

## BIOLOGY TEACHERS' ATTITUDES AND COMMUNICATION BEHAVIOR IN TURKEY: FROM THE VIEW POINT OF THEIR STUDENTS

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### ABSTRACT

The purpose of this study was to determine students' perceptions about their biology teachers' attitudes and communication behaviors in classroom environment in Turkey. A Likert type questionnaire was constructed consisting of 33 statements divided to three sub-sections. The Cronbach's alpha reliability for the instrument was 0.9076. Results showed that attitudes, behaviors, communication and examination styles of the biology teachers in are ranged between normal and acceptable limits. Results also provide a discussion frame of communication related problems in order to improve the subject knowledge and teacher training programs.

**Key Words:** Biology teachers, communication behavior, attitudes, student perceptions

### INTRODUCTION

While definitions of the attitude and behavior change according to research area and test subject; generally it is received a person's negative or positive manner (mode) to a certain object or situation or event. Petty and Cacioppo (1986) describe attitude and behavior comprehensively as "individuals' general evaluations about himself/herself, others, other objects, events and problems". Based on a lot of behavior, affective and cognitive foundations, these general evaluations affect developments, alterations and formations.

Most of us can remember one or more classroom episodes when teachers' acts determined some lasting negative effects on pupil. Unfortunately, on a scientific level, many writings are encapsulated in recalling these intense emotional experiences only. Yet their message is clear, underlining that the pedagogical relationship is the heart of effective teaching (Kearney et al., 1991).

Constituting positive attitude is important for pre-service teachers. Thus required qualifications should be determined through measuring acquired attitudes and behaviors during teacher education. Changing time and social structure require teachers' having much more skills in order to perform their jobs effective. A lot of research activity in teacher education expose classroom management as the most important skill teacher must have.

International research efforts involving the conceptualization, assessment, and investigation of perceptions of aspects of the classroom environment have firmly established classroom environment as a thriving study (Fraser and Walberg, 1991; Fraser, 1998). For example, recent classroom environment research has focused on constructivist classroom environments (Taylor et al., 1997), computer-assisted instruction classrooms (Fraser, 1994), and teacher interpersonal behavior in the classroom (Henderson et al., 2000).

Interaction with other people is a major part of the school day for most teachers. In the classroom, interaction with the students is an essential part of the learning process (Fisher and Cresswell, 1999).

Classroom interactions between teachers and students occur rapidly in a classroom. It is indicated that teachers in secondary schools may have interactions with 150 different students in a single day. However, teachers are usually not aware or are not able to describe or remember what happens in these interactions with their students. For example, interviewing teachers, it is confirmed that teachers usually were not aware how many questions they asked students and what kind of feedback they provided (Good and Brophy, cited in She and Fisher, 2002).

Classroom management is one of the important variables of the learning and teaching process. Beside discipline problems, teaching process involves variables such as planning learning activities, passing between activities, organizing physical order of the classroom, preparing learning materials, using time, keeping general order (Latz, 1992; Wilks, 1996).

Learning environments have been studied with a view to identifying those characteristics of the environment that are associated with enhanced student achievement. Past learning environment studies have shown that interpersonal behaviour is one of the characteristics related to student learning outcomes (Brekemans et al, 1993, p. 60). A strong relationship between student attitude and the students' perception of the teacher's interpersonal behaviour was also found. Whereas classroom environment normally refers to relationship

between teachers and their students or among students; school environment pertains to a teacher's relationships with other teachers, senior staff and the school principal (Cresswell and Fisher, 1999; Fisher et al., 1993; Lee et al., 2003).

This paper assesses student perceptions of their biology teachers' communication behaviors in the classroom environment. Data were gathered from a sample of Turkish students in science classrooms. In keeping with previous researches, associations between students' perceptions of their biology teachers' communication behaviors in the classroom environment and their attitudes toward their science class were investigated.

### **THEORETICAL FRAMEWORK**

She and Fisher (2002) report that three common approaches to studying teachers and their classrooms are systematic observation, descriptive case studies, and using student and teacher perceptions. Systematic observation and case studies have been used frequently in the past; however, now perceptual measures are often used particularly when investigating a large sample of classes.

