

A Study on Quality of Teaching-Learning Process in Elementary Education in Turkey: A Case Study*

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Abstract: This research makes an attempt at determining the quality of teaching-learning process occurring in the 4th grades of elementary education in Turkey and the way teachers use variables related to effective teaching. Quantitative and qualitative research methods are employed in combination in this research. Observations were performed in a classroom chosen from the 4th grades of 6 schools of differing achievement levels which were located in the central districts of Ankara and 3 students from each of those classrooms were interviewed. Besides, achievement tests were applied to students of each classroom selected from schools of differing achievement levels. The qualitative data obtained were exposed to content analysis whereas the quantitative data were exposed to one-way variance analysis and Scheffe analysis. In consequence, findings on the use of variables concerning the quality of teaching as well as on students' levels of general achievement were obtained.

Key words: Quality of instruction • Teaching-learning process • Elementary education

INTRODUCTION

Planning the process of effective teaching-learning depends on teachers equipped with various qualifications; and teachers are the most important variable in this process. Demirel (2005), describes the occupational qualities that teachers should have in applying the art of teaching as: planning the learning activities, employing methods and techniques of teaching, using the appropriate materials and aids and latest information technologies, being able to communicate effectively, being able to use classroom management in establishing a classroom environment enabling learning, being able to use time effectively and being able to perform effective guidance. [1]

Sönmez(2004), lists the activities that teachers do in the educational environment so as to instill target behaviours in students as: Organising the content according to the objectives, specifying the clues, corrections, reinforcement and feedback to give the students, having the student do the task, assuring student involvement, using the appropriate learning-

teaching strategies, methods and techniques, use of materials and aids by the teacher and the students, allowing sufficient time, organising the classroom in an appropriate way, treating the students with affection and encouraging them, use of appropriate reasoning processes, performing evaluation for shaping and raising purposes [2].

The quality of instruction includes basic components which have the power of affecting the learning outcomes -reinforcement, feedback and correction, clues, active involvement. Taking controlling and effectively enforcing those basic components which have an important function in raising the quality of instruction are among the occupational qualifications that teachers should possess [3].

Teaching and learning activities are the application part or the process part of the curriculum where the questions of "what should be taught?" and "how do they learn?" are answered. This stage is, to a great extent, the planning of how learning will be actualised.[4] Küçükahmet (2001), suggests that this process contains any type of activities for teaching the content. [5]

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* This is a part of the project directed by Prof.Dr.Nuray Senemoğlu and sponsored by Hacettepe University, unit of scientific research entitled "Defining Instructional Designs in the Primary Education" and also an extended version of the presentation made in "The International Symposium of Teacher Training Policies and Problems" held in Baku in May 11-15, 2007.

Variables such as learning environments, clues, active involvement, feedback-correction and strategies, methods and techniques of teaching and teaching aids and materials are employed in this stage [6, 7]. The quality of the teaching-learning process is defined as the extent to which the way materials to be learnt are presented, explained and devised are appropriate to students' learning. [4, 8] In order for the quality of teaching-learning process to be raised in a manner as to facilitate students the desired behaviours, firstly the current situation should be described.

Purpose of the Research: This research makes an attempt at determining the teaching-learning process occurring in the 4th grades of elementary education and the way teachers use variables related to effective teaching. The findings of this study, in which teachers' use of variables concerning the quality of teaching is described, are important in terms of contributing to programme development activities, organisation of teaching-learning environments and teacher training.

MATERIALS AND METHODS

Research Design: Because in depth as well as longitudinal study is done within the framework of 4th graders' lives, a case study was used; and since the classrooms selected from schools of differing levels of success were handled in a holistic way and then compared, a holistic multi-case design was used in the research.

Study Group: The research population was composed of the 4th grades in the elementary education schools located in the central district of Ankara. In specifying the study group, "maximum variability sampling", one of the methods of intentional sampling, was preferred. The results of LGS test (High School Entrance Test) administered by Student Selection and Placement Centre (OSYM) were used in determining the schools to conduct the research. The average scores received from the test by students of primary schools located in the central district were then ordered from the higher to the lower. The arithmetic averages and standard deviations for the schools were found. Schools with scores 1 standard deviation above the arithmetic average and 1 standard deviation below the arithmetic average were regarded as intermediate level. Similarly, schools with scores \pm 1 standard deviation above the average were regarded as upper level and those below the average were regarded as

lower level schools. Two schools for each level (lower, intermediate and upper) and a 4th grade from those schools were chosen for the study group and thus care was given to assure maximum variability.

