

ANALYSIS OF HIGH SCHOOL PHYSICS TEXTBOOKS

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ABSTRACT

ANALYSIS OF HIGH SCHOOL PHYSICS TEXTBOOKS

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The purpose of this study is (1) to investigate the characteristics of ideal physics textbooks, (2) to investigate the students, teachers, textbook writers, book committee members and science education instructors' opinions whether the 9th grade physics textbooks, used in TRNC (Turkish Republic of Northern Cyprus), possess the characteristics of an ideal physics textbook, and (3) to investigate how physics textbooks should be used and how they are being used.

In this study, "Physics Textbooks Evaluation Questionnaires", which were prepared for physics teachers, 9th grade students, National Ministry of Education book committee members, science education instructors and physics textbook writers separately, were used as measuring instruments. The study was conducted with 591 students, 18 physics teachers, 4 book committee members, 3 science education instructors in Magosa and Lefkoşa cities in TRNC, and 4 physics textbook writers in 2005-2006 spring semester.

The data were analyzed by using frequency analysis. Results revealed that most of the opinions of the participants matched with the literature review in terms of ideal physics textbooks characteristics. In addition, according to most of the textbook writers and book committee members, textbooks, that were

analyzed, possessed most of the characteristics of ideal physics textbooks in the nine determined categories. However, according to most of the teachers' and students' opinions, analyzed physics textbooks possessed most of the ideal physics textbook characteristics in all categories except instructional approach category. Students' views on usage of physics textbooks indicated that most of the teachers and students' levels of using physics textbooks were almost similar. In addition, all groups of the participants stated that it is necessary to support textbooks with other sources.

Key Words: Physics Education, Physics Textbooks, Textbook Evaluation

ÖZ

LİSELERDE OKUTULAN FİZİK DERS KİTAPLARININ ANALİZİ

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Yüksek Lisans, Orta Öğretim Fen ve Matematik Alanları Eğitimi Bölümü

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Bu çalışmanın amacı; (1) fizik ders kitaplarında bulunması gereken özellikleri araştırmak, (2) KKTC'deki dokuzuncu sınıf öğrencilerine okutulan fizik ders kitaplarını bu özelliklere göre, öğrenci, öğretmen, kitap seçme komite üyesi, fen bilgisi eğitimi öğretim görevlisi ve fizik ders kitabı yazarlarının görüşlerine dayanarak analiz etmek, (3) fizik ders kitaplarının nasıl kullanılması gerektiğini ve nasıl kullanıldıklarını araştırmaktır.

Çalışmada ölçüm aracı olarak; fizik öğretmenleri, 9.sınıf öğrencileri, Milli Eğitim Bakanlığı kitap seçme komite üyeleri, fen bilgisi eğitimi öğretim görevlileri, ve fizik ders kitabı yazarları için ayrı ayrı hazırlanan “Fizik Ders Kitaplarını Değerlendirme Anketi” kullanılmıştır. Çalışma, 2005-2006 ilkbahar döneminde, KKTC’ nin Magosa ve Lefkoşa şehirlerindeki özel ve devlet okullarından araştırmaya uygunluklarına göre seçilen 591 dokuzuncu sınıf öğrencisi, 18 fizik öğretmeni, 4 kitap seçme komite üyesi, 3 fen bilgisi eğitimi öğretim görevlisi ve 4 fizik ders kitabı yazarı ile gerçekleştirilmiştir.

Elde edilen sonuçlar frekans analizi yapılarak değerlendirilmiştir. Sonuçlar, alan taramasına göre ideal bir fizik ders kitabında bulunması gereken

özelliklerin katılımcıların görüşleri ile çoğunlukla örtüştüğünü göstermiştir. Ayrıca, çoğu kitap yazarları ve kitap seçen komite üyelerinin görüşlerine göre, değerlendirilen kitapların, belirlenen dokuz kategoride, ideal özellikleri taşıdığı, çoğu öğretmen ve öğrencilere göre ise öğretim yaklaşımı kategorisinde ideal özellikleri taşımadığı saptanmıştır. Kitap kullanımı ile ilgili, öğrenci ve öğretmenlerin kitapları hemen hemen aynı amaçlı kullandıkları tespit edilmiştir. Buna ek olarak, katılımcıların görüşlerine göre ders kitaplarının farklı kaynaklarla desteklenmesi gerekir

Anahtar Kelimeler: Fizik Eğitimi, Fizik Ders Kitapları, Ders Kitabı Değerlendirmesi

To My Family

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LIST OF ABBREVIATIONS

Mis.: Missing value

ÖSS: University Entrance Examination

Par.: Partially

SPSS: Statistical Package for the Social Sciences Program

TB.: Textbook

TRNC: Turkish Republic of Northern Cyprus

YÖK: Higher Education Council

CHAPTER 1

INTRODUCTION

In recent years, it is a consensus among educators that the ultimate purpose of science education is to bring up individuals to science-literate level (National Science Teachers Association, 1998; American Association for the Advancement of Science, 1989 as cited in Köseoğlu, Budak & Tümay, 2003a). A science-literate individual understands the relationship and interactions between science and technology, nature of science, scientific concepts, principles, laws and theories. In addition, a science literate individual uses his/her knowledge where necessary. Since textbooks play an important role in improving science literacy, they should support this idea and have some properties to provide effective, significant and permanent learning (Köseoğlu et al., 2003a).

According to Kaptan (1999), individuals should assimilate nature of science and the way of obtaining scientific ideas. In 2000 a new science education program has been applied to primary schools in Turkey. This program suggests a student-centered and up-to-date view (Tebliğler dergisi: 2518). General purposes of this new program are to educate creative and productive students who can attain information themselves, share information with other people and interrogate. Textbooks play an important role in educating students according to the purposes of the new science program (Bakaç & Kesercioğlu, 2000 as cited in Kuşakçı & Büyüköztürk, 2003).

Previous studies showed that students' basic source of information in most of the classrooms is textbooks (Köseoğlu et al., 2003a; Soong & Yager, 1993; Stern & Roseman, 2004). With the development of technology, the book textbook and the opportunities of using textbooks has increased, which leads too many textbooks to appear in commercial world. Nowadays there are many both

qualified and nonqualified textbooks that are on sale. Therefore, teachers can have difficulty in choosing textbooks because it is important to understand which book is good or which one is bad, which one is beneficial for the student and serve the purpose (Pehlivan, 2003). Stern and Roseman (2004) claim that although better “curriculum materials alone are unlikely to improve student learning”, student learning can be positively and directly influenced by high quality curriculum materials.

By the academic year 2001-2002, textbook analysis course has been included in the curriculum programs of education faculties in Turkey. Leyla Küçükahmet, editor of the textbook “Konu Alanı Ders Kitabı İnceleme Kılavuzu” stated that this is an important progress in education since the candidate teachers could be able to analyze and recognize the textbooks they are going to use in their teaching experience. Therefore, candidate teachers could be able to choose the ideal textbook for their students (Güçlü, Topses, Yel, Korkmaz, Çakmak, Köksal & Albayrak, 2001).

To sum up, textbooks are more effective than other resources in student learning since they are widely using materials by students and teachers. In addition, usage of textbooks is also effective in students’ science achievement (Carter and Simpson, 1978; Chall & Conard, 1991; Chall, Conard & Harris, 1977 as cited in DiGisi & Willet, 1995). Therefore, characteristics of an ideal textbook should be determined; the textbooks should be systematically analyzed and how students and teachers use textbooks and how should textbooks be used should be investigated.

1.1 The Main Problems and Sub-Problems

1.1.1 What are the characteristics of an ideal physics textbook?

- i) What are the characteristics of an ideal physics textbook according to the previous studies?
- ii) What are the opinions of 9th grade students, physics teachers, textbook writers, science education instructors and Ministry of National Education

book committee members about the characteristics of an ideal physics textbook?

1.1.2 Do the 9th grade physics textbooks, used in TRNC; possess the characteristics of an ideal physics textbook according to the opinions of 9th grade students, physics teachers, textbook writers, science education instructors and Ministry of National Education book committee?

1.1.3 How do students and teachers use 9th grade physics textbooks in the state and private schools of Lefkoşa and Magosa in TRNC and teachers', students', textbook writers', science education instructors' and Ministry of National Education book committee members' opinions about how the physics textbooks should be used?

1.2 Definition of Important Terms

This section includes some important definitions related to the study.

Ideal physics textbook: A textbook which contains the properties under the categories content, organization, readability, instructional approach, activities, laboratory activities, indexes and glossaries and physical appearances.

Ministry of National Education book committee: It is a committee in TRNC that studies and suggests physics textbooks to the schools.

1.3 Significance of the Study

Both science education researchers and policy makers have called systematic, researched based reviews of science curriculum materials as a means for improving their quality, influencing teacher practice, and supporting science education reform in order to acknowledge their role in teaching and learning (Good, 1993, National Research Council (NRC), 1999, 2000b as cited in Kesidou & Roseman, 2002).

Curriculum materials, in particular textbooks and teacher guides have a major role in teaching and learning (Kesidou & Roseman, 2002). Recent reviews

showed that currently available curriculum materials provide little support for the achievement of the key ideas chosen (Stern & Roseman, 2004; Kesidou & Roseman, 2002). In addition, methods textbooks show a great deal of variation (Barrow, 2000). Therefore, teachers can have difficulty in choosing textbooks because it is important to understand which one is beneficial for students and serve the purpose (Pehlivan, 2003).

Özdaş (1989) stated that in physics, which is a branch of science, students generally have difficulties. Normally students have three to four hours physics lessons with their teachers in the schools. However, they spent more time with their physics textbooks. As a result, properties of physics textbooks should be taken into consideration. More studies about textbooks should be done in order to bring textbooks to higher standards.

The purposes of the study are to find the characteristics of an ideal physics textbook, to decide whether the 9th grade physics textbooks, used in TRNC, possess the characteristics of an ideal physics textbook or not, and to investigate how students and teachers use 9th grade physics textbooks in the state and private schools of Lefkoşa and Magosa in TRNC and teachers', students', textbook writers', science education instructors' and Ministry of National Education book committee members' opinions about how should the physics textbooks be used. In TRNC, no attention has been given to analyzing currently using physics textbooks. Therefore, the results of the study will have implications for Ministry of National Education and physics textbook writers. The study will be significant in order to be an example of the further textbook sources such as textbooks, book, etc. In addition to this, teachers, students and parents will use the results of the study in selecting physics textbooks. They will compare the textbooks and select the one that is appropriate for their needs. Also, from the results of the study, points of view about textbooks will be gathered and this will be important to develop ideal textbooks. Moreover, very little information exists about how teacher use textbooks to help students learn and how students use textbooks to enhance their physics achievement. Results of the

study will have implications to teachers and students in how should they use physics textbooks in order to improve students' physics achievements.

CHAPTER 2

REVIEW OF THE LITERATURE

This chapter aims to present a brief review of literature on the importance and characteristics of textbooks, textbook analysis, and usage of textbooks.

2.1 Importance and Characteristics of Textbooks

In science courses, the function of science textbooks is to transfer large amounts of information to the students (Chiappetta, Fillman & Sethna, 1991). Wellington (2001) explained a textbook's function as follow: "Textbooks attempt to transform higher level knowledge and understanding into a level, appropriate to the pupils - and the teacher" (p.73).

According to many researchers, one of the important purposes of science education is to attain person at science literate level (Gökdere & Keleş, 2004; Keleş, 2001; Kesidou & Roseman, 2002; Köseoğlu et al., 2003a). Textbooks play an important role in improving science literacy; therefore, they should support this idea and have some properties to provide effective, significant and permanent learning (Köseoğlu et al., 2003a).

Textbooks are still the primary sources of the classroom curriculum in most of the schools. (Köseoğlu et al., 2003a; Stern & Roseman, 2004). Chiappetta et al. (1991) stated that science textbooks are widely using in science courses. Despite improving science and technology, textbooks are the basic sources which transport knowledge from generation to generation (Kanlı & Yağbasan, 2004). Although there are a lot of available texts on the internet and in multimedia on platforms such as CD-ROM which can provide sound and animation, textbooks have advantages like easy to read, portable, and cause less eyestrain (Wellington, 2001). Similarly, Kabadere and Bal (2003) stated that with developing educational technologies new educational materials gain a

modern view however, textbooks are the most important and the easiest to obtain sources for people.