She and Fisher (2002), report a number of studies, e.g., Rosenshine, 1971; Walberg and Haertel, 1980; Stodolsky, 1984, in which the advantages of using student perceptions as indicators of the classroom environment have been elucidated. Examples of past findings include; students are directly involved in classroom activities and observe more of the teacher's typical behavior than does an observer; students are more familiar with their teacher's idiosyncrasies, which might be interpreted differently by an observer; using trained observers over a period of time is more expensive and time consuming than the administration and scoring of questionnaires; and the presence of observers could alter what generally occurs in the classroom (She and Fisher, 2002).

In the past three decades, much attention has been given to the development and use of instruments to assess the qualities of the classroom-learning environment from the perspective of the student (Fraser and Walberg, 1991, Fraser, 1998; She and Fisher, 2000). The association between learning environment variables and student outcomes has provided a particular focus for the use of learning environment instruments (She and Fisher, 2000).

In the past two decades studies about science student's outcomes focused primarily on educational objectives in the cognitive domain, but in more recent times attention has been paid to outcomes in the affective domain.

She and Fisher (2002) report also a number of research, e.g. Shulman and Tamir, 1972; Mathews, 1974; Hough and Piper, 1982; Gardner and Gauld, 1990, put forward that affective outcomes of the education are at least as important as cognitive outcomes and acknowledgement of the importance of affective outcomes is reflected in their increasing emphasis in curricula.

Associations between student cognitive and affective outcomes and the learning environment have been found when classroom environment perceptions have been used as predictor variables. For example Fraser (1994) provided a broad overview of these results, which indicate that classroom environment perceptions can influence students' outcomes.

Wubbels et al., (1991), report that the communication style of physic teacher is the most important variable in explaining differences in the students' appreciation of the lessons and the subject being taught at the class level. Because of the importance of students' affective outcomes in education and because past studies frequently have reported statistically significant associations between students' perceptions of their learning environment and their affective learning outcomes (Fraser, 1998), it was decided to examine associations between students' perceptions of their teachers' behaviors with students' attitude to their class (She and Fisher, 2002).

Although past studies have examined associations between students outcomes and student perceptions of the learning environment in science class (Fraser, 1994), the present study is distinctive in that, first, it assessed student perceptions of two distinct aspects of learning environments (namely, interpersonal teacher behavior and the classroom environment), and second, it examined student outcomes in two distinct areas—student attitudes towards biology lessons and examination system of the teacher.

This study centered on students (ages from 16 to 18) in different grades of high school biology classes and aimed to investigate associations between students' perceptions of their learning environment and students' attitudinal outcomes.

## METHOD

The survey instrument was constructed by the authors. The expert opinion of two educational evaluators and four biology teachers were used to validate the instrument. The Cronbach's alpha reliability for our instrument was 0,9076 (Number of cases=2463 and Number of items=33). The instrument was a five-point Likert Attitude Scale designed to determine "How do biology students' perceptions of their biology teacher, biology lessons, biology examination system?" has three chapters and total 33 items scale. There are 24 questions about biology teacher in the first chapter, and 6 questions about the examination system of their biology teachers in the second chapter, and 3 questions about their biology lessons in the third chapter. The responses to the statements ranged from strongly disagree to strongly agree. The survey instrument was given in appendix.

The survey instrument was administered to the student sample in Turkish. The sample was composed of students from 12 government high schools and 1 private high school (which encompass grades 9,10 and 11), which offer biology courses in Erzurum, Turkey. A total of 821 students in 25 biology classes were involved, representing nearly all of the students taking biology in Erzurum.

The Turkish education system has long been characterized as extremely examination oriented. The aim of education is not seen as expanding the learner's mind and developing the learner's intellectual potential, but rather as achieving high marks, passing examinations, gaining a university place, and obtaining a professional position with the highest possible salary. As in all parts of the Turkey, similarly in Erzurum, biology students are assessed on their performance in examinations during their course. Examinations may generally be written but rarely tests. The students' examination responses are assessed by their own biology teacher. In addition to three examinations, teachers have responsibility to assess students' verbal performance during the semester with more than a mark. Arithmetic average of the examinations and verbal performance marks determines whether the student pass the lesson or not.

