates: Simulates behavior that students are to emulate - Perceives by using any of the five senses - Performs a physical skill[b] - Manipulates materials and media[b].

Category 6:

Explains: Tells facts or opinions as in lecturing - Asks rhetorical questions - Gives cues or coaching hints - Analyzes specific movement, concept.

Category 7:

Gives Directions: Gives commands or orders with which students are expected to comply - Gives directions for organizational procedures - Gives directions for controlling - Points with hand[b] - Looks at specified area[b] - Walks to specified area[b] - Stands in specified area[b] - Employs predetermined

signal (such as raising hands for students to stand up)[b] - Reinforces numerical aspects by showing that number of fingers[b].

Category 8:

Criticizes or justifies Authority: Attempts to change student behavior from no acceptable to teacher – acceptable patterns – Disciplines - States why the teacher is doing what he is doing; " Divine Right of Kings " - Demonstrates aggressiveness, physical contact - Uses sarcasm - Frownsb - Staresb - Raises eyebrows[b] - Taps foot[b] -Slams roll book down[b] - Negatively shakes head[b] - Walks or looks toward the deviant[b] - Walks or looks away from the deviant[b].

Category 9:

Student Response: One or more students demonstrable observable behavior in response to the teacher - Performs a physical skill[b] - Raises hand to answer questions[b] - Takes notes[b].

Category 10:

student-initiated Behavior: One or more students initiate behavior toward the teacher or toward other students - student responds to another student - Student behaves as a result of own motivation - students have eye – to – eye contact with each other[b] - Shuffles feet[b] - Taps pencil[b] - Applauds[b] - Shrugs shoulders[b] - Moves more slowly than usual[b] - Nods head affirmatively - Nods head negatively - Raises hand[b] - Frowns[b].

Category 11:

Silence or Confusion: Any pause or period of time that the observable behavior cannot be understood or categorized - Concentrated thought or attention - Confusion or lack of understanding about how to respond - Transitional states - Student attempts to move from one area to the next[b] - Scratches head[b] - Frowns[b].

Registration processes:

The observer records every (3-5 seconds) one of the behavioral categories that occur through the interaction between the teacher and the student according to a form that includes the behavioral groups determined by the observation system, and after every (5) minute of observation, the observer takes another (5) minutes rest. Also, these remarks are transferred in numbers to a table showing behavioral patterns, and the observation takes place within (15) minutes of the time allocated for the main part of the lesson.

Summarize the data:

The data placed in the table show us, behavioral models, from the learning environment, and to find the percentage of overlap in the relationships for these behavioral factions, this is done by calculating the behavioral factions for each column divided by the total number of factions. Figure (1) below illustrates this.

Figure 1:
Demonstrates the oral and nonverbal interaction
(DARST, P, W., Victor, H, M., Dorothy, B, Z., 1983) (Dougherty, N. J., 1983)

The percentage of teacher behaviors:

It can be found by dividing the sum of columns (1-7) by the total number of the table x 100.

Student behavior rate:

It can be found by dividing the sum of columns (9-10) by the total number of the table x 100.

Block (A):

Represented in rows (1, 2, 3) and columns (3, 2, 1), this group shows us the time that the teacher spent in approving feelings, adopting students' ideas, or encouraging them, and the high percentage of this time devoted to these behavioral groups indicates behavior. The indirect approach to the teacher towards the students is to clarify the concepts and give feedback.

Block B:

In the form of row (8, 7) and columns (8, 7), this categorical indicates the direct influence of the teacher through his use of his authority, and it also indicates the existence of problems related to the topic and the students' lack of acceptance of this influence imposed on them by the teacher, that is, it shows the extent of control. The teacher, and conversely, the spaciousness indicates mess and problems with students.

Block (C, D):

C represented by a row (3, 2, 1) and columns (10, 9).
D represented by a row (11, 10, 9, 8, 7) and columns (10, 9).
This group indicates the students' behavior and their preoccupation with training and learning. group C shows the type of incentives and effects that the teacher has to stimulate the students' responses, while the D group indicates the behavior of one of the students that are supported by other students and their assistance and under the supervision of the teacher.

Block (E, F):

E represented by row (10, 9) and columns (4, 3, 2, 1).
F represented by a row (10, 9) and columns (8, 7, 6, 5).
These models of behaviors occurring in the group (F, E) are used by the teacher at the moment when the students stop interfering with him.
group E shows indirect responses by the teacher to students 'behaviors, while group F shows direct responses by the teacher to students' behaviors.

Block (G):

Represented in a row (11, 1) and column (11), and this categorical refers to the type of behavior occurring by the teacher or students that follows a period of pause in the behavior or confusion and lack of understanding.

Block (H):

Represented in a row (6, 5, 4) and columns (6, 5, 4), this categorical, including the behavioral factions (6, 5, 4), as they generally indicate and emphasize the preoccupation with the content of the lesson.