Having determined the schools for research purposes, one teacher from each school – and thus 6 teachers in total – and 6 classrooms were observed. For interviews, three students from a school of upper, intermediate and lower level achievement were chosen in line with teachers' recommendation and the students were exposed to focal interviews. And achievement tests were applied to the 4th grades of schools of upper, intermediate and lower level achievement. Thus, 37 students from schools of upper level achievement, 45 students from schools of intermediate level achievement, 34 students from schools of lower level achievement; totally 116 students, were given the achievement tests in Turkish, Mathematics, Social sciences and Science courses.

Instruments: An observation form for determining the classroom environment, an interview form for interviews with students and achievement tests of Turkish, Mathematics, Social Sciences and Science courses for determining students' achievement were developed in this research. Information concerning the development of measurement instruments is presented below.

Observation Forms: A "structured observation form" was prepared so as to facilitate focussing and to assure observation in the same dimensions of classroom environment in schools with different levels of achievement. Following literature review, draft items for the specified dimensions were prepared and an experimental form was prepared based on expert opinion. A prior application was done in the 4th grades of schools which were not included in the study group. In the light of the data obtained through the experiment, the final shape was given to the observation form and thus it was employed in the observation process. In the process, two researchers observed the classroom and the teacher simultaneously from different locations in the classroom and took observation notes.

Interview Forms: A "standardised open-ended interview form" was prepared to assure that questions are asked in the same manner and order in each interview. The items probable to be included in the interview form were specified via expert opinion. The experimental form was analysed firstly in terms of the way the questions were stated with a group of fourth graders who were not included in the study group; and they were rearranged to

fit the age level. The pre-application was done with another group of students and the final shape was given to the form. Three separate focal interviews were conducted with nine students who had been determined in the study group. The interviews were recorded with a voice recorder.

Achievement Tests: In order to determine the achievement levels of the fourth graders, achievement tests for Turkish, Mathematics, Social Sciences and Science were developed. The pre-applications of the tests were conducted with groups of approximately 60 students in various schools and the item difficulty indices as well as item distinguishing power indices were determined for each item. Items with item distinguishing power above 0.30- that is to say, items with high reliability and validity, were selected. The tests which were given the final shape were applied to classes of observation. KR-20 reliability coefficients of the tests are as following: Mathematics: 0,74; Turkish: 0,66; Social Sciences: 0,63 and Science: 0,70.

Data Analysis: The data obtained via observation and interview forms were put to content analysis in this research. Having examined and arranged the observation and interview data, encoding was performed and themes categorising the codes into certain groups were obtained. After organising the data according to themes and codes, the findings were interpreted and reported. In the reporting stage direct quotations were used and the data obtained from schools of differing achievement level were compared and interpreted.

RESULTS

Findings Concerning the Qualitative Data: Findings concerning the quality of teaching-learning process were obtained in the dimensions of lead-in activities (gaining attention, making students remember the prior learning), clues, reinforcement, feedback and correction, active involvement, methods and techniques of teaching, teaching materials, classroom management and evaluation.

Gaining Attention: It is recommended that the required regulations should be carried out in starting the learning process to make students willing to learn [4]. In consequence of the analyses of data coming from observations, findings concerning how teachers performed lead-in activities were obtained. It was observed that teachers had attention gaining activities in the introduction part of their classes.

“...showing an apple to the class, the teacher said that the apple became fusty and the other apple next to it started to decay also. S/he juxtaposed the two apples and asked why that happened...”(Observation-Medium group-Science)

“...When the teacher entered to the class, s/he wanted students to open their atlases and look at them...”
(Observation-High group-Social Sciences)

At the beginning of a lesson, the teacher needs to establish a positive mental set, or attitude of readiness in students. [9]It was found that teachers gained students' attention to the topic through related photos, maps or real material. However, it was also observed that they did not inform students of the target behaviours to be acquired and of the importance of the topic or where to use the learnt material.