According to most science teachers, textbooks have an important role in science education (Wellington, 2001). Researcher stated that textbooks are important sources for teachers in their subject and pedagogic knowledge. According to Sanchez and Valcárcel (1999), many teachers need textbooks to plan the content and processes they teach in class. Science textbooks' "conceptual framework of the content" is widely using by teachers. In addition, textbooks help teachers to decide the subject and the depth they should teach (Köseoğlu et al., 2003), to organize curriculum and help students to understand scientific information (Ayca et. al, 2002; Chiapetta et. al, 1991). Moreover, science texts influence what and how students learn (Chiapetta et. al, 1991). By using textbooks, students could revise the subjects explained in lecture in which time and speed they want (Küçükahmet, 2000 as cited in Ünsal & Güneş, 2002). Şahin (2001) found that according to mathematics teachers, choosing a textbook for mathematic lessons is crucial for mathematics education. Textbooks are the basic sources of instruction for parents besides students and teachers. Harrison (2001) stated another advantage of textbooks as textbooks can substitute teachers when any teacher is not present.

Soong and Yager (1993) claimed that the textbook in use in a school is an indicator of the state of the science instruction in that school. According to Kaptan (1999), preparing textbooks that include the properties of helping and guiding students to gain the knowledge and skills in an instruction program is the basic principle of an instruction process. Textbooks should provide students different learning experiences. This could be obtained by orienting students to different activities such as observations, experiments and investigations and by giving opportunity to the students to reach some certain results themselves. Kabadere and Bal (2003) stated that achievement in science education depends on the content and the physical properties of a textbook beside the cooperation of teachers, students, and educational technology. Köseoğlu et al. (2003a) stated

that science textbooks should be prepared in such a manner that students would be given the necessary skills in application and comprehension of science.

Ministry of National Education Textbook Regulations explains the qualities of textbooks as follows: 1) A textbook should be appropriate to the program, 2) Subjects should be presented in a systematic manner, 3) Subjects should be supported by auxiliary materials and 4) Physical appearance should be sufficient. In Turkey, by the academic year 2001-2002, textbook analysis course has been included in the curriculum programs of education faculties. Leyla Küçükahmet, editor of the textbook “Konu Alanı Ders Kitabı İnceleme Kılavuzu” stated that this is an important progress in education since the candidate teachers could be able to analyze and recognize the textbooks they are going to use in their teaching experience. Therefore, candidate teachers could be able to choose the ideal textbook for their students (Güçlü, Topses, Yel, Korkmaz, Çakmak, Köksal & Albayrak, 2001)

2.2 Textbook Analysis

In order to see the changes in introductory physics texts of the last 150 years, Holbrow (1999) search some major physics textbooks. Holbrow (1999) stated that according to the researchers Adolphe Ganot’s textbook, which was written in 19th century, was accepted as one of the most successful physics texts. Although the textbook was written in French for French lycees, it was translated in English and Italian and used all over the world. As time passes, new phenomena arose and they were included in the book. However, the textbook was thick, teacher-centered and include no laboratory work, it could not be kept up to date and it lost its popularity. In 1870’s, with the effort of mainly physics teachers’ in high schools and academies, changes took place in physics education such as laboratory works in physics teaching gained importance. In 1882, the first textbook that includes student experiments was written by Gage. In the textbook there were 5 experiments each took 12 minutes. Therefore, according to Gage’s plan this set of experiments could be finished by students in an hour. Then, Edwin H. Hall’s textbook, which contained 40 detailed prepared

experiments, was published. In addition, Millikan wrote physics textbooks for high schools and colleges. He also placed well-defined experiments, great physicists and technological wonders' pictures in his book. Moreover, Franklin, Wesley, Sears, Zemansky and Halliday and Resnick wrote physics textbooks for engineers. These textbooks have similarities with Ganot's textbook in titles of major sections; however, their style was up to date, student-centered. According to Holbrow (1999), some changes take place in physics texts in 150 years such as style of presentation and experimentations. However, basic form and structure of the texts are same.

Both science education researchers and policy makers have called systematic, researched based reviews of science curriculum materials as a means for improving their quality, influencing teacher practice, and supporting science education reform in order to acknowledge their role in teaching and learning (Good, 1993, National Research Council (NRC), 1999, 2000b as cited in Kesidou & Roseman, 2002).

While reviewing literature, it was observed that some researchers developed a scale to analyze textbooks. For instance, in Turkey, Keleş (2001) developed a physics textbook evaluation scale to evaluate grade 9, grade 10 and grade 11 physics textbooks. She observed the previous textbook evaluation scales and applied interview to 15 physics teachers in order to obtain adaptation of the scale to the standards of Turkey. Results of the interviews gave the final shape to the physics textbook evaluation scale. Validity of the scale was obtained by science education experts. In addition, 60 physics teachers were asked to evaluate the physics textbooks that they were using. The textbooks were categorized as textbooks published by the Ministry of Education and private sector. The scale was a liker type that consisted of 5 degrees like perfect quality (5), good quality (4), sufficient quality (3), low quality (2), and poor quality (1). The numbers showed the marks of the degrees. The scale included 9 topics and 75 items. The topics were 1.content, 2.organization, 3.readability, 4.instructional approach, 5.pictures, 6.auxillary 7.laboratory activities 8.index and glossary, 9.physical appearance. By using Pearson formula the reliability of the scale was

found as 0,7157 for the textbooks, published by the Ministry of Education and 0,8232 for the textbooks published by private sector. In addition, whether there was a significant difference between two type of textbooks or not was obtained by using SPSS with independent t-test and no significant difference was found ($p < 0.001$). The textbooks published by Ministry of Education got average 212 marks; on the other hand, the textbooks published by private sectors got average 256 marks out of 375. The results were interpreted as the textbooks published by private sectors are better than the textbooks published by Ministry of Education. However, in both textbooks there was not any category that got perfect results. According to Keleş (2001), the physics textbooks published by Ministry of Education have deficiencies in defining science as an investigation and a research study, arising students' talents and differences in conceptual levels. On the other hand, the private textbooks have better results in that approach. Moreover, the physical appearance of the private publications is better than Ministry of Education's publications. Keleş (2001) concluded that there is no difference in laboratory activities category in both publications. In every category, the private publications got better results than Ministry of Education's publications.

In another study, Şahin (2001) investigated 9th grade students' and mathematics teachers' opinions about 9th grade mathematics textbooks' and supplementary books' contribution to learning and University Entrance Examination (ÖSS). A 60-item teachers' evaluation questionnaire and 31-item students' evaluation questionnaire were prepared by the help of the questionnaires from the literature and expert opinions. Nine high schools were randomly selected from İstanbul and the questionnaires were applied to 48 mathematics teachers and 101 students from these schools. The results were descriptively analyzed as percentages and frequencies. It was concluded that according to the teachers:

In another study, Şahin (2001) investigated 9th grade students' and mathematics teachers' opinions about 9th grade mathematics textbooks' and supplementary books' contribution to learning and ÖSS. A 60-item teachers'

evaluation questionnaire and 31-item students' evaluation questionnaire were prepared by the help of the questionnaires from the literature and expert opinions. Nine high schools were randomly selected from İstanbul and the questionnaires were applied to 48 mathematics teachers and 101 students from these schools. The results were descriptively analyzed as percentages and frequencies. Results showed that physical properties of the textbooks like page order, appropriateness of the size of letters to the students and appropriateness of the letter spacing to the students are good or very good according to most of the teachers and students. In addition, most of the teachers and students reported that simplicity and readability of the writings in the textbooks are good or very good. On the other hand, while most of the teachers stated that level of effectiveness of the comprehensibility of the text with pictures and shapes is good or very good, most of the students stated that it is not sufficient or partially good. Moreover, most of the teachers and students reported that pre-exercises are existent or less amount, the content of the textbooks is not appropriate to ÖSS, there is limited type of questions in the textbooks and textbooks include limited number of questions that help students to strengthen the subjects. Most of the students complained that the questions in the textbooks in not from simple to complex.

Şahin (2001) concluded that especially according to the 9th grade students the textbooks are insufficient and according to the mathematics teacher the textbooks do not meet teachers' needs. According to Şahin, the textbooks suggested by the National Ministry of Education should be more appropriate to ÖSS and include more and different types of examples.

Kuşakçı and Büyüköztürk (2003) investigated the appropriateness of the 8th grade science textbook to the new science curriculum. A chemistry, a physics, and three biology units of the textbook were content analyzed by using a science textbook evaluation form (shape, appearance, and language properties were excluded). It was concluded that the subjects in the textbooks enable students to relate subjects with daily life experiences, to follow and show interest to the developments in science and technology. Amount of attractive and entertaining pictures, photos, tables and shapes that help students to understand the subjects

easily and improve students' creativeness was determined as sufficient. However, experiments in the textbook were found as inadequate since they were directly explained without giving opportunity to students to think. In addition, conceptual cartoons were not included and collaborative activities were included inadequately in the textbook.

In another study, Köseoğlu, Kavak, Budak and Tümay (2003b) examined the appropriateness of the 8th grade science textbook which is prepared according to the new student-centered program, to the constructivist learning environment in instructional approach category. The category consisted in the following criteria: attracting students' interests, arousing curiosity, taking account of students' prior knowledge, relating concepts with daily life experiences, presenting alternative concepts, showing relations between concepts, and forming concepts. The textbook was qualitatively analyzed by the researchers and quantitatively analyzed by 42 science teachers. In addition, an exemplary text was prepared in order to guide textbook writers. A likert type questionnaire which consists of 18 questions was applied to the teachers and the results were analyzed by using Chi-Square technique. According to the researchers constructive learning is beyond student-centered instruction, therefore the textbook written according to the student-centered program can not be used in a constructive learning environment.

Similar to Keleş (2001), Kabadere and Bal (2003) developed a textbook evaluation scale and 6th grade science textbooks' contents published by the Ministry of Education were analyzed. The criteria in the textbook evaluation scale were decided according to the studies performed in Turkey and abroad about textbooks. In addition, expert opinion was asked about the criteria. The criteria list consists of 5 categories such as readability, guidance for teachers and students, content, appearance and presentation of the subjects. Then attitudes, of the teachers and students were examined with the help of the scale that were developed by the researcher according to the criteria. Questionnaire for teachers and students was prepared. There were 57 items in the teachers' questionnaire and 30 items in the students'. The questionnaires consisted of 5 scales such as

strongly disagree, agree to a degree, agree, fairly agree, and strongly agree. Above 3.40 was decided as positive views and written to the textbook evaluation scale. The first category “readability” consisted of 8, “Guidance for teacher and students” consisted of 12, “Appearance” consisted of 24, “Content” consisted of 12 and “Presentation of subject” consisted of 4 criteria. The textbook evaluation scale is evaluated out of 1000 marks. Every category was evaluated out of 200 marks. The categories gain marks 75% or above was decided as satisfactory. The chapter “Canlıların iç yapısına yolculuk” was content analyzed by 3 biology teachers, a Turkish teacher, a designer and 3 primary school teachers who were teaching 6th grades. The content was analyzed in two ways such as availability and efficiency of the criteria in the chapter. The criteria marked and according to the results, “readability”, “content” and “presentation of the subject” categories were satisfactory, however, other categories was unsatisfactory. In addition, total mark of the chapter was calculated as 693, 76 out of 1000 were below 75% that means the chapter is unsatisfactory.