Erzurum is a city that takes part in the east part of Turkey. In this part of the Turkey and Erzurum, a person's annual national income is under 1500 American Dollars. Generally people's especially parents' education levels are low. Most of the students have a rural origin.

## RESULTS

The results are reported in Table 1.

**Table 1: The survey of student perceptions of Biology Teacher's attitudes and communication behavior in Turkey (Valid percent of answers).**

Statements	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
<b>About your teacher:</b>					
1. Has a great Biology knowledge.	8.2	6.5	10.5	23.5	51.3
2. Teaches clearly and comprehensible.	7.7	7.4	11.3	24.9	48.8
3. Encourages students to join the lesson.	10.0	7.7	14.1	26.3	41.9
4. Lets us to criticize him/her.	16.2	11.7	19.9	19.1	33.1
5. Knows how to attract our attention to the lesson.	12.1	9.5	13.8	25.3	39.3
6. Encourages us to research and study lesson.	10.6	10.7	16.8	30.9	30.9
7. Keeps his/her words about the lesson.	6.3	7.3	12.2	26.0	48.1
8. Loves teaching us.	6.0	5.3	11.2	20.3	57.1
9. Tries to inform us the latest improvements about the lesson.	7.2	8.1	16.4	32.5	35.7
10. Wants us to be active during the lesson.	3.9	3.4	7.2	21.8	63.7
11. Encourages us about exams.	22.4	13.5	20.4	21.2	22.5
12. I don't like his/her teaching methods.	41.6	16.4	13.2	11.9	17.0
13. Warns the student acting negative during the lesson.	5.0	3.4	6.4	21.4	63.8
14. Never warns the student.	64.3	12.5	11.1	5.4	6.7
15. Wants us to keep silence during the lesson.	3.3	3.1	5.8	23.3	64.5
16. Controls what and how we learned.	12.7	8.7	16.6	26.3	35.7
17. Doesn't mind if one did homework late.	47.8	17.4	18.1	5.0	11.7
18. Doesn't rebuke students in order not to hurt their feelings.	30.1	11.2	14.8	15.1	28.8
19. Doesn't make preparation for lessons.	60.1	10.3	10.8	6.5	12.3
20. Makes an effort for explaining causes of his decisions and rules.	9.1	6.2	20.2	24.7	39.9

21.	Doesn't accept apologize of the student who is late.	44.9	16.3	13.8	7.6	17.4
22.	To him/her it is better students' to be emotionally good than the classroom control.	18.7	10.9	32.0	17.1	21.4
23.	Students know that if they've an important problem they can stop the lesson.	19.9	9.6	19.7	20.0	30.8
24.	Approves whenever students want to stop the lesson.	35.6	13.6	14.7	16.0	20.0
<b>About your examination system:</b>						
25.	His/her exam questions are a part of the education.	7.7	5.3	10.0	19.4	57.6
26.	His/her exam questions have been prepared carefully.	7.8	7.3	13.8	25.5	45.6
27.	Scores of the exam can be guessed before the announcement.	23.3	10.8	17.7	25.7	22.6
28.	Exam questions have been prepared carefully.	25.7	14.4	20.8	22.1	17.0
29.	His/her exams are good means in order to evaluate our knowledge level.	10.0	10.3	16.5	24.9	38.3
30.	I approve his/her examination style.	28.7	12.3	12.9	18.4	27.7
<b>About your biology lesson:</b>						
31.	This lesson holds important knowledge that I may have need in the future.	10.6	7.5	17.5	21.5	42.8
32.	I took the lesson important and studied enough.	7.7	7.8	15.3	31.5	37.8
33.	I enjoyed the contents of this lesson.	14.1	8.5	14.0	24.7	38.7