Reminding the Prior Learning: Reminding the prior learning is important in students' establishing connections with newer knowledge and thus actualising meaningful learning.

“...After the second problem presented, the teacher asked the liquid measures in relation to their prior knowledge as there was a liter concept in the problem ...” (Observation-Medium group-Mathematics)

It was found that teachers chose to remind students the prior learning especially in courses with pre-requisite connections. In this sense, teachers may be said to make efforts so that meaningful learning can take place.

Clues: Use of clues reminding students what, why and how to do in the teaching-learning process when necessary is very important for the quality of instruction. The clues may be communicated to students through oral descriptions, visual stimulants or through senses of touching and feeling or smelling [7,10] Findings on how the clues were provided were obtained in this current research.

“... While examining the map, one of the students said: “There's China below...” and upon this, the teacher said: “while we're examining maps we do not say below or above, lets say the directions...”
(Observation-Low group-Social Sciences)

“...The teacher to students: “please solve the problem by diagrammatizing...”(Observation-Low group-Mathematics)

“... While students were sharing their sample sentences, the teacher corrected their sentences and emphasized the importance of clear speech. S/he said: “speak slowly and meaningful without faulty articulation, then you will have clear speech...” (Observation-Low group-Turkish)

It was observe that teachers instructing in schools of upper-intermediate-lower level achievement gave clues to students to help find the correct answers and that they made explanations as to how to learn. It may be said that the clues given by teachers are of the quality that enable students to perform the target behaviour. Data obtained through interviews with students also support the observation findings.

“... S3: when our teacher asks a question and we can not answer, s/he helps us...” (Interview-Low group)

“... S3: when s/he gives a homework or an assignment, she say: “do it like that or that would be better if you do like that”...” (Interview- Medium group)

“... S2: before performing something in the lesson, the teacher explains how to it. Sometimes I can’t answer as I forget, but s/he reminds a word then I immediately remember...” (Interview-High group)

It is understood from the above quotations from student interviews that teachers provided clues to help students find the correct answers and that they made explanations on how to do the assigned tasks or homework. Besides, it was also found that teachers employed more oral clues. It may be stated that clues provided by teachers are of the quality that enable students to perform the target behaviour.

Reinforcement: Reinforcement, which is defined as stimulants which increase the frequency of repeating behaviour, should be used by teachers so as to make learning effective. Reinforcement plays important roles in improving the quality of teaching-learning process. When people are learning a new behaviour, they will learn it faster if they are reinforced for every correct response. [11] The way reinforcement is provided by teachers was revealed through data obtained from observations and from interviews with students.

“... The teacher: “that’s very good, you friend has summarized really good, hasn’t s/he? Let’s applaud her/him...” (Observation-Low group-Social Sciences)

“... The teacher: “well done, so your friend has listened carefully the text from different source and detected the unknown word ...”(Observation-Medium group-Turkish)

“...The teacher both thanked and marked stars to the students solved problems...” (Observation-High group-Mathematics)

As is evident from the above quotations, teachers instructing in every level of achievement were observed to give reinforcement for positive behaviours and explain the reason for the reinforcement. Therefore, teachers may be said to obey the rules of giving reinforcement and use reinforcement effectively. Interviews with students also support the findings.

“... S1: when I write and read clear, the teacher always says me well done and I have lots of stars marked on my notebook...” (Interview-Low group)

“... S1: “I like my teacher’s praising me. Sometimes when I do a good job in a what s/he likes, he makes the class applaud...when I go home and tell this to my mother and she gets happy ...” (Interview-Medium group).

“... S4: I always want to be praised by the teacher, because I get happy when s/he says “well done, that’s good” Besides s/he thanks me when I answered the questions correct...” (Interview-High group)

Feedback- Correction: The procedure of feedback and correction provided to see the corrects and incorrects in students’ learning and to make up for the lacking parts and to correct the mistakes is a vital component of teaching services [3]

“... While students were writing the summaries, the teacher wandered around the desks, checked their writings and explained some of the students how to summarize...” (Observation-Low group-Turkish)

“...after the solution of the problem on the board, the teacher wanted students who did wrong to copy of the right solution of the problem from the board...” (Observation-Medium group-Mathematics))

“...the teacher checked all the home works one by one and all the problems were solved progressively...” (Observation-High group-Mathematics)

It was found that teachers performed feedback-correction. In this context, teachers may be said to give feedback-correction to inform of students' right and wrong behaviours, to improve teaching quality and to discover behaviours needing correction and to motivate them into prospective success. Feedback-correction procedure, which gives information on the right and wrong learning and is used to compensate for the inadequacies or to correct the mistakes, is an integral part of teaching services [3]. The way feedback is given by teachers and the way teachers compensate for the inadequacies in the teaching-learning process was explored through data obtained from observations.