Köseoğlu et al. (2003a) investigated 4th, 5th, 6th, 7th, and 8th grade science textbooks have been approved by the Ministry of Education, according to the criteria that should be available in a constructivist learning environment. From different regions of Turkey, 278 science teachers’ and 341 students’ opinions were asked about textbooks. Similar to Keleş (2001) the scale included 9 categories: 1.physical properties, 2.content, 3.instructional approach, 4.organization, 5.readability, 6.pictures, graphs, photographs and figures, 7.auxillaries, 8.index and glossaries and 9.labaratory activities. By using a textbooks evaluation scale, questionnaire for teachers and students was prepared. There were 85 items in the teachers’ scale and 49 items in the students’ scale. For two scales the pilot studies were performed and the reliability coefficients were found as 0.95 for teachers’ scale and 0.88 for students’ scale. Then, the scales were analyzed quantitatively to determine whether there is a significant difference between the items by using the one-way ANOVA. Therefore, strengths and deficiencies of the textbooks were determined. In addition, the textbooks were analyzed qualitatively in two ways. Firstly, at the end of the

application of the scale teachers were asked their different thoughts about the textbooks. Teachers stated some thought such as texts should be written explicitly and clearly, technical terms should be minimized, subject are not explained in an appropriate order, explanations are insufficient, daily life examples are not given , theoretical knowledge are not sufficient, evaluation questions and visual elements are insufficient, research and investigation activities are not included in the textbooks. Secondly, the researchers analyzed the textbooks qualitatively. They found that the textbooks include a lot of wrong statements and directions. Results from both qualitative and quantitative analysis showed that science textbooks do not effectively provide the purposes of the science education; in addition, the textbooks do not have the properties of a constructivist learning environment.

Aycan et al. (2002) analyzed 6th, 7th, and 8th grade science textbooks of different publications and found similar results with Köseoğlu et al. (2003a). In order to provide consensus among the concepts of science education and to be an example of the further publication sources such as book, journal etc., Aycan et al. (2002) evaluated the science textbooks according to their physical, educational, visual, comprehension and verbal characteristics. Before the evaluation of the textbooks the researchers collected some information from different primary schools about the previous science textbooks and also applied an attitude scale to the primary school teachers about the textbooks. Then, the strengths and deficiencies of the textbooks about general, physical, educational, visual, comprehension and verbal characteristics of the science textbooks were statistically evaluated by calculating the percentages of the errors in the textbooks. In addition, the different publications were compared. According to the results, the authors stated that in the all publications there are lots of wrong expressions and sentences in the textbooks. Wrong and missing knowledge was seen frequently. In addition, the shapes and pictures do not reflect the reality and there were lots of incorrect drawings. It was observed that the laboratory activities are simplified, however, they have no the constructive and imaginative

characteristics. According to the researchers the textbooks are not sufficient in determined criteria.

Ünsal and Güneş (2002) critically analyzed and gave suggestions to physics subjects of 4th grade science textbook have been approved by the Ministry of National Education. Five chapters; “Earth and Sky”, “Matter”, “Light”, “Electricity”, “Energy” were analyzed according to the categories of content, educational design, visual presentation, and language and expression. It was concluded that, the physics chapters of the textbook is not sufficient. Especially “Electricity” chapter includes a lot of mistakes. Therefore, in order not to cause student misconceptions in further level education, this chapter should be reviewed. Similarly, Ünsal and Güneş (2003) critically review physics subjects of 6th grade science textbook have been approved by the Ministry of National Education. “Motion and Force”, “Electricity” and “Light” chapters of the textbook were analyzed according to the content, educational design, visual presentation, and language and expression. In these chapters, especially in “Electricity”, there are weaknesses in content, educational design and visual presentation. Researchers pointed out that the scientific errors in the textbooks can cause student misconceptions.

Gökdere and Keleş (2004) investigated the effects of changes in science curriculum on textbook qualities and students’ and teachers’ usage of textbooks. Before and after the changes in science curriculum, 17 science teachers and 240 6th, 7th, and 8th grade students were surveyed in two years period. Teachers’ questionnaire consisted of 9 items and students’ questionnaire consisted of 7 items. Results showed that both teachers and students like new science textbooks more than the previous textbooks. According to teachers and students, experiments and language used in the new science textbooks are satisfactory. However, old science textbooks’ subject explanations were evaluated as better than the new textbooks’.

Teachers stated that for the central high school entry examinations both old and new textbooks are inadequate. However, according to the students’ opinions,

textbooks prepare or partially prepare them to the central high school entry examinations.

The Project 2061 curriculum-materials analysis procedure was developed over several years with funding from the National Science Foundation and in consultation with hundreds of K–12 teachers, materials developers, scientists, teacher educators, and cognitive researchers nationwide. The procedure's instructional analysis criteria and indicators are based on existing research on student learning (Kesidou & Roseman, 2002). In order to examine “how well middle school programs support the attainment of key scientific ideas specified in national science standards” and identify “typical strengths and weaknesses of these programs” Kesidou and Roseman (2002) presented a study that was analyzed by using the analysis procedure that was previously developed and field tested by Project 2061 of the American Association for the Advancement of Science on a variety of curriculum materials. Teams of teachers and specialists in research on teaching and learning examined 9 widely used curriculum programs. Considering relevant statements in both Benchmarks and National Science Education Standards (NSES), key ideas of three topic areas (physical, life, and earth science) were selected. For each program, the project 2061 curriculum-analysis procedure was applied. Experienced middle school classroom teachers and science education university faculty members who were knowledgeable about research on science learning and teaching formed two-member teams with one person on each team an experienced teacher and the other a science education researcher. In this study, each program was examined by two 2-member independent teams. After 7 days’ training, the reviewers analyzed student text, teacher’s guide, activities, teacher notes, assessments and other materials according to the following instructional categories: 1) Providing a sense of purpose, 2) Taking account of student ideas, 3) Engaging students with relevant phenomena, 4) Developing and using scientific ideas, 5) Promoting student thinking. Range of categories rated from poor to excellent and ratings are noted as 0-1 = poor, 1.5 = fair, 2 = satisfactory, 2.5 = very good and 3 = excellent. After analysis completed the reports of the teams were compared, the

differences between the team ratings were noted and teams were asked to establish an agreement about their ratings and/or account for differences. Kesidou and Roseman (2002) stated that the achievement of the key ideas that served as the basis of this study's analysis was not supplied by the examined middle school programs. Results showed that "the programs' content does not focus on the key ideas", "the programs' instructional design does not support the attainment of the key ideas", "the programs' support to teachers in helping students attain the key ideas is minimal". Similarly, Stern and Roseman (2004) examined nine widely used and newly developed middle-school curriculum materials to decide whether they support students learning ideas concerning matter and energy transformations in ecosystems specified in the national standards document or not by using the analysis procedure of Project 2061. The results were described in two main areas such as analysis of content alignment and analysis of instructional quality. Similar to Kesidou and Roseman (2002), Stern and Roseman (2004) stated that currently available materials are not support the achievement of the key ideas. According to the authors, key ideas were not at the focus of the instruction.

In Turkey, a similar study in the light of project-61 was performed by Kanlı and Yağbasan (2003). Grade 9, grade 10, and grade 11 secondary school physics textbooks prepared by Ministry of Education were evaluated according to the following criteria of project-61: 1) Providing a sense of purpose, 2) Taking account of student ideas, 3) Engaging students with relevant phenomena, 4) Developing and using scientific ideas, 5) Promoting student thinking about phenomena, experiences and knowledge, 6) Assessing process, and 7) Enhancing the science learning environment. First of all, the textbooks were evaluated qualitatively by the researchers according to these criteria, and then the textbooks were evaluated by 43 physics teacher from 15 different schools by using a questionnaire prepared according to these criteria. The questionnaire was a likert type questionnaire and included 22 questions. The questionnaire consisted of 5 degrees like strongly agree (5), agree (4), undecided (3), disagree (2), and strongly disagree (1). The numbers show the marks of the degrees. The alpha

coefficient of the questionnaire was found as 0.82. After the questionnaire had been applied to the teachers, the average marks of each item were calculated. Similar to Kesidou and Roseman (2002) and Stern and Roseman (2004), results showed that the textbooks are insufficient in providing a sense of purpose, taking account of student ideas, engaging students with relevant phenomena, developing and using student ideas, promoting student thinking about phenomena, experiences and knowledge, assessing student development process, and enhancing the science learning environment.

Another study about textbook evaluation was performed by Ibáñez and Ramos (2004). According to the researchers, the most standardized instructional material in university science courses are textbooks. Considering the influence of textbooks in the learning process and the difficulties in the learning process of the energy concepts in hydrodynamics, the researchers analyzed the content of this chapter of ten university physics textbooks. The text, illustrations and examples proposed were scanned by using a 16-item questionnaire, ten of the items concerned diversity and depth of topics presented on the basis of the conceptual area and six of the items concerned applications and patterns used by writers to present information. The questionnaire was filled independently by three physics colleagues with many years of experience in the area of fluid mechanics, as well as the authors of this study themselves, for all the textbooks selected, in the form of checklist. The checklist was applied to a textbook developed for the final year of Spanish secondary school in order to collect validity evidence. Except two items, the selected textbook gave affirmative answers to the items of the questionnaire. As a result of the review, Ibáñez and Ramos (2004) found some deficiencies in the use of energy concepts related to fluid dynamics. Sixteen items of the questionnaire were not answered affirmatively, therefore, remarkable differences were found among the analyzed texts. The conceptual difficulties of the textbooks cannot be argued to justify these results because some secondary school textbooks obtain better results with the same questionnaire. As a result, a revision of hydrodynamics in university physics textbooks is seems worth from the checklist outcomes (Ibáñez & Ramos,

2004). In addition, Jeffery and Roach (1994) analyzed the content of elementary and middle school texts for protoconcepts in both life science and earth science. Five textbook series were selected according to the series spanned between grade 1 and grade 8 for content analysis. In this study, patterns and key ideas were identified by scanning tables of content, glossaries, indices and the text. The language was standardized and a list of fifteen concepts, eight life science concepts and seven earth science concepts were generated. The texts were evaluated with respect to this list. Since middle school earth science texts included more comprehensive information on the evolutionary protoconcepts, they were scanned separately from the elementary texts. Therefore, the earth science texts were also evaluated separately with additional seventeen protoconcepts. In addition, the middle school life science textbooks were analyzed according to fifteen misconception concepts. Fourteen of these concepts were collected from the literature review and the fifteenth were added by the authors. According to Jeffery and Roach (1994) there is evidence that textbooks help students develop the basic understanding of the concept of evolution as they move up to secondary schools. There is also evidence that although they help to develop the concept, their discussions are centered on the evidence in their context only. Textbooks are not reflect what is actually taught, they just the primary source of information for the teachers. The concepts that are crucial to helping students gain understanding should be considered by the teachers and administrators when they select texts and plan activities (Jeffery & Roach, 1994). Similar to Jeffery and Roach (1994), Barrow (2000) searched the validated key words in the contents and indexes of elementary science method books. In this study eleven textbooks were analyzed with the key words such as magnetism, magnet, poles, electromagnets, etc. Organization, sequence of concepts, potential misconceptions and types of investigations were examined. At the end of the analysis, eleven science methods textbooks showed a great difference in the magnet concepts. Barrow (2000) stated that elementary teachers should be aware of these different method textbooks' approach when they select their textbooks.

Chavkin (1997) determined readability levels of Texas's state-adopted science textbooks (physical science/grade 9, biology/grades 10, 11, chemistry/grades 11, 12, physics/grade 11, 12) by using Fry Readability Graph and the Flesch Reading Ease Formula. 21 passages from the 7 physical science textbooks, 24 passages from the 8 biology textbooks, 15 passages from the 5 physics textbooks were evaluated. At the end of the evaluations, it was concluded that reading levels of physical science textbooks match 86 percent or more, biology textbooks match 50 percent or more, physics textbooks match 100 percent and chemistry textbooks match 20 percent with intended grade level.

From an international study of students' math and science achievement it was brought to light by the National Center for Education Statistics that between fourth and eighth grades, students in the United States learn math and science less than some other nations. According to the scientists and many school administrators the major reason of this result is textbooks. George Nelson, director of Project 2061, stated that no satisfactory middle school science books or high school biology books have been reviewed yet (Raloff, 2001). According to Nelson, deficiencies in the books not only cause low performance but also weak student interest in science.

