

# A Case Study on the Use of Materials by Classroom Teachers

*Kasım YILDIRIM\**

## **Abstract**

This research has the nature of a descriptive case study aiming to clarify the opinions of primary education classroom teachers about the use of materials and tools in the lessons. It is a qualitative research benefiting from focus group interview method which is one of the efficient data collection techniques. "Semi-Structured Interview Form" has been used as data compilation tool. Research has been conducted in autumn term of 2006-2007 education year, in a primary school in Kırşehir province. Working group is composed of ten classroom teachers. Voice recorders and video cameras have been used in interviews. Data compiled through research have been analyzed by content analysis method and NVivo program. Consequently classroom teachers, who have been interviewed, have stated that they carry out various activities for an efficient and effective education and teaching; they use different materials in lesson in order to create a multi-learning setting for students; they are faced with many problems in terms of material use; the newly adopted education program requires more material use, however, due to the lack of sufficient preparation for the program this has not been possible; they also develop materials at school; they generally feel sufficient and successful in terms of material use; they are optimistic about material use in education in the future, however, they also think that the negative aspects of insufficient material will create problems in the future.

## **Keywords**

Classroom Teacher, Material, Education-Teaching, Learning, Classroom Setting.

\* Correspondence: Research Assistant, Ahi Evran University Faculty of Education, Discipline of Primary Education Classroom Teaching 40100-Kırşehir-Türkiye, E-mail: kyildirim@gazi.edu.tr

One can only adapt to his/her setting through education and teaching. However, this setting should be organized in such a way that it should ensure efficiency and effectiveness in learning and should guarantee functionalism. One of the main elements which will ensure efficiency in learning is the use of materials (Yalın, 2003).

Use of materials in teaching can be identified best as the use of supporting elements which enrich the education and teaching setting, facilitate learning and concretize addressing the sense organs of the learner.

While acquainting the individual with relevant information, skills and attitudes, educators try to increase the efficiency and effectiveness of education through analyzing various aspects of learning-teaching process such as “teaching programs, learning-teaching settings and teaching methods”. Development of teaching programs as well as learning and teaching methods and increasing the efficiency of present technologies or material in terms of reaching their goals have become the major objectives (Yıldız, Sünbül, Halis & Koç, 2002).

Taking the findings of these research as basis, in 1974, education technologists comfortably announced that sufficient evidence was compiled in order to make the below mentioned statements (as cited in Yıldız et. al, 2002).

When materials are included in education programs, learning also improves.

When various materials are used during education, learning occurs more rapidly.

Students prefer teaching methods benefiting from materials to traditional methods.

These results have once again confirmed the advantages introduced by the use of materials in teaching. They have also shown that the use of materials in teaching contributes to a more meaningful understanding of information by the students.

During learning and teaching process, materials are generally used to support teaching. Well-designed teaching materials enrich the teaching process and facilitate learning. In other words, materials yield to a multi-learning setting. (Yalın, 2003). The reason behind this fact is that the number of sense organs stimulated through this

type of teaching increases, paving the way for efficiency and persistency in learning. When audio-visual materials are used in teaching, learning takes place in a quicker and more permanent manner.

During the planning of teaching techniques, a teaching setting which stimulates more sense organs in order to introduce the target behavior and ensure permanent learning should be organized whereas this setting should be enriched through audio-visual instruments. This is not only significant for simplifying and concretizing the teaching process, but also for ensuring that the teaching process can address students with different learning capabilities (Özmen, 2005).

As was stated by Vural (2004), the only way to motivate the students and ensure a relatively easier learning process is to make use of materials addressing more than one sense organ. In professional and technical education, so as to introduce and teach the requirements of ever-developing technology to students and make sure that they are acquainted with it, the use of audio-visual education instruments is a must. Education activities carried out by using these instruments will display several subjects, cases, works and operations in line with their real-life versions and students will observe them by themselves. This will also result in the shortening of time devoted to teaching. Materials are generally used to support teaching. Well-designed and structured teaching materials enrich the teaching process and increase the amount of learning.