"...The teacher wanted students a written summary of the subject. S/he started to check student's writings wandering around them and explained some students how to summary. The teacher stated that they had no time for checking all your summaries, so they had to skip another subject..." (Observation-Low group-Turkish)

"...Teacher wanted students to solve the problem on the 22nd page of the Math books. Students who solved problems wanted learn if they had right. After checking some of the students, the teacher said: "we have no time, I can not check all of you" and asked for one student to solve it on the board. Then he wanted students to correct their mistakes...." (Observation-Medium group-Mathematics)

"...The teacher wanted students to write an essay on environmental pollution regarding the grammatical aspect. Then s/he started to check student's writings but the bell rang. So students asked: "teacher, wouldn't check ours?" The teacher said: "I would do later" and students complained: "but you wouldn't..." (Observation-High group-Turkish)

As is clear from the above quotations from observation records, teachers of lower, intermediate and upper group schools make efforts to give feedback to students and to compensate for their inadequacies, but they do not have sufficient time to give feedback to all students and to compensate for their inadequacies. Observations made it clear that it stemmed from the fact that classrooms were overcrowded. In this context, it may be said that teachers do not include sufficient and effective feedback-correction procedure to give information about the right and wrong behaviours, to improve teaching quality, to spot behaviours needing

correction and compensation and to motivate students into learning. Students often need help figuring out why their answers are incorrect. Without such feedback, they are likely to make the same mistakes again. Yet this type of feedback is rarely given. In one study, only about %8 of the teachers noticed a consistent type of error in a student's arithmetic computation and informed the student. [12]

Active Involvement: One of the important variables that teachers need to employ in making the teaching-learning process more effective is active involvement. It is emphasised that facilitation of involvement especially at early ages increases effectiveness [1,8].

"...The teacher began to tell the requirements for an establishment of a nation in terms of residential features and in relation to this subject s/he asked questions and got answers." (Observation-Low group-Social Sciences)

In the course of presentations, students ask questions to each other. It is created totally active learning environment..." (Observation-Low group-Social Sciences)

"...In the course of presentations, students ask questions to each other. It is created totally active learning environment..." (Observation-Medium group-Science)

Students learn more when they are engaged actively during an instructional task. [10] Teachers instructing in schools of lower, intermediate and upper level achievement were observed to try to enable students' active involvement. It was found that – in order to assure active involvement- teachers in schools of lower and intermediate level achievement employed question and answer technique more often whereas teachers in upper level achievement schools used methods and techniques such as drama, group work, journey-observation and research work which enable learning through experience.

Methods and Techniques of Teaching: Teaching methods occupy a very significant place in attaining the educational objectives as well as in regulating the teaching-learning process. [13]

In order to assure student's active involvement, teachers in lower, intermediate and upper level achievement schools were found to employ different

methods and techniques. Accordingly, teachers in lower and intermediate achievement level schools preferred lecture method more often and employed question and answer technique to facilitate students' involvement.

"... The teacher told the Phrygia state using maps and photographs. S/he asked: " is there anyone who didn't get this subject?" and asked if anyone would like to summarize. One student summarized the subject. Then teacher asked question related the subject..." (Observation-Low group-Social Sciences)

"...The teacher to students: "we have learned what a circle is, then what is a disc? Teacher rounded a carton and showing its bottom and asked what was it. Students said that it was a circle. The teacher then closing its bottom and asked again what would it be, they answered it would be a disc. Then to students" when you play games, are there anything similar to circle?" Students gave various examples and the teacher also gave extra samples..." (Observation-Medium group-Mathematics)

Contemporary views of education require the teacher to select and employ the method capable of actualising learning to the maximum. Despite this, due to various reasons, most of the teachers in elementary and secondary education schools use traditional methods of instruction based on students as passive listeners within the framework of specified course books.[14] Teachers in upper level achievement, on the other hand, used the methods and techniques of drama, group work, trip, observation and research work in which students learn through experience.