John L. Hubisz, who is a physicist and his colleagues, reviewed line by line 12 widely used physical science textbooks of sixth to eighth grades according to the validity of the information in the textbooks. From the reviews a 500-page-long list of errors, misconceptions, and confusing presentations was recorded. Different from Hubisz, Nelson's Project 2061 reviewed 10 middle school science textbooks by "taking a deep look at the philosophy inside each book, asking how it attempts to teach ideas". Nelson concluded that "even if the science had been 100 percent accurate, students still would not learn from these books, because the instruction was inadequate". Clifford Swarts, a high-energy physicist at the State University of New York, Stony Brook, with his 14 colleagues analyzed 7 high school physics texts. It was concluded that these books got better results than middle school science texts with only one major mistake.

Berg and Treagust (1993) investigated 14 chemistry textbooks' and 104 secondary science teachers' presentation of the gas laws. The textbooks were analyzed by the authors and teachers were completed a questionnaire. It was found that in the textbooks, qualitative description of the gas properties is in minimum level and simple to complex presentation is moderately used. In addition, differences were found between teachers' and textbooks' presentations. The results showed that teachers rely on textbooks' basic content and exercises however; they are distrustful in gas law sequence presented in the textbooks.

Since there are a lot of photographs in science textbooks which are the most important resources in students' learning of science, science educators should pay attention to photographs. It was stated that photographs need to be developed in order to be fully meaning-making resources. Effectiveness of a written material depends on its readability, content and design (Yalın, 1999 as cited in Ünsal & Güneş, 2002). Textbooks written in daily language, included colorful pictures, short sentences and paragraphs attract students (Küçükahmet, 2000 as cited in Ünsal & Güneş, 2002). According to Ardenghi and Roth (2004), developing a literacy concerning photographs is as necessary as developing subject matter literacy for high school students to completely understand their textbooks. Pictures have an important role on students' retention of associated text (Peeck, 1993 as cited in Ardenghi & Roth, 2004).

2.3 Usage of Textbooks

In researches on textbooks, generally, quality, content, format, appropriateness for students in terms of level of vocabulary, ethnic and gender biases have been studied. However, what the students learn from textbooks rather than what the books say is more important (Moulton, 1994). According to Moulton (1994), "how teachers use textbooks and how their use aids student learning" must be investigated. Therefore, the researcher reviewed the literature on textbook availability and use in developing countries and in the United States. It was concluded that, presence of textbooks is not enough to increase student

learning, effective using of textbooks is necessary to improve student learning (Moulton, 1994).

According to Wellington (2001), textbooks have been used in the following ways during their existence:

- “- guiding/controlling practical work;*
- as a ‘lesson filler’;*
- to provide professionally drawn diagrams;*
- as a source of illustrations, e.g. color photographs;*
- to initiate a topic and generate interest in it;*
- for providing questions/exercises either for class-work or homework;*
- as a revision guide or a reference book;*
- for students’ independent self-study, e.g. ‘Make notes on...’*
- as a general resource for ‘homework’s’;*
- as a support for the teacher, e.g. in lesson planning, checking key facts;*
- as a way of keeping a class quiet;*
- as a means of occupying a disruptive pupil;*
- in covering for an absent colleague;*
- for propping up apparatus, e.g. a wooden ramp.” (p.72)*

Wellington (2001) indicated that teachers’ ways of using textbooks are related with both teaching and learning and class management. Different studies showed that teachers in the United States ‘over use’ textbooks, however, teachers in developing countries (Botswana, Ghana, Chile) ‘under use’ textbooks in their instructions (Moulton, 1994).

In her study, Şahin (2001) found that 72.9% or more teachers use textbooks during their lesson and while preparing for lesson. It was concluded that majority of teachers use textbooks. However, 54.2% teachers stated that they are using the textbooks that are not suggested by the Ministry of National Education more than the suggested textbooks. Therefore, according to Şahin (2001), the mathematics textbooks using in the high schools does not meet the needs of the teachers.

Gökdere and Keleş (2004) investigate the effects of changes in science curriculum on textbook qualities and students' and teachers' usage of textbooks. As a result of the surveys before and after the changes in science curriculum, it was concluded that changes in curriculum positively affect teachers' and students' levels of textbook use. According to the research, teachers use textbooks more, especially at the beginning of the units and while solving evaluation questions. In addition, experienced teachers use textbooks less. According to Gökdere and Keleş (2001), teachers consider textbooks as instruments that present curriculum program and use textbooks to follow the curriculum program. Moreover, teachers avoid leaning on a unique source. According to the teachers, students use textbooks when teachers direct them. However, students stated that they are using textbooks while they are doing homework, preparing for lesson, studying for examinations, and reviewing studied subjects.

DiGisi and Willett (1995) investigated high school biology teachers' instructional use of reading and textbooks. According to science teachers, reading is an important activity as hands on/inquiry-based activities in science learning however they are uncertain about how to incorporate active reading comprehension instruction into science curriculum. In addition the study showed that in lower academic level classes, students are assigned more reading activities but expected to learn the content in class. However, in higher academic level classes, students are expected to learn both from their reading and in classroom instruction.

Textbooks are complementary instructional materials of education. With the help of textbooks, teachers present their subject in a systematic way; however Ünsal and Güneş (2002) stated that they should avoid themselves to be dependent to the textbook during the lesson.

2.4 Summary of the Literature Review

Previous studies revealed that researchers evaluated different textbooks in different categories such as physical properties, content, instructional approach,

organization, readability, pictures, graphs, photographs and figures, auxiliary materials, index and glossaries, and laboratory activities. Different methods were used by researchers in order to analyze textbooks themselves or have textbooks been analyzed by teachers, students or teams of specialists. Scales, questionnaires, key words, some formulas were used to analyze textbooks according to specific criteria.

According to the performed studies there are some deficiencies in textbooks. For instance, the physics textbooks published by Ministry of Education have deficiencies in defining science as an investigation and a research study, arising students' talents and differences in conceptual levels (Keleş, 2001), science textbooks do not effectively provide the purposes of the science education; in addition the textbooks do not have the properties of a constructivist learning environment (Köseoğlu et al., 2003a), the textbooks are insufficient in providing a sense of purpose, taking account of student ideas, engaging students with relevant phenomena, developing and using student ideas, promoting student thinking about phenomena, experiences and knowledge, assessing student development process, and enhancing the science learning environment (Kanlı & Yağbasan, 2003; Kesidou & Roseman, 2002; Stern & Roseman, 2004), there are wrong and missing knowledge in the textbooks, shapes and pictures do not reflect the reality, there were lots of incorrect drawings, the laboratory activities are simplified, however, they have no the constructive and imaginative characteristics (Aycan et al., 2002) and etc.

Although textbooks have many deficiencies, they are using widely by teachers and students (Chiapetta et al., 1991). It was stated that teachers' ways of using textbooks are related with both teaching and learning and class management (Wellington, 2000). Students are using textbooks while they are doing homework, preparing for lesson, studying for examinations, and reviewing studied subjects (Gökdere & Keleş, 2001). According to Ünsal and Güneş (2002) textbooks are complementary instructional materials of education and with the

help of textbooks, teachers present their subject in a systematic way; however depending on a textbook during a lesson is defective.

To sum up, after the new science education program to be in forced in 2000, a lot of educational materials were produced in Turkey to fulfill the general purposes of the new program. Therefore, in order to examine the appropriateness of the textbooks, many researchers attempt to analyze textbooks systematically in Turkey. However, in TRNC, little attention has been given in textbook evaluations. In addition, very little information exists about how teacher use textbooks to help students learn and how students use textbooks to enhance their physics achievement. Moreover, review of the literature indicated that textbook evaluations were generally performed by researchers, teachers and students. For these reasons, the purposes of the study are to find the characteristics of an ideal physics textbook, to decide whether the 9th grade physics textbooks, used in TRNC, possess the characteristics of an ideal physics textbook or not, and to investigate how students and teachers use 9th grade physics textbooks in the state and private schools of Lefkoşa and Magosa in TRNC and teachers', students', textbook writers', science education instructors' and Ministry of National Education book committee members' opinions about how should the physics textbooks be used.

The review of the literature indicates that there is a need for systematic researches on textbooks and studies on textbook use since textbooks are widely using materials in instructions.

CHAPTER 3

METHOD

In this chapter, population and sampling, development of the instruments, procedures, and analysis of data, assumptions and limitations are presented.

3.1 Population and Sample

In this study, all 9th grade students in ÖSS groups (approximately 957 students), all physics teachers (approximately 35 physics teachers), all members of Ministry of National Education book committee (5 members), and all science education instructors (approximately 6 instructors) in TRNC, and all physics textbook writers in Turkey were identified as the target population. In this population, the students are approximately 15 years old and approximately 56% of the students is females, and 44% is males.

In this study, 802 ninth grade students who are in the ÖSS groups which is approximately 84% of the target population and 27 physics teachers both in private and public schools in Lefkoşa and Magosa which is approximately 77% of the target population, 5 members of the Ministry of National Education book committee which is 100% of the target population, 4 science education instructors which is 67% of the target population and 11 writers of the selected physics textbooks were determined as accessible population.

Due to some unexpected reasons 591 ninth grade students which is approximately 74% of the accessible population, 18 physics teachers which is approximately 67% of the accessible population, 4 members of the Ministry of National Education book committee which is 80% of the accessible population, 3 science education instructors which is 75% of the accessible population and 4 physics textbook writers which is approximately 37% of the accessible

population were selected as samples. Due to ethical principles, names of the participants were not given in the study. In the study, instead of physics education instructors science education instructors were selected as participants, because in TRNC, universities do not have physics education departments. In Table 3.1, participants' years of experience were presented.

Table 3.1 Experience Years of the Participants

Experience Years	Teachers f (%)	Textbook Writers f (%)	Book Committee Members f(%)	Instructors f (%)
0-5	5 (27.8)	2 (50)	4 (100)	1 (33.3)
6-10	2 (11.1)	2 (50)	-	-
11-15	5 (27.8)	-	-	1 (33.3)
16-20	4 (22.2)	-	-	1 (33.3)
21 and more	2 (11.1)	-	-	-

Table 3.2 presents number of selected public schools, private schools and number of selected students in Magosa and Lefkoşa. Names of the selected high schools are Namık Kemal Lisesi, Lefkoşa Türk Lisesi, Bülent Ecevit Anadolu Lisesi, Polatpaşa Lisesi, Gazi Magosa Türk Maarif Koleji, Lefkoşa Türk Maarif Koleji, Levent Koleji, Yakın Doğu Koleji and 20 Temmuz Fen Lisesi.

Table 3.2 Total Numbers of High Schools, Total Number of Students, Numbers of Selected Public Schools, Number of Selected Private Schools and Number of Selected Students throughout the Districts

District	Total Number of High Schools	Number of Selected Public Schools	Number of Selected Private Schools	Total Number of Students	Number of Selected Students
Lefkoşa	7	4	2	622	363
Magosa	4	3	0	335	228
Total	11	7	2	957	591

Method of convenient sampling was used in order to obtain representative samples of the population. The selected cities, Magosa and Lefkoşa, were determined by the convenience sampling method.

In the study, four textbooks were analyzed by the participants. Information about the textbooks were presented in Table 3.3.

Table 3.3 Textbooks Analyzed by the Participants

Textbook Name	Writer	Publication
Fizik Lise 1	N. Bilgin	Yöntem
Fizik 1	R. Polat, A. Arık	Oran
Lise 1 Fizik	A. Boz, S. Berber	Fdd
Fizik 1	C. Kalyoncu, Y. Çakmak, H. Öksüzoğlu, M. Ceren, K. İmamoğlu, A. Kır	MEB

In order to provide research ethics textbooks were named randomly as Textbook 1 (TB. 1), Textbook 2 (TB. 2), Textbook 3 (TB. 3), and Textbook 4 (TB. 4). In Table 3.4, the analyzed physics textbooks and the number of students and teachers that analyzed the textbooks were presented.

Table 3.4 Number of Participants for each Textbook

Textbook	Number of Students	Number of Teachers
TB. 1	169	9
TB. 2	357	4
TB. 3	49	4
TB. 4	16	1
Total	591	18

3.2 Measuring Tools

The purposes of the study are to find the characteristics of an ideal physics textbook, to decide whether the 9th grade physics textbooks, used in TRNC, possess the characteristics of an ideal physics textbook or not, and to investigate how students and teachers use 9th grade physics textbooks in the public and private schools of Lefkoşa and Magosa in TRNC, and teachers', students', textbook writers', science education instructors' and Ministry of National Education book committee members' opinions about how the physics textbooks should be used. Therefore, questionnaires for all groups of the participants were prepared.