Taking all these into consideration, it would be appropriate to state that the use of materials in education and teaching has led to the opinion that “taking several measures is a must”. Teachers and educators should know how to use which materials at which level and what kind of students should be provided with which types of behavior, based on which principles and under which circumstances (Çilenti, 1998).

In order to make the best use of materials; appropriate materials which are in compliance with the relevant subject and education level should be selected and the right method should accompany those materials. At the same time, these materials should be used at the right time and in the right setting (Doğdu & Arslan, 1993; Özmen, 2005; Vural, 2004; Yalın, 2003).

According to Gürkan and Gökçe (as cited in Şahin, 2005), should the teacher take into consideration the below mentioned points during material selection, more efficient and effective results could be taken. Materials:

should be in accordance with the developmental features, interests and needs of the students

should bring about the planned achievements

should be appropriate for classroom use

should pave the way for presenting the topic more efficiently

should be clear about their methods and conditions of use

should be handy, economic and easy-to-transport from one place to another.

The use of materials during teaching in accordance with the above mentioned principles is very important especially for primary education students as it provides more efficient learning setting.

When primary education is compared to other education levels, it becomes evident that it is an education level which should include more materials than any other level. Students of this level require more concrete learning experiences. These learning experiences require multi-setting education and teaching activities with more materials (Hızal, 1992).

As the primary school students have difficulty in learning the abstract concepts; materials have a significant role in the introduction and understanding of such abstract concepts by these students. Moreover; when the materials, which are products of education technology, are used efficiently and a more qualified education setting is created through better use of materials, problems encountered in education technology in Turkish Education System will be solved to some extent, thereby, positively affecting the quality and efficiency in education (Şahin, 2005).

Niemi and Gooler (as cited in Abbott & Faris, 2000) state that the use of tools and materials in primary education is an indispensable element of both individual and group learning, facilitates learning, provides more and better information resources, creates different learning alternatives and increases the learning motivation of individuals.

As a result of the research conducted in this field; it is concluded that lesson tools and materials used by Al-Batanich and Brooks (2003) enrich learning settings and increase the academic success whereas in Clark's (2000) research it has been revealed that the use of tools and materials attracts the attention and increases the motivation of students. Kulik, Kulik and Cohen (1980) stated that the use of tools and materials in education setting ensures that learning takes place faster and at a lower cost. The study which was conducted by Sherry, Billig, Jesse and Watson-Acasta (2001) emphasizes that the use of tools and materials contributes greatly to achievement of objectives by the students and increasing the academic success of students.

Within the framework of all the available works and studies, there are many studies testing the effect of the use of materials and tools in various subjects in Turkey: Adıgüzel (1998) and Çoşkun (2005) stated that the use of materials in Social Sciences and Countries' Geography course increased the academic success of students and influenced their attitudes positively. In his study, Dumlu (2006) found out that the use of materials and tools in the course of Social Sciences and Countries' Geography increased academic success and ensured that the students displayed greater interest to the lesson. In his study Dumlu (2006) stated that the use of materials and tools in geography courses contributed greatly to learning process. Eren (1998) and Hamurcu (2000) emphasized the significance of materials and tools while teaching Science at primary school level. Mutlu (2001) stated that the use of materials and tools in the lessons mitigated the burden of the teachers whereas Öztürk (2006), Şahin (2005) and Uçar (1998) stated that teachers in Turkey attach great significance to the use of materials and tools in education and learning setting.

In this research the opinion of primary education classroom teachers were taken in terms of the use of materials in providing an efficient education and teaching. Present situation in terms of the use of materials and tools in education setting is defined. Within the framework of this general objective, below mentioned questions have been posed:

1. What do the classroom teachers do for an effective education-teaching during their lessons?

2. What are the effects of the new program implemented at 1st level of primary education on the use of materials and tools?
3. What is the competency level of classroom teachers in terms of material use?
4. What should the classroom teachers take into account while selecting the materials and tools in an education setting?
5. What are the problems of classroom teachers in terms of the use of materials and tools?
6. What is the opinion of classroom teachers in terms of the use of materials and tools in the future?

## **Method**

### **Model**

This research has the nature of a descriptive case study concerning the opinion of classroom teachers in primary education on the use of materials and tools.