"...The teacher said: " well, lets animate" For the animation, students were chosen and teacher gave 5 minutes for the preparations and said that he wouldn't intervene in this preparations process. After the animation, the next group performed..."(Observation-High group-Turkish)

"...Students were taken away to the forestland by their teacher and examined subjects related to science course. Various kinds of plants collected and their roots, bodies and leaves were examined..." (Observation-High group-Science)

Students were frequently observed to solve problems in the upper group whereas they were occasionally observed to do this in the lower and intermediate groups.

"...Teacher aroused interest by asking: "who would like to solve the problem best?" S/he reminded the previous lesson's knowledge by saying: "How did we solve a problem, yesterday?" He called a student who did wrong to the blackboard and wanted him to solve with an explanation..(Observation-Medium group-Mathematics)

Teaching Materials: While teaching aids and materials were considered as supporters of teaching and their use was left to teachers' choice and interest, they are thought to be integral part of teaching-learning process today. [15] Teaching materials and aids function as the carrier of information between the source and the recipient in this process. Therefore, materials to meet students' needs fully should be selected and used [16].

It was found that students were encouraged to learn from various resources (such as books, individuals, instruments), various materials supporting learning were provided effectively in the upper level group, but that they were occasionally provided in the lower and intermediate groups.

"... The Teacher Said: "which rivers were in the Great Hun Empire? Let's look at map in your books, find and point at it. The teacher often prefer to benefit from maps..." (Observation-High group-Social Sciences)

Students stated that course books, unit journals and test books were used as the fundamental sources in classes; and those dictionaries, VCDs, the internet, experiment materials and journey-observation were also used in addition to the fundamental sources.

Classroom Management: It was observed that teachers sometimes organised activities in the intermediate and upper level groups for students to work together by enjoying themselves but that they did not organise such activities in the lower group.

"The teacher called the students to the blackboard and presented their groups. The members of group told their roles.." (Observation-Medium group-Social Sciences)

"The teacher chose one student from each group. When one of chosen student did right, his/her group got delighted. Another question and again one each student was chosen from three groups. The students solve problems cheerfully" (Observation-High group-Science)

However, it was observed that students mostly did not enjoy being in classes, that they were rather bored and that they just tried to fulfil their responsibilities.

It was occasionally observed that a positive interaction was maintained with all the students in class and that guidance was provided for students to maintain their positive interaction in all the groups.

“... The teacher gave hints on the solutions. He both thanked and marked stars the ones who did correct. The teacher has a smiling face and students are eager for solving problems. He gives hints to the ones who had difficulty in solving problems. He explained the problem again to the ones who couldn't do by motivating them” (Observation-High group-Mathematics)

“... The teacher didn't intervene in the student who had difficulty in reading and made him continue to read. The teacher said encouraging words to students who had reading difficulties. S/he said: “now you have books and you will borrow new ones from library. You will speed your reading ability and improve like your other friends” (Observation-Medium group-Turkish)

The management of student behaviours, especially disturbing or inappropriate student behaviours, is one of the issues requiring considerable efforts in constructing an effective learning environment. [17, 18] It was observed occasionally in the upper group that although discipline problems occurred occasionally in classes, the disciplinary problems were not handled in the desired way; a friendly atmosphere was not created in classes; and students were encouraged to compete individually; yet those were mostly observed in the intermediate and lower groups.

Evaluation: Evaluation ensures determining the extent to which desired changes in students' behaviours have occurred. [4] Following this, impediments in the curriculum as well as the causes for them are determined and modifications are made to some components if necessary. Evaluation may be performed through measurement instruments comprising of open-ended or multiple-choice question items as well as with approaches such as portfolio evaluation which test the process rather than the outcome according to the properties of the field of subject at the end of the curriculum. [19]

The observations demonstrated that teachers did not make efforts to check whether students achieved the objectives or not in the conclusion activities of the course, did not make process evaluation and they employed multiple choice tests and written exams for outcome evaluation. According to Ellis and Worthington (1994), using formative assessment as a diagnostic tool can help teachers make the necessary adjustments to their practices to meet the individual needs of students. In reviews with students, findings were obtained as to how teachers made assessment to determine the level of achievement. [20]

“... S2: Our teacher holds an essay type examination but we have also tests. In the tests the questions are on the learned subjects, nothing different...” (Interview-Medium group)

“... S1: S/he tests on from books, journals and different sources and apply them...” (Interview-High group)

It was stated by students that teachers asked questions based on the course books and multiple choice question and that they gave essay type exams and rarely they also asked questions asking the meaning of knowledge.