The questionnaires used in this study were prepared by using the instruments from previous studies (Gökdere & Keleş, 2004; Kanlı & Yağbasan, 2004; Keleş, 2001; Şahin, 2001). The questionnaires included totally 91 ideal physics textbook characteristics in 9 categories. These categories were content,

organization, instructional approach, readability, visual materials, indexes and glossaries, activities, laboratory activities, and visual materials. Scientific literacy category was not included in the questionnaires. Scientific literacy is skill-based and it could not be applied due to ÖSS. Therefore, students and teachers are not acquainted with this category and could have problems in comprehension.

3.2.1 Students' Physics Textbook Evaluation Questionnaire

This questionnaire applied to the 9th grade students includes two parts. In the first part of the questionnaire there are fifteen items. Thirteen of the items are selection-type and two of the items is supply-type. In addition, some questions (4, 5, 6, 7, 8, 9, 11, and 12) allow students to write their additional opinions. In the second part of the questionnaire there are eighteen selection-type items (see Appendix A).

3.2.2 Teachers' Physics Textbook Evaluation Questionnaire

This questionnaire applied to the physics teachers includes two parts. In the first part of the questionnaire there are sixteen items. Fourteen of the items are selection-type and two of the items is supply-type. In addition, some questions (4, 5, 6, 7, 8, 9, 11, and 12) allow teachers to write their additional opinions. In the second part of the questionnaire there are twenty selection-type items (see Appendix B).

3.2.3 Book Committee Members' Textbook Evaluation Questionnaire

This questionnaire applied to the book committee members includes two parts. In the first part of the questionnaire there are six selection-type items. In addition, some questions (4, 5, and 6) allow the members to write their additional opinions. In the second part of the questionnaire there are twenty selection-type items (see Appendix C).

3.2.4 Writers' Physics Textbook Evaluation Questionnaire

This questionnaire applied to the physics textbook writers includes two parts. In the first part of the questionnaire there are six selection-type items. In addition, some questions (4, 5, and 6) allow physics textbook writers to write their additional opinions. In the second part of the questionnaire there are twenty selection-type items (see Appendix D).

3.2.5 Science Education Instructors' Physics Textbooks Evaluation Questionnaire

This questionnaire applied to the science education instructors includes sixteen selection type items. Some questions (4, 5, 6, 7, 8, 9, 11, 12, 13, 14, 15 and 16) allow instructors to write their additional opinions (see Appendix E).

3.2.6 Reliability and Validity of the Questionnaires

In order to collect face and content validity evidence for the questionnaires, an assistant professor's and an expert physics teacher's opinions were asked, and table of test specification was prepared.

In the questionnaires, opinions of the participants on characteristics of ideal physics textbooks and students and teachers' usage of physics textbooks were asked. Therefore, reliability of the questionnaires could not be measured due to this characteristic of the questionnaires.

3.3 Procedure

The design of the study was cross-sectional survey. Cross-sectional survey research aims to gather opinions of large groups about a specific topic one time only (Fraenkel & Wallen, 1996). Since the purposes of the study are to investigate the characteristics of an ideal physics textbook, the participants' opinions whether the 9th grade physics textbooks, used in TRNC, possess the characteristics of an ideal physics textbook, and to investigate how students and teachers use 9th grade physics textbooks in the public and private schools of Lefkoşa and Magosa in TRNC, and teachers', students', textbook writers',

science education instructors' and Ministry of National Education book committee members' opinions about how the physics textbooks should be used, survey is appropriate design for this study.

This research study began with the literature review. The keywords used in searching were textbooks, textbook evaluation, physics and science education. Some combination of these words was used while making literature review. In the study some of the databases have been searched. These databases are ERIC, Ebscohost Science Direct, and Wiley Interscience. Previous studies in Turkey have also been searched like Higher Education Council (YÖK) (database, master and doctoral thesis), Gazi Eğitim Dergisi, and National Conferences.

While preparing the questionnaires the most appropriate instruments from the literature were selected and five physics textbook evaluation questionnaires were formed. The final content and format of the questionnaires were obtained after long processes with the help of the experts. In order to revise the questions that are not clear and understandable, the pilot study was done with a student and a teacher. One question from the students' questionnaire and one question from the teachers' questionnaire were revised. After completing the instruments, permission was asked from the Ministry of National Education in order to apply the questionnaires to the students, teachers and book committee members. As soon as the permission was granted for the study the questionnaires were applied.

Application of the questionnaires to the teachers, students and book committee members took a month. In most of the schools the application of the questionnaires to the students was conducted by the researcher but due to some unexpected situations in some of the schools the application of the questionnaires to the students was conducted by the school teachers. In this study, the questionnaire was applied to the physics textbook writers over the telephone by the researcher.

The data obtained from the study were entered in the statistical package for the social sciences program (SPSS) by coding the variables. In the study, female students were coded as 0, male students were coded as 1, private schools

were coded as 0, public schools were coded as 1, selected items were coded as 1 and items that were not selected were coded as 0, answers “yes” were coded as 2, answers “partially” were coded as 1 and answers “no” were coded as 0.

3.4 Analysis of Data

The data obtained from the study were analyzed descriptively by using SPSS.

3.4.1 Descriptive Statistics

In the study, descriptive statistics was used in order to describe the data and summarize the responses in the questionnaires to get idea about the population. Frequencies and percentages are used to descriptively analyze the data.

3.5 Assumptions and Limitations

The assumptions and limitations considered by the researcher are given below.

3.5.1 Assumptions

1. The administrations of the physics textbook evaluation questionnaire were under standard conditions.
2. The participants of the study responded to the items of the physics textbook evaluation questionnaires sincerely.

3.5.2 Limitation

The study analyzes only the physics textbooks available for the 9th grade students in Magosa and Lefkoşa.

CHAPTER 4

RESULTS

In this chapter, descriptive statistics of the data and summary of the findings are presented.

4.1 Descriptive Statistics

The following tables represent opinions of the participants about what characteristics of an ideal physics textbook should be taken into account when selecting/writing physics textbooks, and if the analyzed textbooks possess the characteristics of an ideal physics textbook (see Table 4.1.1-4.10.5). The participants are as follows: Students (591), teachers (18), textbook writers (4), book committee members (4) and science education instructors (3). In addition, numbers of students and teachers who analyzed different textbooks are presented in Table 3.2. As Table 4.1.1 shows, all groups of the participants agreed that the content should be taken into account when selecting/writing physics textbooks. In addition the participants stated that they were taking into account content when selecting/writing physics textbooks.

Except from most of the students, all groups of the participants believe that organization should be taken into account when selecting/writing physics textbooks. All groups of the participants stated that they were taking into account organization when selecting/writing physics textbooks (see Table 4.1.2).

Table 4.1.1 Opinions of the participants about the content of the textbooks

Subjects	Content should be taken into account			Content is taken into account			
	Yes	No	Mis.	Yes	Par.	No	Mis.
	%	%	%	%	%	%	%
Students	60.4	39.6	0	-	-	-	-
Teachers	88.9	5.6	5.6	94.1	0	5.6	0
Textbook Writers	100	0	0	100	0	0	0
Book Committee	75	25	0	100	0	0	0
Instructors	100	0	0	-	-	-	-

Table 4.1.2 Opinions of the participants about the organization of the physics textbooks

Subjects	Organization should be taken into account			Organization is taken into account			
	Yes	No	Mis.	Yes	Par.	No	Mis.
	%	%	%	%	%	%	%
Students	21.5	78.5	0	-	-	-	-
Teachers	94.4	5.6	0	72.2	16.7	5.6	5.6
Textbook Writers	100	0	0	100	0	0	0
Book Committee	75	25	0	75	25	0	0
Instructors	100	0	0	-	-	-	-

Although most of the students believe that readability should not be taken into account, other groups of participants stated that it should be and they were considering readability selecting/writing physics textbooks (see Table 4.1.3).

Table 4.1.3 Opinions of the participants about the readability of the textbooks

Subjects	Readability should be taken into account			Readability is taken into account			
	Yes	No	Mis.	Yes	Par.	No	Mis.
	%	%	%	%	%	%	%
Students	43	57	0	-	-	-	-
Teachers	94.9	0	5.1	88.9	0	5.6	5.6
Textbook Writers	100	0	0	100	0	0	0
Book Committee	100	0	0	100	0	0	0
Instructors	100	0	0	-	-	-	-

All the participants stated that their willingness to take into account instructional approach has the same proportion with their actions in selecting/writing physics textbooks (see Table 4.1.4).

Table 4.1.4 Opinions of the participants about the instructional approach of the physics textbooks

Subjects	Instructional approach should be taken into account			Instructional approach is taken into account			
	Yes	No	Mis.	Yes	Par.	No	Mis.
	%	%	%	%	%	%	%
Students	41.1	58.9	0	-	-	-	-
Teachers	100	0	0	83.3	11.1	5.6	0
Textbook Writers	100	0	0	75	25	0	0
Book Committee	100	0	0	100	0	0	0
Instructors	100	0	0	-	-	-	-

According to most of the students and 1 out of 4 teachers and a book committee member, visual materials are not very important to be taken into account in selecting/writing physics textbooks. However, most of the participants stated that they are considering visual materials in selecting/writing physics textbooks (see Table 4.1.5).

Table 4.1.5 Opinions of the participants about the visual materials used in the physics textbooks

Subjects	Visual materials should be taken into account			Visual materials are taken into account			
	Yes	No	Mis.	Yes	Par.	No	Mis.
	%	%	%	%	%	%	%
Students	38.9	61.1	0	-	-	-	-
Teachers	66.7	27.8	5.6	38.9	38.9	5.6	16.8
Textbook Writers	100	0	0	100	0	0	0
Book Committee	75	25	0	50	50	0	0
Instructors	100	0	0	-	-	-	-

Level of willingness to take into account activities has approximately the same rate with the actions of most of the teachers, textbook writers and book committee members in selecting/writing physics textbooks (see Table 4.1.6).

Although all of the instructors stated that laboratory activities should be taken into account, most of the students, 1 out of 3 teachers, a book committee member and a textbook writer stated the opposite. However, all groups of the participants mentioned that they are taking into account laboratory activities in selecting/writing physics textbooks (see Table 4.1.7).

Table 4.1.6 Opinions of the participants about the activities used in the physics textbooks

Subjects	Activities should be taken into account			Activities are taken into account			
	Yes	No	Mis.	Yes	Par.	No	Mis.
	%	%	%	%	%	%	%
Students	35	65	0	-	-	-	-
Teachers	66.7	33.3	0	38.9	22.2	38.9	0
Textbook Writers	100	0	0	100	0	0	0
Book Committee	75	25	0	50	50	0	0
Instructors	100	0	0	-	-	-	-

Table 4.1.7 Opinions of the participants about the laboratory activities in the physics textbooks

Subjects	Laboratory activities should be taken into account			Laboratory activities are taken into account			
	Yes	No	Mis.	Yes	Par.	No	Mis.
	%	%	%	%	%	%	%
Students	34.9	65.1	0	-	-	-	-
Teachers	61.1	33.3	5.6	44.4	38.9	11.1	5.6
Textbook Writers	75	25	0	75	25	0	0
Book Committee	75	25	0	75	0	25	0
Instructors	100	0	0	-	-	-	-

According to most of the participants except instructors, indexes and glossaries are not very important to be taken into account. However, textbook

writers and book committee members stated that they are taking into account indexes and glossaries in selecting/writing physics textbooks (see Table 4.1.8).

According to most of the students, physical appearance should not be taken into account in selecting physics textbooks. In addition, most of the participants' willingness to take into account the physical appearance of a physics textbook has the same proportion with their action in terms of putting in into practice (see Table 4.1.9).