Most frequently used data collection methods in case studies are interviews, observations and document analysis. Focus group interview technique has been used in this research (Yıldırım & Şimşek, 2005). At the beginning of 1940's, Robert K. Merton developed focus group interview technique as a means of evaluating the war process. Morgan (1992, 1996) has re-adapted this technique and used it in sociology, pedagogy, education and political sciences. Focus group interview is a kind of discussion held by a group of people who have never met before on a random subject in the form of an interactive conversation as much as possible and within a limited period of time (Brotherson, 1994; Överlien, Aronsson & Hydén, 2005). First of all, the replies given to questions in focus group interviews are formed as a result of interactions between group members. Once the reply to a question is heard by another member of the group, he/she will have the opportunity to form replies within this framework. Group dynamics are very influential in terms of the scope and depth of the replies. This is a common feature of focus group interviews, which is very helpful in the formation of a rich data set (Yıldırım & Şimşek, 2005).

## **Participants**

This study is based on a research conducted in a public primary school in Kırşehir province, with an average socio-economic student profile. “Easily Accessible Case Illustration” is used as sampling method. This method facilitates the research and makes it more practical. In this method, researcher selects a case which is familiar and easily accessible (Yıldırım & Şimşek, 2005). Teachers taken into the scope of sampling have been selected from all grades (1st, 2nd, 3rd, 4th and 5th grades). Apart from this, classroom teachers with an experience of 10 years have also been taken into the scope of sampling group. Focus group interviews have been held in the form of morning and afternoon sessions with the participation of five classrooms teachers working on morning shift, five classroom teachers working on afternoon shift.

## **Collection of Data**

“Semi-structured interview form” has been used as data collection tool during the interviews. Relevant literature was scanned; outline of interview which was on the pilot stage was formed; and in accordance with the data provided in the literature, semi-structured interview form was prepared. Changes and improvements were made in the form as a result of the opinions provided by experts. As a result of the pilot implementation, irrelevant questions were excluded from the form and the interview form (composed of 8 questions) was finalized. However, as a result of the opinions raised during the discussions, inquiry questions were also included. Studies were carried out with the participation of two assistant researchers. One of the assistant researchers took the notes during the interviews and took care of the needs of test subjects in sampling group. The other assistant researcher was responsible for audio-visual recording of interviews. I was responsible for posing the relevant questions to classroom teachers and ensuring that the interview took place in the form of a comfortable chat. Focus group interviews which were held in two sessions lasted approximately 70 minutes each. Data were recorded via voice recorder and video cameras.

### **Data Analysis**

NVivo program and content analysis method which is frequently used in qualitative research has been used in the analysis of collected data.

Data were transferred to computerized media through Office programs. Texts were checked repeatedly and codings were formed. Concepts used during the coding were obtained from data relevant to literature. Continuous comparison method was also employed during the analysis. Continuous comparison method ensures that the research conductor presents the load of data in a clear and concise manner (Kvale, 1996). Codes were consolidated, their common points were specified, therefore main themes (categories) forming the outline of research findings were determined. Codes under specified themes were interpreted in relation to each other and accordingly the results were set forth (Maykut & Morehouse, 1994). While the findings were interpreted; theoretical explanations and relevant research previously conducted in this subject were benefited from. All the information which supported the findings -as well as those which did not- was provided along with their justifications. Results obtained through interview analysis were presented in line with the "Approach on data display in accordance with categories" offered by Miles and Huberman (1994).

### **Validity of Research**

Inferences made through analysis were backed by the inferences of other experts on this subject and accordingly necessary modifications were made. Inferences were also submitted to the attention of the participants. Upon confirmation by participants, validity and reliability of the research increased. According to Glesne and Peshkin (1992); studies of this kind support the inferences and interpretations of the researcher providing him/her with different perspectives. Moreover, the content analysis made on the compiled data as also backed by NVivo program which is a computer aided qualitative data analysis method.

In order to confirm the inferences made by researchers and reflect the opinions of the participants, sample quotations from interviews were given. Abbreviations were used: (S) for teachers working on



morning shift, (Ö) for teachers working on afternoon shift, (E) for male teachers and (B) for female teachers. Moreover, a sequence order was given to each teacher such as; (SE1): S: morning shift, E: male, 1: teacher number 1, (ÖB3): Ö: afternoon shift, B: female, 3: teacher number 3.