As the above quotations reveal, teachers use multiple choice tests or written (essay type) exams to assess students and they ask questions testing the knowledge in the course book or in the unit journal. It may be suggested that this is far from questioning the meaning of the learnt material and that it forces students to learn by memorization.

It was observed in all groups that whether or not students acquired the critical behaviours was not checked at the end of classes and that questions forcing students to copy the knowledge from the book or the unit journal (unit supplementary material) and forcing them to memorization instead of thinking were asked.

Peer evaluation was also occasionally observed in classes.

“... When one of the students makes a mistake in reading, the other students correct him/her. (Observation-Low group)

Findings Concerning the Quantitative Data:

One-directional variance analysis (Anova) was performed in order to determine whether or not score averages received by 4th graders of upper, intermediate and lower levels of achievement differed significantly;

Table 1: The Anova Results of Students' Turkish Test Scores On the Basis of Schools

Source of Variance	Square totals	Sd	Square averages	F	P	Significant difference
Intergroups	95.826	2	47.913	6.478	.002	Upper-lower
Intragroups	761.769	103	7.396			
Total	857.594	105				

P<0.05

Table 2: The Anova Results of Students' Social Sciences Test Scores On the Basis of Schools

Source of Variance	Square totals	Sd	Square averages	F	P	Significant difference
Intergroups	38.966	2	19.483	2.465	0.090	
Intra groups	790.413	100	7.904			
Total	829.379	102				

P<0.05

Table 3: The Anova Results of Students' Mathematics Test Scores On the Basis of Schools

Source of variance	Square totals	Sd	Square averages	F	P	Significant difference
Intergroups	166.024	2	83.012	6.187	0.003	Upper-lower
Intragroups	1449.165	108	13.418			
Total	1615.189	110				

P<0.05

Table 4: The Anova Results of Students' Science Test Scores On the Basis of Schools

Source of variance	Square totals	Sd	Square averages	F	P	Significant difference
Intergroups	192.961	2	96.481	9.837	0.000	Upper-intermediate,
Ontragroups	1039.589	106	9.807			Upper-lower
Total	1232.550	108				

P<0.05

and significance level was regarded as 0.05. And in order to see between which groups the difference was available, the Scheffe test was done. Findings concerning the analyses were handled separately for each course and were presented in Tables 1, 2, 3 and 4; and the groups having differences according to the Scheffe test were given in the last column of the table.

On examining the 4th grade Turkish course test results shown in the tables, it was found that a significant difference at the level of 0.05 was available between the upper and the lower achievement averages. Accordingly, the upper level students may be said to be more successful than the lower level students. It was also found that the upper-intermediate and intermediate-lower groups did not differ significantly at the level of 0.05.

On examining the 4th grade Social Sciences test results shown in the tables above, It was found that the difference between the upper, intermediate and lower level achievement averages was not significant at the level of 0.05. Based on this result, all the groups may be said to have similar achievement averages.

On examining the 4th grade Mathematics test results shown in the tables above, it was found that a significant difference at the level of 0.05 was available between the upper and the lower group achievement averages. Accordingly, the upper level students may be said to be more successful than the lower level students. It was also found that upper-intermediate and intermediate-lower group students' achievements did not differ significantly at the level of 0.05. The upper-intermediate group students' achievement was very close to that of intermediate-lower group students'.

On examining the 4th grade Science test results, it was found that a significant difference at the level of 0.05 was available between the upper group averages and the intermediate and lower group achievement averages. Accordingly, the upper level students may be said to be more successful than the intermediate and the lower level students. It was also found that the intermediate and the lower level students did not differ significantly at the level of 0.05. Thus, it may be said that the intermediate and the lower level group students displayed achievement very close to each other.