Table 4.1.8 Opinions of the participants about the indexes and glossaries in the physics textbooks

Subjects	Indexes and glossaries should be taken into account			Indexes and glossaries are taken into account			
	Yes	No	Mis.	Yes	Par.	No	Mis.
	%	%	%	%	%	%	%
Students	21	79	0	-	-	-	-
Teachers	55.6	38.9	5.6	27.8	22.2	44.4	5.6
Textbook Writers	50	50	0	75	25	0	0
Book Committee	50	50	0	25	50	25	0
Instructors	100	0	0	-	-	-	-

Table 4.1.9 Opinions of the participants about the physical appearance of the physics textbooks

Subjects	Physical appearance should be taken into account			Physical appearance are taken into account			
	Yes	No	Mis.	Yes	Par.	No	Mis.
	%	%	%	%	%	%	%
Students	28.1	71.9	0	-	-	-	-
Teachers	88.9	11.1	0	66.7	11.1	16.7	5.6
Textbook Writers	100	0	0	100	0	0	0
Book Committee	50	50	0	25	25	50	0
Instructors	100	0	0	-	-	-	-

All groups of the participants stated that content of ideal physics textbooks should be up to date. In addition, although it changes from textbook to textbook, all groups of the participants stated that contents of the analyzed physics textbooks were up to date (see Table 4.2.1).

As reported in Table 4.2.2, the content of physics textbook should not include any mistakes in terms of science, and the participant stated that the analyzed physics textbooks do not include any mistakes in terms of science.

Table 4.2.1 Opinions of the participants about whether content is up to date

Subjects	Content should be up to date			Content is up to date			
	Yes	No	Mis.	Yes	Par.	No	Mis.
	%	%	%	%	%	%	%
All students	90.5	7.3	2.2	31.3	49.9	13.2	5.6
Students (TB. 1)	-	-	-	19.5	66.3	13	1.2
Students (TB. 2)	-	-	-	32.8	44.5	15.1	7.6
Students (TB. 3)	-	-	-	38.8	49	4.1	8.2
Students (TB. 4)	-	-	-	100	0	0	0
Teachers	94.4	5.6	0	61.1	33.3	5.6	0
Teachers (TB. 1)	-	-	-	44.4	55.6	0	0
Teachers (TB. 2)	-	-	-	50	25	25	0
Teachers (TB. 3)	-	-	-	100	0	0	0
Teachers (TB. 4)	-	-	-	100	0	0	0
Textbook Writers	100	0	0	100	0	0	0
Book Committee	75	25	0	50	0	0	50
Instructors	100	0	0	-	-	-	-

Table 4.2.2 Opinions of the participants about mistakes in content of physics textbooks

Subjects	The content of physics textbook should not include any mistakes in terms of science			The content of physics textbook does not include any mistakes in terms of science			
	Yes	No	Mis.	Yes	Par.	No	Mis.
	%	%	%	%	%	%	%
All students	92.6	5.4	2	36.5	41.5	16.2	5.8
Students (TB. 1)	-	-	-	27.2	52.7	18.9	1.2
Students (TB. 2)	-	-	-	40.1	37	16.2	6.7
Students (TB. 3)	-	-	-	34.7	44.9	12.2	8.2
Students (TB. 4)	-	-	-	62.5	12.5	0	25
Teachers	100	0	0	44.4	44.4	11.1	0
Teachers (TB. 1)	-	-	-	22.2	55.6	22.2	0
Teachers (TB. 2)	-	-	-	25	75	0	0
Teachers (TB. 3)	-	-	-	100	0	0	0
Teachers (TB. 4)	-	-	-	100	0	0	0
Textbook Writers	100	0	0	100	0	0	0
Book Committee	100	0	0	25	50	0	25
Instructors	100	0	0	-	-	-	-

All groups of the participants thought that content should include development of concepts and principles. According to all the participant groups' opinions, analyzed physics textbooks' contents include development of concepts and principles (see Table 4.2.3).

Table 4.2.3 Opinions of the participants about development of concepts and principles in content of physics textbooks

Subjects	Content should include development of concepts and principles			Content includes development of concepts and principles			
	Yes	No	Mis.	Yes	Par.	No	Mis.
	%	%	%	%	%	%	%
All students	73.4	21.5	5.1	41.1	33.7	15.6	9.6
Students (TB. 1)	-	-	-	34.3	42.6	17.8	5.4
Students (TB. 2)	-	-	-	44.3	30.3	15.4	10.1
Students (TB. 3)	-	-	-	30.6	38.8	14.3	16.3
Students (TB. 4)	-	-	-	75	0	0	25
Teachers	94.4	5.6	0	44.6	55.6	0	0
Teachers (TB. 1)	-	-	-	33.3	66.7	0	0
Teachers (TB. 2)	-	-	-	0	100	0	0
Teachers (TB. 3)	-	-	-	100	0	0	0
Teachers (TB. 4)	-	-	-	100	0	0	0
Textbook Writers	100	0	0	100	0	0	0
Book Committee	75	25	0	25	50	0	25
Instructors	100	0	0	-	-	-	-

One out of 3 students and a book committee member stated that content should not emphasize the effects of science, society, and technology on each other. However, most of the participants thought that contents of the analyzed physics textbooks should emphasize and emphasized the effects of science, society and technology on each other. On the other hand, the teacher, who analyzed TB. 4 stated that the textbook does not emphasize the effects of science, society, and technology on each other (see Table 4.2.4).

Table 4.2.4 Opinions of the participants about whether content emphasize the effects of science, society, and technology to each other

Subjects	Content should emphasize the effects of science, society, and technology on each other			Content emphasizes the effects of science, society, and technology on each other			
	Yes %	No %	Mis. %	Yes %	Par. %	No %	Mis. %
All students	64.8	31.6	3.6	23.9	38.4	32.1	5.6
Students (TB. 1)	-	-	-	22.5	40.2	36.7	0.6
Students (TB. 2)	-	-	-	24.9	33.9	34.2	7
Students (TB. 3)	-	-	-	22.4	55.1	12.2	10.2
Students (TB. 4)	-	-	-	18.8	68.8	0	12.5
Teachers	88.9	11.1	0	27.8	61.1	11.1	0
Teachers (TB. 1)	-	-	-	11.1	88.9	0	0
Teachers (TB. 2)	-	-	-	0	75	25	0
Teachers (TB. 3)	-	-	-	100	0	0	0
Teachers (TB. 4)	-	-	-	0	0	100	0
Textbook Writers	100	0	0	100	0	0	0
Book Committee	75	25	0	0	75	0	25
Instructors	100	0	0	-	-	-	-

Most of the participants stated that contents of physics textbooks should be appropriate to each student. In addition, except a teacher who analyzed TB. 4, and half of the teachers who analyzed TB. 2, all groups of the participants stated that contents of the analyzed textbooks are not appropriate to each student (see Table 4.2.5).

Table 4.2.5 Opinions of the participants about appropriateness of the content

Subjects	Content should be appropriate to each student			Content is appropriate to each student			
	Yes	No	Mis.	Yes	Par.	No	Mis.
	%	%	%	%	%	%	%
All students	93.1	4.6	2.4	26.2	47.4	20.3	6.1
Students (TB. 1)	-	-	-	19.5	48.5	29.6	2.4
Students (TB. 2)	-	-	-	26.6	49.3	17.1	7
Students (TB. 3)	-	-	-	30.6	42.9	18.4	8.2
Students (TB. 4)	-	-	-	75	6.3	0	18.8
Teachers	94.4	5.6	0	55.6	22.2	22.2	0
Teachers (TB. 1)	-	-	-	55.6	22.2	22.2	0
Teachers (TB. 2)	-	-	-	0	50	50	0
Teachers (TB. 3)	-	-	-	100	0	0	0
Teachers (TB. 4)	-	-	-	0	0	100	0
Textbook Writers	100	0	0	100	0	0	0
Book Committee	75	25	0	25	50	0	25
Instructors	100	0	0	-	-	-	-

According to opinions of all groups of the participants, content of an ideal physics textbook should be prepared based on the curriculum. All groups of the participants, except a teacher who analyzed TB. 4 reported that the analyzed physics textbooks' contents maintained this characteristic (see Table 4.2.6).

Table 4.2.6 Opinions of the participants about preparation of content based on the curriculum

Subjects	Content should be prepared based on the curriculum			Content is prepared based on the curriculum			
	Yes	No	Mis.	Yes	Par.	No	Mis.
	%	%	%	%	%	%	%
All students	81.9	15.1	3	35.9	37.4	20.1	6.6
Students (TB. 1)	-	-	-	39.6	43.8	14.2	2.4
Students (TB. 2)	-	-	-	31.4	35.6	25.2	7.8
Students (TB. 3)	-	-	-	38.8	40.8	10.2	10.2
Students (TB. 4)	-	-	-	87.5	0	0	12.5
Teachers	100	0	0	61.1	27.8	11.1	0
Teachers (TB. 1)	-	-	-	33.3	55.6	11.1	0
Teachers (TB. 2)	-	-	-	75	0	25	0
Teachers (TB. 3)	-	-	-	100	0	0	0
Teachers (TB. 4)	-	-	-	0	0	100	0
Textbook Writers	100	0	0	100	0	0	0
Book Committee	100	0	0	75	0	0	25
Instructors	100	0	0	-	-	-	-

As reported in Table 4.2.7, according to all groups of the participants, content of an ideal physics textbook should prepare students for their future life. However, a book committee member stated the opposite of this idea. In addition, according to opinions of 2 out of 5 students, teachers and students who analyzed TB. 2, and nearly half of the students who analyzed TB. 1, contents of the analyzed physics textbooks do not prepare students for their future life (see Table 4.2.7).

Table 4.2.7 Opinions of the participants about contents' preparation of students for their future life

Subjects	Content should prepare students for their future life			Content prepares students for their future life			
	Yes	No	Mis.	Yes	Par.	No	Mis.
	%	%	%	%	%	%	%
All students	78.8	16.8	4.4	23.9	30.1	41.1	4.9
Students (TB. 1)	-	-	-	13	37.9	48.5	0.6
Students (TB. 2)	-	-	-	24.9	27.2	41.7	6.2
Students (TB. 3)	-	-	-	34.7	32.7	24.5	8.2
Students (TB. 4)	-	-	-	81.3	6.3	0	12.5
Teachers	88.9	11.1	0	0	61.1	38.9	0
Teachers (TB. 1)	-	-	-	0	77.8	22.2	0
Teachers (TB. 2)	-	-	-	0	75	25	0
Teachers (TB. 3)	-	-	-	100	0	0	0
Teachers (TB. 4)	-	-	-	0	100	0	0
Textbook Writers	100	0	0	100	0	0	0
Book Committee	75	25	0	0	50	0	50
Instructors	100	0	0	-	-	-	-

Texts should be appropriate to students' age and level according to all groups of the participants. According to all teachers' opinions, who analyzed TB. 3, the texts in the textbooks are not appropriate to students' age and level (see Table 4.2.8)

Table 4.2.8 Opinions of the participants about appropriateness of the texts to students' age and level

Subjects	Texts should be appropriate to students' age and level			Texts are appropriate to students' age and level			
	Yes	No	Mis.	Yes	Par.	No	Mis.
	%	%	%	%	%	%	%
All students	89	9.3	1.7	40.6	35.9	18.4	5.1
Students (TB. 1)	-	-	-	37.3	40.2	21.9	0.6
Students (TB. 2)	-	-	-	39.5	35.3	19	6.2
Students (TB. 3)	-	-	-	46.9	36.7	8.2	8.2
Students (TB. 4)	-	-	-	81.3	0	0	18.8
Teachers	100	0	0	44.4	50.0	5.6	0
Teachers (TB. 1)	-	-	-	33.3	66.7	0	0
Teachers (TB. 2)	-	-	-	0	75	25	0
Teachers (TB. 3)	-	-	-	0	0	100	0
Teachers (TB. 4)	-	-	-	100	0	0	0
Textbook Writers	100	0	0	100	0	0	0
Book Committee	100	0	0	25	50	0	25
Instructors	100	0	0	-	-	-	-

Texts should be appropriate to students' interests and experiences according to all the groups of participants. However, a book committee member and 1 out of 5 students do not agree with this idea. 2 out of 5 teachers and students, who analyzed TB. 1, stated that the texts of the analyzed textbooks are not appropriate to students' interests and experiences (see Table 4.2.9).