According to 74.8 % of the respondents, they think that their biology teachers have great biology knowledge. Nearly 73.7 of the respondents think that their teacher teaches clearly and comprehensible. 74.1% of the students informed that teachers keep their words about the lesson. 77.4% of the respondents felt that teachers love to teach biology. 85.5% of the respondents felt that teacher want them to be active during the lesson. 85.2% percent of the students indicated that teachers prefer to warn the students acting negative during the lesson. 87.8% percent of the students felt that teachers want them to keep silence during the lesson. 70.4 percent of the respondents felt that their teacher makes preparation for lessons. 68.2 % of the students felt that their teacher encourages them to deal with the lesson. 64.6 % of the students thinks that their teachers know how to attract students' attention. According to the survey, 61.8 % of the respondents felt that teacher encourages them to research and study about biology. In the area of honesty, In the area of improvements in biology, 68.2% of the students indicated that biology teachers try to inform them about the latest improvements in biology. But only sixty-two percent of the students felt that teachers control what and how they learned. 65.2 percent of the respondents pointed that teacher minds if one of the students did his/her homework late. 64.6% of the students thinks that teacher makes an effort for explaining reasons of his decisions and rules. 61.2 percent of the respondents indicated that their teacher accepts apologize of the student who is late.

About the examination system of the teachers; seventy-seven percent of the respondents stated that examination questions are a part of their education. 71.1% of the students thinks that their exam questions have been prepared carefully. 63.2 percent of the respondents think that their exams are good means in order to evaluate their knowledge level.

In the area of the lesson; 64.3% of the students thinks that their biology lesson holds important knowledge that they may have need in the future. Nearly seventy percent of the respondents stated that they took the lesson important and studied enough. In addition 62.7% of the students stated that they enjoyed the contents of biology lesson.

## DISCUSSION

The purpose of this study was to determine students' perceptions of their biology teachers' attitudes and communication behaviors in classroom environment in Turkey.

This study doesn't aim to criticize teachers for making mistakes, but rather provide a discussion frame of communication related problems in order to improve the subject knowledge and teacher training programs.

In this study included not only student perceptions of their biology teachers' attitudes and communication behaviors but also student perceptions about examination system and biology lesson from the viewpoint of students.

This study adds to the growing body of research in to learning environments in the junction of Asia and Europe, as well as to being the first study of learning environments research specifically in Turkey.

Besides this study is first to determine Turkish high school students' perceptions of their biology teachers' attitudes and communication behaviors in classroom environment, our research is going to lead further studies for teachers and researchers.

Students' responses indicate that attitudes, behaviors, communication and examination styles of the biology teachers in Turkey are generally between normal and acceptable limits.

When students' answers about their biology teachers' attitudes and communication behaviors reviewed it has seen that more than 85% of the respondents state that teacher wants them to be active and to keep silence during the lesson. This indicates nearly all of the teachers have a student-control ideology and inviting students to involve in learning activities.

In addition, 70-85 percent of the students agreed that their teacher; has a great biology knowledge, teaches clearly and comprehensible, keeps his/her word about the lesson, loves teaching them, wants them to be active during the lesson, warns them if necessary, wants them to keep silence during the lesson, makes preparation for the lesson. These indicate that most of teachers are: well informed about biology, use appropriate teaching methods of biology, honest to keep their words, enthusiastic to teach biology and loves their student, invite students to get involved in activities such as peer discussion, observing demonstrations, make preparation before lessons.

It is reported, by the 50-70 percent of the students, about teacher; encourages them to contribute lesson and research and study biology, knows how to attract their attention to the lesson, tries to inform them about the latest improvements of biology, observes what and how they learned, minds if one did homework late, accepts the apologize of one who is late. They also think that they like their teacher's teaching methods and they can break the lesson if they have an important problem. We can deduce from this paragraph that teachers: want their student to know that they can easily succeed in biology if they study enough, know the appropriate ways of how to attract students attention to the lesson without using negative ways such as fear and sarcasm, are interested in latest biological improvements and make effort to inform their students, get feedback and control how and what students learned, have some rules and want students to obey their lesson rule such as doing homework on time, accepting apologizes of one who is late indicates teachers are not always prescriptive and behaves respectfully to their students. Students approve their teachers' teaching methods and think that they have an understanding and friendly teacher so they could stop the lesson if they have valid problems.