DISCUSSION AND CONCLUSION

Raising individuals who lifelong learn, use their capacities to the maximum, solve problems, work in cooperation, who are creative and who research and think is possible only by employing learning environments which enable students to learn in a meaningful, permanent and creative way. According to Cruickshank *et al.* (1999), the major skills held by effective teachers include gaining students' attention, teaching in a manner so as to involve student participation, providing variation in using methods and techniques of teaching, conducting direct teaching, giving feedback and reinforcement. [21] The behaviours of asking questions, giving explanations, giving reinforcement, giving feedback, making corrections, motivating, doing exercises, sustaining students' attention, giving clues and keeping the flow of class displayed by the teacher in organising activities so as to facilitate learning are all related to teaching-learning process [22].

The effects of learning environment on children's cognitive and affective development may not be ignored. Undoubtedly, learning environment provides the ties between the teaching-learning process and the learner's development. Roberts (2001) emphasises the teacher's role in establishing high quality learning environments and describes the properties of teaching and what should be done in this process as: creating a classroom atmosphere helping to meet students' needs, setting the aims and objectives on the basis of cooperation with students and being open to thoughts and suggestions offered by students, receiving help from them in enforcing the applications, being wishful enthusiastic and sacrificed in terms of teaching-learning, being flexible and open to criticism, being an active participant and a good listener in group work activities, being aware of learner needs and being alert to needs capable of arising, being able to evaluate the process of learning as well as the effects of the process on students, adapting the elements which worked previously in the learning process, re-using or modifying them and employing completely novel elements when necessary [23].

In this research an attempt was made to determine the teaching-learning process occurring in the 4th grades of elementary education and the way teachers used variables related to effective teaching-learning process.

It was concluded on the basis of research findings that;

- Teachers attracted students' attention to the topic through related photos, maps or real material but they did not inform students of the target behaviours to be acquired and of the importance of the topic or where to use the learnt material,
- Teachers chose to remind students the prior learning especially in courses with pre-requisite connections and thus made efforts so that meaningful learning could take place,
- Teachers gave clues to students to help find the correct answers, made explanations as to how to learn; and that the clues given by teachers were of the quality that enabled students to perform the target behaviour,
- Teachers instructing all levels of achievement gave reinforcement for positive behaviours and explained the reason for the reinforcement and in this sense they obeyed the rules of giving reinforcement and use reinforcement effectively,
- Teachers gave feedback-correction to inform of students' right and wrong behaviours, to improve teaching quality and to discover behaviours needing correction and to motivate students into prospective success,
- Teachers of all levels of achievement made efforts to give feedback to students and to compensate for their inadequacies, but they did not have sufficient time to give feedback to all students and to compensate for their inadequacies due to the fact that classrooms were overcrowded,
- Teachers in lower and intermediate achievement level schools preferred lecture method more often and employed question and answer technique to facilitate students' participation, but teachers in upper level achievement used the methods and techniques of drama, group work, journey-observation and research work in which students learned through experience,
- Teachers used multiple choice tests or essay type exams to assess students and they asked questions testing the knowledge in the course book or in the unit journal and that this was far from questioning the meaning of the learnt material and that it forced students to learn by memorization,
- According to the data coming from the achievement tests, students were more successful at Turkish and Mathematics in the upper level group than in the lower level group; there were no differences between the upper and the intermediate level groups and between the intermediate and the lower level groups;

students in the upper level group did better in Science than the students in the intermediate and the lower level groups; and there were no differences between the achievement averages of the upper, intermediate and lower level students in terms of Social Sciences,

- Teachers' use of variables improving the quality of teaching services affected students' level of achievement.

Findings obtained from the research describing the quality of teaching in the second grade of primary education schools also overlap with the conclusions summarised above. [24]. In order to be able to use the variables of clues, reinforcement, feedback/correction and student participation – which improve the quality of teaching- teachers should be offered in-service training. It was found that excessive number of students in each class affected teachers' effective use of the above mentioned variables in a negative way. Therefore, efforts should be made to reduce the number of students in classes. Teachers of lower and intermediate achievement level schools should be informed of using different methods and techniques. It is recommended here for the prospective research studies that such studies should continue and include other cities and grade levels and that the reasons for teachers' failure to use different methods and techniques in the teaching-learning process should be investigated.

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