Table 4.2.9 Opinions of the participants about appropriateness of the texts to students' interests and experiences

Subjects	Texts should be appropriate to students' interests and experiences			Texts are appropriate to students' interests and experiences			
	Yes	No	Mis.	Yes	Par.	No	Mis.
	%	%	%	%	%	%	%
All students	76.8	20.6	2.5	26.6	40.1	28.6	4.7
Students (TB. 1)	-	-	-	11.8	44.4	43.2	0.6
Students (TB. 2)	-	-	-	30.3	38.9	24.6	6.2
Students (TB. 3)	-	-	-	30.6	44.9	16.3	8.2
Students (TB. 4)	-	-	-	87.5	6.3	0	6.3
Teachers	94.4	5.6	0	11.1	50.0	38.9	0
Teachers (TB. 1)	-	-	-	11.1	66.7	22.2	0
Teachers (TB. 2)	-	-	-	0	75	25	0
Teachers (TB. 3)	-	-	-	0	100	0	0
Teachers (TB. 4)	-	-	-	100	0	0	0
Textbook Writers	100	0	0	100	0	0	0
Book Committee	75	25	0	0	75	0	25
Instructors	100	0	0	-	-	-	-

All groups of the participants thought that texts in the books should be relevant to subject units. However, a book committee member stated the opposite. According to opinions of all groups of the participants, texts in the books are relevant to contents of units (see Table 4.2.10).

Table 4.2.10 Opinions of the participants about relevace of the texts to subject units

Subjects	Texts in the books should be relevant to contents of units			Texts in the books are relevant to contents of units			
	Yes	No	Mis.	Yes	Par.	No	Mis.
	%	%	%	%	%	%	%
All students	86.6	11.2	2.2	45.9	32.8	15.4	5.9
Students (TB. 1)	-	-	-	53.8	30.2	13	3
Students (TB. 2)	-	-	-	40.9	34.7	17.6	6.7
Students (TB. 3)	-	-	-	42.9	36.7	12.2	4.1
Students (TB. 4)	-	-	-	81.3	6.3	0	12.5
Teachers	94.4	5.6	0	44.4	50	5.6	0
Teachers (TB. 1)	-	-	-	55.6	44.4	0	0
Teachers (TB. 2)	-	-	-	50	25	25	0
Teachers (TB. 3)	-	-	-	0	100	0	0
Teachers (TB. 4)	-	-	-	100	0	0	0
Textbook Writers	100	0	0	100	0	0	0
Book Committee	75	25	0	75	0	0	25
Instructors	100	0	0	-	-	-	-

All groups of the participants thought that texts should be written clearly, understandably, and fluently. However, a book committee member stated the opposite. According to all groups of the participants, the analyzed physics textbooks are written clearly, understandably, and fluently (see Table 4.2.11).

Table 4.2.11 Opinions of the participants about clarity and fluency of texts

Subjects	Texts should be written clearly, understandably, and fluently			Texts are written clearly, understandably, and fluently			
	Yes	No	Mis.	Yes	Par.	No	Mis.
	%	%	%	%	%	%	%
All students	92.2	4.4	3.4	27.1	53.1	14.6	5.2
Students (TB. 1)	-	-	-	29.6	52.7	16.6	1.2
Students (TB. 2)	-	-	-	21.8	56.6	14.6	7
Students (TB. 3)	-	-	-	38.8	44.9	12.2	4.1
Students (TB. 4)	-	-	-	81.3	6.3	0	12.5
Teachers	94.4	5.6	0	27.8	66.7	5.6	0
Teachers (TB. 1)	-	-	-	44.4	55.6	0	0
Teachers (TB. 2)	-	-	-	0	75	25	0
Teachers (TB. 3)	-	-	-	0	100	0	0
Teachers (TB. 4)	-	-	-	100	0	0	0
Textbook Writers	100	0	0	100	0	0	0
Book Committee	75	25	0	25	50	0	25
Instructors	100	0	0	-	-	-	-

Most of the participants stated that contents of physics textbooks should include examples from daily life. In addition, except from the teacher who analyzed TB. 4, and half of the teachers who analyzed TB. 2, all participant groups stated that contents of the analyzed textbooks include examples from daily life (see Table 4.2.12).

Table 4.2.12 Opinions of the participants about daily life examples in content

Subjects	Content should include examples from daily life			Content includes examples from daily life			
	Yes	No	Mis.	Yes	Par.	No	Mis.
	%	%	%	%	%	%	%
All students	82.1	13.7	4.2	22.5	42.3	28.4	6.8
Students (TB. 1)	-	-	-	27.2	36.7	34.3	1.8
Students (TB. 2)	-	-	-	18.5	44.3	27.7	9.5
Students (TB. 3)	-	-	-	32.7	42.9	20.4	4.1
Students (TB. 4)	-	-	-	31.3	56.3	6.3	6.3
Teachers	88.9	11.1	0	22.2	61.1	16.7	0
Teachers (TB. 1)	-	-	-	0	100	0	0
Teachers (TB. 2)	-	-	-	0	50	50	0
Teachers (TB. 3)	-	-	-	100	0	0	0
Teachers (TB. 4)	-	-	-	0	0	100	0
Textbook Writers	100	0	0	100	0	0	0
Book Committee	75	25	0	0	50	0	50
Instructors	100	0	0	-	-	-	-

All groups of participants stated that the ideal physics textbook should be adequate in covering all the subjects in the suggested time. However, 1 out of 5 students and a book committee member stated the opposite. In addition, except from half of the teachers who analyzed TB. 2, all participant groups thought that the analyzed textbooks are adequate in covering all the subjects in the suggested time (see Table 4.3.1).

Table 4.3.1 Opinions of the participants about adequacy of textbooks in covering all the subjects in the lesson time suggested by Minsitry of Education

Subjects	Textbook should be adequate in covering all the subjects in the suggested time			Textbook is adequate in covering all the subjects in the suggested time			
	Yes	No	Mis.	Yes	Par.	No	Mis.
	%	%	%	%	%	%	%
All students	75.8	21	3.2	33.7	39.6	19.6	7.1
Students (TB. 1)	-	-	-	24.3	51.5	23.7	0.6
Students (TB. 2)	-	-	-	39.8	30	19.3	10.9
Students (TB. 3)	-	-	-	10.2	73.5	12.2	4.1
Students (TB. 4)	-	-	-	68.8	25	6.3	0
Teachers	94.4	5.6	0	61.1	11.1	27.8	0
Teachers (TB. 1)	-	-	-	66.7	0	33.3	0
Teachers (TB. 2)	-	-	-	0	50	50	0
Teachers (TB. 3)	-	-	-	100	0	0	0
Teachers (TB. 4)	-	-	-	100	0	0	0
Textbook Writers	100	0	0	100	0	0	0
Book Committee	75	25	0	50	50	0	0
Instructors	100	0	0	-	-	-	-

The presentation of the contents within the unit should be flexible in the need of modification according to opinions of all participant groups. In addition, all groups of the participants except half of the teachers who analyzed TB. 2, thought that the analyzed physics textbooks meet this characteristic (see Table 4.3.2).

Table 4.3.2 Opinions of the participants about flexibility of presentation of the contents in the need of modification

Subjects	Presentation of the contents should be flexible in the need of modification			Presentation of the contents is flexible in the need of modification			
	Yes	No	Mis.	Yes	Par.	No	Mis.
	%	%	%	%	%	%	%
All students	81.4	14.9	3.7	21.7	45.9	25.5	6.9
Students (TB. 1)	-	-	-	19.5	53.3	25.4	1.8
Students (TB. 2)	-	-	-	20.4	40.9	29.1	9.5
Students (TB. 3)	-	-	-	28.6	57.1	8.2	6.1
Students (TB. 4)	-	-	-	50	43.8	0	6.3
Teachers	100	0	0	33.3	55.6	11.1	0
Teachers (TB. 1)	-	-	-	55.6	44.4	0	0
Teachers (TB. 2)	-	-	-	0	50	50	0
Teachers (TB. 3)	-	-	-	0	100	0	0
Teachers (TB. 4)	-	-	-	100	0	0	0
Textbook Writers	100	0	0	100	0	0	0
Book Committee	75	0	25	25	75	0	0
Instructors	100	0	0	-	-	-	-

According to opinions of all groups of the participants, subject titles should be understandable in an ideal physics textbook, and they are understandable in the analyzed textbooks (see Table 4.3.3).

Table 4.3.3 Opinions of the participants about clarity of subject titles

Subjects	Subject titles should be understandable			Subject titles are understandable			
	Yes	No	Mis.	Yes	Par.	No	Mis.
	%	%	%	%	%	%	%
All students	87.8	9.8	2.4	40.6	39.9	14.4	5.1
Students (TB. 1)	-	-	-	56.2	30.8	12.4	0.6
Students (TB. 2)	-	-	-	29.7	45.9	17.1	7.3
Students (TB. 3)	-	-	-	53.1	36.7	6.1	4.1
Students (TB. 4)	-	-	-	81.3	12.5	0	6.3
Teachers	100	0	0	72.2	27.8	0	0
Teachers (TB. 1)	-	-	-	100	0	0	0
Teachers (TB. 2)	-	-	-	75	25	0	0
Teachers (TB. 3)	-	-	-	0	100	0	0
Teachers (TB. 4)	-	-	-	100	0	0	0
Textbook Writers	100	0	0	100	0	0	0
Book Committee	100	0	0	100	0	0	0
Instructors	100	0	0	-	-	-	-

Subjects in an ideal physics textbook should be complementary for previous topic and preparatory for following topic according to opinions of all groups of the participants. However, a book committee member did not agree with this idea. Except half of the teachers who analyzed TB. 2, all participant groups stated that the analyzed physics textbooks maintains this characteristic (see Table 4.3.4)

Table 4.3.4 Opinions of the participants about complementary and preparatory properties of textbooks

Subjects	Subjects should be complementary for previous topic and preparatory for following topic			Subjects are complementary for previous topic and preparatory for following topic			
	Yes %	No %	Mis. %	Yes %	Par. %	No %	Mis. %
All students	85.6	12	2.4	26.6	45.9	22.7	4.9
Students (TB. 1)	-	-	-	25.4	45.6	28.4	0.6
Students (TB. 2)	-	-	-	22.4	49.3	21.3	7
Students (TB. 3)	-	-	-	42.9	32.7	20.4	4.1
Students (TB. 4)	-	-	-	81.3	12.5	0	6.3
Teachers	88.9	11.1	0	22.2	66.7	11.1	0
Teachers (TB. 1)	-	-	-	22.2	77.8	0	0
Teachers (TB. 2)	-	-	-	50	0	50	0
Teachers (TB. 3)	-	-	-	0	100	0	0
Teachers (TB. 4)	-	-	-	0	100	0	0
Textbook Writers	100	0	0	100	0	0	0
Book Committee	75	25	0	75	25	0	0
Instructors	100	0	0	-	-	-	-

Most of the participants stated that relations of subjects to different subject areas should be stated in the physics textbook. According to most of the students, teachers, book committee members, relations of subjects to different subject areas were not stated in the analyzed physics textbooks. On the other hand, most of the students who analyzed TB. 4 and most of the teachers who

analyzed TB. 3 thought that relations of subjects to different subject areas are stated in the analyzed textbooks (see Table 4.3.5).