## Findings

This study deals with the opinions of primary education 1st grade classroom teachers about the use of materials and tools. Findings which were achieved as a result of “Focus group interview analysis” are included in this section. These findings are presented in line with the “Approach on data display in accordance with categories” offered by Miles and Huberman (1994). Moreover, due to the fact that the replies of teachers in morning shift as well as the replies of teachers in afternoon shift are to a great extent the same, data pertaining to these two different groups have been analyzed and presented together.

## Efficient Education and Teaching

All of the teachers have specified that they use materials and tools in order to attract the attention of their students and increase the effectiveness and efficiency in education-teaching setting. In addition to this; teachers have stated that they are concerned with the cooperation between school and family (1), trying to create proper physical conditions for students (3), striving for the creation of a common life space for students and themselves (4), encouraging the students for doing research and making analysis (1), creating multi-learning settings through various activities (1) and making preparation for each lesson (1).

## Process Regarding the Use of Materials and Tools

When the question of “*Which materials and tools are available in the classroom?*” was posed to teachers, half of them (5) stated that materials required by the By-Law were available in the classroom. Still, most of the teachers (6) stated that it was possible to access to materials required by specific courses. However, teachers mentioned that in classroom; textbooks (2), TV (2), video (1), maps and

charts (1), computer (1), materials prepared by students (1), visual charts (1), camera (1) and overhead projector (2) were used as general materials and tools. Two of the interviewed teachers emphasized that all of the necessary materials were kept in the classroom due to the fact that they were teaching to 1st grades. It is clear that the parents of primary school students are very careful and willing to cooperate with the teachers in order to facilitate the process of learning to read and write. Hence, teachers are not faced with any difficulty in terms access to necessary teaching materials.

As for the question of *“Are there materials and tools that you developed personally according to the requirements of a specific lesson?”* 9 teachers said “yes” whereas only one of them said “no”. Three of the teachers who mentioned that they were developing materials by themselves stated that most of the materials they developed were in accordance with the topics addressed. Three of the teachers mentioned about making charts showing directions, one of them stated that he was developing regional maps, one teacher stated that she drew graphics indicating the weather conditions, one of the teachers emphasized developing materials in accordance with the relevant activities carried out during the lesson and one of them stated that she prepared charts while teaching traffic signs.

*“Which points do you consider while selecting materials and tools?”*

Most of the teachers (7) replied to this question stating that while selecting materials, they were concerned about the developmental level of students, use of economical materials and tools (2), use of materials and tools appropriate for the level of students (1), use of materials and tools which are of interest to all the students (1), use of materials and tools which address all students (1), appropriateness of materials and tools used with the topic under discussion (3) and the quality of materials and tools. One of the teachers also stated that she was consulting relevant experts before using a specific material.

Apart from these questions, the teachers were asked the question of *“how do you assess yourself in terms of the use of materials and tools?”* A great majority of teachers (7) stated that they felt qualified and sufficient in terms of material use, two of the teachers assessed themselves as “neither too good, nor too bad” and one of the teachers stated that she felt insufficient in terms of material use. In the

light of these explanations, it would be convenient to claim that most of the teachers are capable of using the right material in the right lesson.

As for the question regarding the *problems encountered during education and teaching process*, teachers complained about the difficulty of using materials in crowded classrooms (2), difficulties rising from the frequent change in primary education curriculum (1), that the Institution Responsible for Education Materials lost its function of cooperating with schools (2), lack of sufficient materials and tools provided to public schools (4), that the teachers are not willing to use materials and tools due to the fact that it costs more time (1), and lack of laboratories where the materials could be used (1). One teacher reported to have no problems at all. Four of the teachers stated that they were faced with economic problems in terms of finding relevant and proper material. These economic problems are: financial difficulties faced by families of the students (1), financial handicaps faced by the teachers themselves (2) and financial difficulties faced by the school itself (4). Below are the examples regarding the problems encountered by teachers during material use:

### **Evaluation of Use of Materials and Tools**

The question of “*If you are to make an assessment, how would you define your skills in terms of material use in teaching?*” was replied as “sufficient” by 4 teachers. Three of the teachers defined themselves as “insufficient” and three of them defined themselves as “neither good nor bad”.