But less than 50% of the students feel that teacher; encourages them about the exams, doesn't rebukes students in order not to hurt their feelings, doesn't approve whenever students want to stop the lesson. These indicate that some of the teachers: may use exams as a threat means, rebukes students in order to keep the general order of lesson, do not think that it's better students to be emotionally good than classroom control. These indicate that some of the teachers: don't encourage their students towards exams enough or may use exams as a threat, use sarcasm and humiliation and doesn't mind if he or she could hurt student's feelings.

When student perceptions about biology examination system reviewed it's seen more than 70 percent of the students think that exam questions are a part of their education besides having been prepared carefully. And student perception about the examination system is generally approval.

When student answers about the biology lesson reviewed it has seen that more than 64 percent of the respondents think that biology lesson holds important knowledge that they may have need in the future, and nearly seventy percent of the students state that they took the lesson important and studied enough and more than 63% of the respondents state that they enjoy the contents of biology lesson.

Now, we may think of what are the causes of different percents of the answer given to each statement? Answer of this question for each statement is multidimensional and different research subjects. Here, we would like to mention some of the possible reasons of deviation differences.

Unfortunately, studying the characteristic of effective teachers will not give us all the elements necessary to understand teacher misbehavior. As an analogy, it is not enough to study the characteristics of non-abused children when dealing with the abused ones (Sava, 2002). It is also difficult to distinguish if a teacher's attitude towards punishment reflects cultural norms or if it is a personal attribute.

The communication that occurs within schools is crucial in shaping the social reality that teachers' experience. In addition, perceptions about their schools heavily influences their attitudes and, in turn, their behaviors.

Because school excellence is directly related to what teachers think and do, effective communication is that the heart of creating and maintaining the effective school (Rafferty, 2003).

As expected, teachers' work conditions, assessed by their level of job satisfaction, affect teacher-student interaction. Hence higher level of job satisfaction leads to a better teacher morale, an aspect that is positively perceived by students. Also, the school climate indirectly affects the student teacher interaction due to teachers' level of burnout (Sava, 2002).

On the other hand we should consider that teachers, stay longer with their students in a school day, are not only interested if students learned the subject but also interested all personal characteristics of their students. For this reason they observe their students' house conditions, body, mental health and outside activities. But teachers teaching a certain lesson interest if students learned the subject more than students' personalities.

We should highlight the fact that teacher-student interaction is not only dimension of teacher effectiveness. This concept is multidimensional and also involves organization, workload/difficulty, expected/fairness of grading, instructor knowledge, and perceiving learning. However the quality of teacher-student interaction (teacher liking) has a very strong influence on the overall score when students evaluate their teachers (Marks, 2000).

Teacher effectiveness can be obtained both positive and negative control. The latter will negatively effect the student and will lead to school inactivity, apathy, lack of interest towards school matters, and behavior disorders. The use of fear as a motivator promotes either defensive behaviors or danger control process. Both force students to become motivated to learn in order to control their fear. Neither way represents the best approach when compared to positive control and co-operative attitudes towards children (Witte, 1998; Sava, 2002).

#### **IMPLICATIONS FOR TEACHING**

Teachers are pivotal to student perceptions of learning (West, 1994), inhibiting or facilitating student learning. When the literature reviewed it is seen that some of the qualities that lead to effective relationships are positive affection, warm attitude, tact of teaching, teacher immediacy and teacher power, teacher assertiveness and responsiveness, and low differential treatment. Lack of any of these traits may negatively influence teacher-student interactions.

It is probably unrealistic to think that negative control can be totally avoided. In fact, everybody engages in these kinds of behaviors occasionally. However we should limit such control since its use often teaches aggression, causes more physical responses, produces only temporary effects, and determines negative emotional conditioning (Baldwin and Baldwin, 1981).

More importantly, the tone of articles, which are examining teacher misbehaviors, should not criticize teachers for making mistakes, but rather provide a discussion frame of such problems in order to improve the subject knowledge and teacher training programs.

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