Procedures

The observation was made for a sample of physical education teachers for middle schools in the city of Samarra after videotaping (12) lessons using the (A mea Timer) system to analyze comprehensive classroom interaction (Nyberg & Larsson, 2014) (Omar & Abdulhakim, 2010), for the period from 1/11/2019 to 1/5/2020, where one lesson was filmed for each teacher by (3) cameras that were placed in the school playground without the teachers noticing by attending before (10 minutes) from the beginning of the lesson, to ensure that the behavior is not created, and after completing the video filming, the content of the three cameras was processed by a specialist in the field of photography and montage to obtain a final video for each lesson. (EXCEL) file, in which the observers concluded that verbal behavior is prevalent and that the teacher makes most of the teaching stage decisions

Statistical Analysis

This study utilized the (A.mae Timer) system to observe the classroom interaction between the teacher and the student. This system requires to classify the behavior of the teacher and the student during the physical education lesson every (3-5 seconds) so that the observer is able to determine the frequency in which particular behaviors occur during specific time intervals.

Conclusions

Table (1):
shows the sample of reaction analysis

	1	2	3	4	5	6	7	8	9	10	11	
1	70											
2		135										
3			25									
4				50								
5					250							
6						600						
7							180					
8								70				
9									260			
10										140		
11											20	
Total:	70	135	25	50	250	600	180	70	260	140	20	1800
%	3₈88	7₈5	1₈38	2₈77	13888	33833	10	3₈88	14844	7₈77	1₈11	

categories 1-8 = 1380.

Teacher behavior = 1380/1800 x 100 = 76.66%.

Student behavior = (140 + 260) / 1800 x 100 = 22.22%.

Silence = 20/1800 x 100 = 1.11%.

The ratio of indirect to direct teaching behavior = (50 + 25 + 135 + 70) / (70 + 180 + 600 + 250) = 280/1100 x 000 = 25.45%.

The ratio of indirect to direct teaching behavior affecting the teacher's motivation and control = (25 + 135 + 70) / (70 + 180) 230/250 = 0.92 = 230/250 x 100 = 92.

Block A: Desirability of sentiment = (25 + 135 + 70) / (70 + 180) = 230/250 = 0.92 = (25 + 135 + 70) / 1800 x 100 = 230/1800 x 100 = 12.77%.

Block B the use of teacher direct authority, influence, and dominance: 250/1800 = 13.88%.

Block C and D and indicates student behavior:

Block C = 400/1800 x 100 = 22.22%.

Block D = (20 + 140 + 260 + 70 + 180) / 1800 x 100 = 670/1800 x 100 = 37.22%.

Block E and F are used at the moment students stop interfering with the teacher.

Block E = indirect responses by the teacher and student behaviors:

E-break = (50 + 25 + 135 + 70) / 1800 x 100 = 280/1800 x 100 = 15.6%.

The Block F = (70 + 180 + 600 + 250) / 1800 x 100 = 1100/1800 x 100 = 61.11%.

Block G emphasizes the period of silence and reflection:

Block G = 20/1800 x 100 = 11.11%.

Block H: This group, including platoons (4, 5, and 6) indicates and confirms the content of the lesson.

Block H = (600 + 250 + 50) / 1800 x 100 = 900/1800 x 100 = 50%.

Block F = (250 + 50 + 25 + 135 + 70) / (70 + 180 + 600 + 250) = 530/1100 x 100 = 48.18% = 0.48 ID Ratio, direct to indirect behavior.

The percentage of indirect teacher behavior to direct behavior.

Block G = (25 + 135 + 70) / (70 + 180) = 230/250 = 0.92.

Any inverted ID percentage, i.e. the percentage of direct to indirect teacher behavior in relation to motivation and control.

Question asking percentage = 50/1800 = 0.02.

Discussion

By inserting the analysis table with numbers, this helped describe and discuss the classroom interaction between the teacher and the student, and the simplest way to do that is to calculate the percentage of each behavioral group, and this can be seen in Table No. (1) by dividing the sum of each column by the total number of the total numbers existing in the table, to help to examine different areas of the table, and this is what (Flanders) came by developing an objective and standardized schematic form to describe such an interaction and the form that shows the areas of interaction (Figure 1).

The influence of the teacher:

The percentage of the teacher's influence shows us the amount of the share of interaction from the relationships that he made through oral behavior and the amount was (76.66%), which is a high percentage that shows us the extent of the teacher's dominance over the lesson and his taking most of the decisions of the teaching stage. So the teacher needs the communication skill that is considered one of the difficult skills. But it is a prerequisite for increasing the teacher's ability to affect the desired learning and making changes in the cognitive structures that can be seen in the form of behavioral changes. "Some teachers believe that student participation hinders the achievement of goals due to their lack of skill in organizing the communication process." (O-saki & Agu, 2002) The concept of communication and the concept of classroom interaction are two relatively new concepts in the learning and educational framework. while communication is defined as the process of transmitting information from a sender to a receiver that includes more