“*How has the 2005 program change which occurred in the first level of primary education affected the use of materials and tools in education?*” More than half of the teachers (6) stated that it has had a negative effect. One teacher referred to the significance of course-tools (textbooks) requiring more material use than ever. Three teachers stated that program change has had a positive effect.

“*As of 2005, in terms of use of materials and tools, can you make a comparison between previous three years and upcoming three years of education and teaching?*” A great majority of teachers (8) stated that significant changes were expected in education and teaching and these changes would have positive effects on the use of materials

and tools. However 2 teachers mentioned that there would not be any significant change in material use. The reasons behind positive remarks were; improving economic conditions (2), improvement of financial stance (1), increase in the availability and accessibility of materials and tools (1) easy access to information (1). Teachers who stated that the use of materials and tools in teaching would not have a positive influence on education and teaching justified this opinion through claiming that; economic problems would become even more serious (1), state would fail to realize the social state principle required by the Constitution (1) teachers would have to deal with other problems rather than education (1) and the materials and tools which were introduced by the new program could not be obtained in some regions of Turkey due to development gap (1).

### Discussion

All of the teachers who were interviewed within the scope of the research stated that they were involved in various activities in the classroom in order to attract the attention of the students and ensure an effective education and teaching. Most of these activities aimed to establish a democratic setting in the classroom and to ensure use the materials and tools effectively, attachment of significance to the cooperation of schools and families, creation of a common life space, encouragement of students to do research and make analysis, creation of a multi-learning settings through various activities and making of preparations for each lesson. It is clear that teachers of first grade in primary education perform different activities in order to increase the effectiveness of education and teaching. The teacher has a very significant role in the development and change process undergone by the student. A fine teacher plans and implements all the activities to be carried out both within and outside the classroom; he/she makes evaluations and gives feedbacks; he/she is concerned about the individual differences thanks to different learning experiences of each student; he/she ensures communication through using effective communication models within the triangle of management-student-setting; increases the continuous attention and desire of students to learn new things; acts as a fine manager, teacher, a family member or a friend to students; provides a sound expertise; and possesses the knowledge on cultural

issues and pedagogical formation. Teachers are expected perceive themselves as such and prepare strategies accordingly (Sarı, 2002; Türkoğlu, 2005).

As is stated by the teachers themselves, the use of materials and tools is one of the requirements of an effective education and teaching. As expressed by Yalın (2003), tools and materials used during the learning and teaching process ensure a multi learning setting, help teachers meet the needs of students, increase the success of students, attract attention to the lesson, facilitate remembering new concepts, ensure saving of time, provide the opportunity of regular observation, concretize the abstract into the concrete, ensure coherent content, can be used repeatedly and simplify the content paving the way for easier understanding. Kulik et. al. (1980) have made a meta-analysis study which evaluates the results of experimental research on the effect of material use in student success. The studies included in the literature have been classified as computer-aided education, use of audio materials, visual education and individual-based education system. Results achieved by researchers confirm the opinion of teachers that the use of materials and tools in the lessons is a must for an effective education. As a result of the research conducted, it is clear that the classrooms are equipped with the materials and tools required by By-Law. Moreover, teachers try to make use as much as possible of the scarce resources of the schools such as computers, overhead projectors, TVs and videos. It is also evident that teachers use materials and tools developed by themselves or students. A great majority of teachers assess themselves as sufficient in terms of material and tool use.

While selecting and using the above mentioned tools and materials during teaching, teachers also prefer economic, interesting and fine quality materials and tools which are developed by students, appropriate for the development level of the students and classroom use. Teachers also try to benefit from expert opinion, preferring materials which are of interest for all students. These facts convey that teachers are very concerned and careful about material selection and use. While selecting the materials and tools; teaching goals, teaching method, profile of the students, education environment, quality and design of materials, attitudes and skills of the teachers, cost, time devoted, achievability are taken into considerati-

on. Finding alternative supporting materials or choosing the most proper material among a variety of materials depends on an educator's skills, level of success and qualifications in terms of education technology (Vural, 2004; Yalın, 2003; Yıldız et. al, 2002). In the light of these facts and taking the knowledge and skills of the teachers into account, it would be convenient to claim that teachers are very careful about selecting the proper materials and tools.

Similarly, almost all of the teachers expressed that they develop materials according to the topic under discussion. These are visual materials and tools, artifacts and models (graphics, charts, maps, charts displaying the directions, traffic signs etc) prepared in order to attract the attention of the students. Materials developed personally by teachers are mainly audio-visual materials due to the fact that they teach at the first grade of primary education. As is stated by Bacanlı (2004) and Arı (2005), fine motor skills (coordination) of primary education students are very developed therefore if the student is provided with audio visual material that he/she can touch and see during his/her learning process; he/she can create meaningful structures in his/her mind.

Moreover, while using tools and materials; teachers state that they are faced with problems such as financial difficulties, crowded classrooms, lack of time, unstable (frequently changing) education programs, lack of function of Institution Responsible for Education Materials, insufficient materials and tools, lack of necessary laboratories and equipment etc. Yıldız et al. (2002) state that teachers complain about inflexible education programs, lack of pre-service and in-service trainings offered, failure to equip the schools with necessary tools and materials, lack of functionality of the mechanisms towards encouraging the use of materials and tools etc. These problems faced by teachers in education process affect the use of materials and tools negatively and act as a handicap against the creation of multi-learning setting which takes the differences of students into account. As of 2005, there has been a change in the first level of primary education which paved the way for a system taking the student in the center. Teachers have positive opinions about the reflections of the new program in terms of material and tool use. However, some of the teachers have complained about lack of necessary educational infrastructure, economic problems, lack of ma-

terials and tools, lack of time, insufficient knowledge of teachers about the new program and stated that these disadvantages have a negative influence on the use of materials and tools. Therefore, the new education program can not be based on a sufficient infrastructure; problems of the past continue to exist. Moreover, due to the fact that teachers are not informed about the new education program effectively, the use of materials and tools in accordance with the new program is also influenced negatively.

Most of the teachers have positive expectations about the use of materials and tools in the future because nowadays it is relatively easier to access information which will facilitate the use of materials and tools. In addition to this, there are more opportunities when compared to the past and technological developments will increase the use of materials and tools. However, some of the teachers are concerned about rising financial difficulties, failure to act as a social state, teachers having to deal with problems other than education. It is also stated that teachers, schools and families will bear the fear of failure in the examinations more than ever which will result in a negative effect on material and tool use. Consequently, it would be proper to say that teachers have both negative and positive opinions. All of the interviewed teachers have mentioned that they carry out various activities in classroom setting for an effective education and teaching, care for using relevant materials and tools while creating a multi-learning setting for students and are faced with many problems in terms of material and tool use, the new program which is currently implemented requires more materials to be used, however, due to lack of necessary facilities and structure, several negative aspects have also risen. They use materials and tools developed by themselves and by the students, generally feel sufficient in terms of materials and tools use and have positive expectations from the future, however, the negative aspects influencing the use of materials and tools will also increase.

Recommendations provided following the research are as follows. Materials and tools such as videos, computers etc are very scarce in primary schools, therefore the problem of lack of materials and tools should urgently be addressed. Only then could the students be provided with the opportunity of effective learning experiences. In-service trainings given by the Ministry of National Education on

materials and tools should be revised. These trainings should be composed of courses which would improve the creative skills of teachers and develop materials and tools accordingly. Moreover, these courses should also enable teachers to make the best use of materials and tools which are required by the education and introduced by the technology. Laboratories of primary schools should be equipped with necessary devices and tools. Should insufficient and outdated materials and tools exist in these laboratories, they should instantly be replaced with the new and modern versions. Problems which emerge as a result of the new program should be addressed. Problems and lack of functionality of Institution Responsible for Education Materials should be solved.

This qualitative research constitutes the opinions and expectations of the interviewed classroom teachers. Due to the fact that the number of participants of the survey has been limited, the results will equally be limited. Studies to be conducted in the future will bear more concrete and widespread results and be based on different case studies.



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