than one way of transmitting the information. interaction includes, in addition to intellectual communication, emotional, social, and psychological communication, and educator (Palou et al, 2020) and (Psencik, 1969) believe that there is an abundance of evidence indicating that the relationship between teacher and student should be positive, and that verbal communication and interaction have many good aspects for students of different ages, as it helps them achieve the achievement of various knowledge and skills. (Qadri, 2012) mentions that great teachers are those who interact with their students, and make sure their students stay excited about learning and insert joy in them. The close relationships between the teacher and the student are characterized by open communication, warmth, and affection, linked to the active participation in the lessons and interest in school activities for all students, including students with behavioral problems. (Saxena & Martin-Jones, 2013). (Sicilia-Camacho & Brown, 2008) (Stiles, 1971) (Yiqi, 2012) agree that interaction leads to building trust, which is imperative to help build and flourish the relationship between teacher and student, and it helps in reaching to deeper levels of thinking, because students believe that the teacher makes decisions based on what is good and appropriate for them, and many educational researchers agreed on many aspects of the importance of forming a relationship and its ultimate impact on both the teacher and the student. All of these behaviors are what is called direct teaching, which is effective in obtaining information related to knowledge of facts, roles, and laws, and how actions and events communicate. (Zetou et al., 2011) The direct method is used when training in complex skills that require segmentation and training, to increase students' motivation and bring pleasure to them, and to clarify details and give feedback. (Ackers & Hardman, 2001)

It is necessary to refer here to the behavior or indirect teaching in which learning depends on the student in acquiring and discovering facts indirectly through the building and transforming the incentives and behavioral models based on discovering them by posing a specific problem, as "the teacher's role is here for guidance and facilitating the task of discovery. ". (Andaya & Abocejo, 2019) The success of the educational process depends to a large extent on the nature of communication and interaction between the teacher and his students and between the students themselves, as this interaction depends on the ability of the teacher on how to organize it. "Verbal interaction refers to the entirety of speech and sayings. The sequence that the teacher and students exchange among themselves in the classroom." (Archambault et al., 2017). The process of analyzing behavioral interaction is "an objective and accurate attempt by which to describe and organize what happens in terms of behavior that can be observed and recorded during the lesson." (Bloom et al., 1999), it is a study of behavior by monitoring the words and actions of the teacher and the student to help the teacher review, adjust and organize his teaching style. The importance of classroom interaction comes through its direct impact on the pupils or the teacher, how the teacher interacts with the pupils is what constitutes the characteristics, quality of the educational process, and such interactions may take the form of praising good behavior, reprimanding inappropriate behavior, giving feedback and accepting Pupils' thoughts and feelings. Also, "The science of behavior analysis must take into account not only changes in behavior but also the extent of their impact on interactive relationships" (Cadima et al., 2016) the teacher needs to communicate effectively. When messages are not sent clearly, there is confusion and a lack of understanding. (Chen et al., 2002)

The process of interaction between the teacher and the student always reflects a specific teaching behavior and a special educational behavior, and what results in such behaviors is the reaching of the required goals, as the document that links between the teaching behavior and the learner's behavior and the goal cannot be separated, but rather to be one unit; The results of this study are in agreement with the study (Chiegil, 2017), in which she used structured observation on nine high school boys' tennis coaches and found that the more successful coaches asked their players significantly more questions compared to the less successful coaches. It also agrees with the study (Claxton, 1988) Which used an observation tool to monitor the behavior of a single coach over the course of an entire season, and concluded that nearly a third of the trainer's behaviors relate to teaching offensive and defensive strategies to his team, and this differs from training courses for beginners and intermediate coaches, who often focus on teaching basic skills to athletes; It also agrees with the study (Gehlbach et al., 2012) which used a tool to observe fifth grade students in elementary school and concluded that the teacher in the physical education lesson spends a lot of time in organizing, which means less learning time; It also agrees with the study (Good & Brophy, 1971) Which observed the behavior of the physical education teacher by photographing 22 lessons, and concluded that identifying the influential teacher behavior greatly contributes to the students' activity levels and provides useful variable data; It also agrees with a

study of (Hardman & Hardman, 2017) which dealt with analyzing the behavior of parents in popular football matches through organized observation, by twelve team belonging to the second division under 15 years in the Balearic Islands (Spain) during the 2016-17 season, and the study concluded that neutral comments are the most reputable, followed by positives and negatives; It agrees with the study (Hardman et al., 2008) Which dealt with recording and evaluating the training behaviors of 12 coaches from the Greek national department of volleyball, and concluded that coaches in these categories A1 and A2 use a large number of comments during training, especially when they teach tactics. This study differs from the findings of the study of (Kafele, 2014) that there were no statistically significant differences in the behavior of football coaches for the second stage between the early season and the late season stages. The use of structured observation systems to monitor teachers 'behavior is imperative, because" the approach of these systems is based on organizing and classifying verbal and non-verbal actions and data that are recorded, and the repetitions that occur. Thus, the observation can evaluate the aspect that has been observed. " (Lacy & Darst, 1985)

Conclusion

The study concluded by adopting direct teaching when teaching facts and laws and the following roles regularly. The adoption of indirect teaching when teaching concepts and ideas according to discovery strategies. Observation systems are an honest tool for analyzing the teaching process and discovering the positive and negative points in it. Researchers recommend the adoption of observation systems as tools to analyze the teaching process. Adopting observation systems in different studies to find the strengths and weaknesses of the teaching process. And objective analysis of teaching bridges the defect that occurs in the teaching process.

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