Table 4.3.5 Opinions of the participants about relations of subjects to different subject areas

Subjects	Relations of subjects to different subject areas should be stated			Relations of subjects to different subject areas are stated			
	Yes	No	Mis.	Yes	Par.	No	Mis.
	%	%	%	%	%	%	%
All students	72.3	25.4	2.4	24.9	24.4	45.5	5.2
Students (TB. 1)	-	-	-	21.9	21.9	55.6	0.6
Students (TB. 2)	-	-	-	26.3	22.4	43.7	7.6
Students (TB. 3)	-	-	-	14.3	46.9	34.7	4.1
Students (TB. 4)	-	-	-	56.3	25	12.5	6.3
Teachers	88.9	11.1	0	0	61.1	38.9	0
Teachers (TB. 1)	-	-	-	0	66.7	33.3	0
Teachers (TB. 2)	-	-	-	0	0	100	0
Teachers (TB. 3)	-	-	-	0	100	0	0
Teachers (TB. 4)	-	-	-	0	100	0	0
Textbook Writers	100	0	0	50	50	0	0
Book Committee	75	25	0	0	50	50	0
Instructors	100	0	0	-	-	-	-

Subjects in textbooks and questions in ÖSS should be parallel to each other according to all groups of participants. Differently, a book committee

member and 1 out of 4 students do not agree this. In addition, most of the students and teachers thought that subjects in TB. 2 and questions in ÖSS are parallel to each other (see Table 4.3.6)

Table 4.3.6 Opinions of the participants about parallelism between subjects in the textbooks and questions in ÖSS

Subjects	Subjects in textbooks and questions in ÖSS should be parallel to each other			Subjects in textbooks and questions in ÖSS are parallel to each other			
	Yes	No	Mis.	Yes	Par.	No	Mis.
	%	%	%	%	%	%	%
All students	77	20.8	2.2	25.2	35.4	34.2	5.2
Students (TB. 1)	-	-	-	17.8	64.5	16.6	1.2
Students (TB. 2)	-	-	-	26.3	19.6	47.1	7
Students (TB. 3)	-	-	-	28.6	51	12.2	8.2
Students (TB. 4)	-	-	-	68.8	31.3	0	0
Teachers	94.4	5.6	0	38.9	38.9	22.2	0
Teachers (TB. 1)	-	-	-	33.3	44.4	22.2	0
Teachers (TB. 2)	-	-	-	50	0	50	0
Teachers (TB. 3)	-	-	-	75	25	0	0
Teachers (TB. 4)	-	-	-	100	0	0	0
Textbook Writers	100	0	0	100	0	0	0
Book Committee	50	25	25	75	25	0	0
Instructors	100	0	0	-	-	-	-

According to most of the participants, textbooks should include cartoons related to subjects. However, most groups of participants, except students who analyzed TB. 3 and TB. 4 stated that of the analyzed physics textbooks do not include cartoons related to subjects (see Table 4.3.7).

Table 4.3.7 Opinions of the participants about cartoons in textbooks

Subjects	Textbooks should include cartoons related to subjects			Textbooks include cartoons related to subjects			
	Yes	No	Mis.	Yes	Par.	No	Mis.
	%	%	%	%	%	%	%
All students	83.1	14.4	2.5	24	30.5	40.8	4.7
Students (TB. 1)	-	-	-	11.8	22.5	65.1	0.6
Students (TB. 2)	-	-	-	28.3	31.1	33.9	6.7
Students (TB. 3)	-	-	-	30.6	46.9	18.4	4.1
Students (TB. 4)	-	-	-	37.5	50	6.3	6.3
Teachers	94.4	5.6	0	11.1	0	88.9	0
Teachers (TB. 1)	-	-	-	0	0	100	0
Teachers (TB. 2)	-	-	-	50	0	50	0
Teachers (TB. 3)	-	-	-	0	0	100	0
Teachers (TB. 4)	-	-	-	0	0	100	0
Textbook Writers	75	25	0	0	25	75	0
Book Committee	100	0	0	50	0	50	0
Instructors	100	0	0	-	-	-	-

Opinions of most of the participants indicated that textbooks should include puzzles related to concepts and contents of units. However,

approximately 1 out of 4 students stated the opposite. According to all groups of the participants, except book committee members, and students, who analyzed TB. 4, the analyzed physics textbooks do not include puzzles related to concepts and contents of units (see Table 4.3.8).

Table 4.3.8 Opinions of the participants about puzzles in texts

Subjects	Texts should include puzzles related to concepts and contents of units			Texts include puzzles related to concepts and contents of units			
	Yes	No	Mis.	Yes	Par.	No	Mis.
	%	%	%	%	%	%	%
All students	69.2	28.3	2.5	15.6	19.6	56.5	8.3
Students (TB. 1)	-	-	-	9.5	15.4	74.6	0.6
Students (TB. 2)	-	-	-	18.8	20.4	48.2	12.6
Students (TB. 3)	-	-	-	10.2	16.3	69.4	4.1
Students (TB. 4)	-	-	-	25	56.3	12.5	6.3
Teachers	94.4	5.6	0	5.6	11.1	83.3	0
Teachers (TB. 1)	-	-	-	11.1	0	88.9	0
Teachers (TB. 2)	-	-	-	0	50	50	0
Teachers (TB. 3)	-	-	-	0	0	100	0
Teachers (TB. 4)	-	-	-	0	0	100	0
Textbook Writers	100	0	0	0	0	100	0
Book Committee	100	0	0	25	50	25	0
Instructors	100	0	0	-	-	-	-

Most of the participants thought that subjects should have an adequate number of sub-titles, however approximately 1 out of 5 students do not agree with this. On the other hand, all of the teachers, who analyzed TB. 3, and most of the teachers, who analyzed TB. 1 stated that the subjects of the textbooks have no adequate number of sub-titles (see Table 4.3.9).

Table 4.3.9 Opinions of the participants about number of sub-titles of subjects

Subjects	Subjects should have an adequate number of sub-titles			Subjects have an adequate number of sub-titles			
	Yes	No	Mis.	Yes	Par.	No	Mis.
	%	%	%	%	%	%	%
All students	74.5	22.8	2.7	36.9	35.7	19.1	8.3
Students (TB. 1)	-	-	-	36.1	45.6	17.1	1.2
Students (TB. 2)	-	-	-	35.6	31.9	21.3	11.2
Students (TB. 3)	-	-	-	42.9	32.7	16.3	8.2
Students (TB. 4)	-	-	-	56.3	25	0	18.8
Teachers	100	0	0	27.8	27.8	44.4	0
Teachers (TB. 1)	-	-	-	22.2	44.4	33.3	0
Teachers (TB. 2)	-	-	-	50	25	25	0
Teachers (TB. 3)	-	-	-	0	0	100	0
Teachers (TB. 4)	-	-	-	100	0	0	0
Textbook Writers	100	0	0	100	0	0	0
Book Committee	100	0	0	75	25	0	0
Instructors	100	0	0	-	-	-	-

All groups of the participants stated that an ideal physics textbooks' readability should be appropriate to the level of students and it is appropriate in the analyzed physics textbooks (see Table 4.4.1).

Table 4.4.1 Opinions of the participants about appropriateness of readability to the level of students

Subjects	Readability should be appropriate to the level of students			Readability is appropriate to the level of students			
	Yes	No	Mis.	Yes	Par.	No	Mis.
	%	%	%	%	%	%	%
All students	90.4	6.1	3.6	38.1	38.9	18.1	4.9
Students (TB. 1)	-	-	-	32.5	52.7	14.2	0.6
Students (TB. 2)	-	-	-	38.1	31.9	22.7	7.3
Students (TB. 3)	-	-	-	42.9	49	4.1	4.1
Students (TB. 4)	-	-	-	81.3	18.8	0	0
Teachers	100	0	0	50.0	50.0	0	0
Teachers (TB. 1)	-	-	-	44.4	55.6	0	0
Teachers (TB. 2)	-	-	-	0	100	0	0
Teachers (TB. 3)	-	-	-	100	0	0	0
Teachers (TB. 4)	-	-	-	100	0	0	0
Textbook Writers	100	0	0	100	0	0	0
Book Committee	100	0	0	50	50	0	0
Instructors	100	0	0	-	-	-	-

While most of the participants stated that technical words in an ideal physics textbooks should be in minimum amount, approximately 1 out of 4 students, a textbook writer and a book committee member do not agree with this. In the analyzed physics textbooks, according to most of the participant groups, technical words are in minimum amount. On the other hand, the teacher, who analyzed TB. 4 stated that technical words are not in minimum amount in the textbook (see Table 4.4.2).

Table 4.4.2 Opinions of the participants about technical words in texts

Subjects	Technical words should be in minimum amount			Technical words are in minimum amount			
	Yes	No	Mis.	Yes	Par.	No	Mis.
	%	%	%	%	%	%	%
All students	74.5	22.8	2.7	21.2	46	27.7	5.1
Students (TB. 1)	-	-	-	17.8	53.3	28.4	0.6
Students (TB. 2)	-	-	-	21.3	43.4	28	7.3
Students (TB. 3)	-	-	-	30.6	36.7	28.6	4.1
Students (TB. 4)	-	-	-	25	56.3	12.5	6.3
Teachers	83.3	16.7	0	16.7	66.7	16.7	0
Teachers (TB. 1)	-	-	-	33.3	44.4	22.2	0
Teachers (TB. 2)	-	-	-	0	100	0	0
Teachers (TB. 3)	-	-	-	0	100	0	0
Teachers (TB. 4)	-	-	-	0	0	100	0
Textbook Writers	75	25	0	100	0	0	0
Book Committee	75	25	0	25	50	25	0
Instructors	100	0	0	-	-	-	-

Although a book committee member stated the opposite, most of the participants thought that an ideal physics textbook should be written clearly, simply, and with the familiar language. However, according to half of the book committee members and most of the teachers, who analyzed TB. 2, the analyzed physics textbooks do not maintain this property (see Table 4.4.3).

Table 4.4.3 Opinions of the participants about clarity, simplicity, and familiarity of language in texts

Subjects	Should be written clearly, simply, and with the familiar language			Written clearly, simply, and with the familiar language			
	Yes	No	Mis.	Yes	Par.	No	Mis.
	%	%	%	%	%	%	%
All students	85.6	11.8	2.5	23.4	45.3	26.2	5.1
Students (TB. 1)	-	-	-	13.6	58	27.8	0.6
Students (TB. 2)	-	-	-	24.6	39.8	28.3	7.3
Students (TB. 3)	-	-	-	32.7	49	14.3	4.1
Students (TB. 4)	-	-	-	68.8	25	0	6.3
Teachers	94.4	5.6	0	22.2	50.0	27.8	0
Teachers (TB. 1)	-	-	-	33.3	44.4	22.2	0
Teachers (TB. 2)	-	-	-	0	25	75	0
Teachers (TB. 3)	-	-	-	0	100	0	0
Teachers (TB. 4)	-	-	-	100	0	0	0
Textbook Writers	100	0	0	100	0	0	0
Book Committee	75	25	0	25	25	50	0
Instructors	100	0	0	-	-	-	-

Length of sentences should be appropriate to students' level according to all groups of the participants. On the other hand, half of the book committee members, and most of the teachers, who analyzed TB. 2, reported that the analyzed textbooks do not maintain this characteristic (see Table 4.4.4).

Table 4.4.4 Opinions of the participants about appropriateness of length of sentences to students' level

Subjects	Length of sentences should be appropriate to students' level			Length of sentences are appropriate to students' level			
	Yes	No	Mis.	Yes	Par.	No	Mis.
	%	%	%	%	%	%	%
All students	82.6	14.7	2.7	24.9	45.5	24.4	5.2
Students (TB. 1)	-	-	-	27.2	51.5	20.1	1.2
Students (TB. 2)	-	-	-	21	44.8	26.9	7.3
Students (TB. 3)	-	-	-	38.8	32.7	24.5	4.1
Students (TB. 4)	-	-	-	43.8	37.5	12.5	6.3
Teachers	100	0	0	55.6	16.7	28.8	0
Teachers (TB. 1)	-	-	-	55.6	22.2	22.2	0
Teachers (TB. 2)	-	-	-	0	25	75	0
Teachers (TB. 3)	-	-	-	100	0	0	0
Teachers (TB. 4)	-	-	-	100	0	0	0
Textbook Writers	100	0	0	100	0	0	0
Book Committee	100	0	0	25	25	50	0
Instructors	100	0	0	-	-	-	-

According to a large number of participants, pronunciation of foreign words should not be given next to them in parenthesis. In addition, except from most of the students, who analyzed TB. 4, and all of the teachers, who analyzed TB. 3, all groups of the participants stated that pronunciation of foreign words is not given next to them in parenthesis (see Table 4.4.5).

Table 4.4.5 Opinions of the participants about pronunciation of foreign words in the textbooks

Subjects	Pronunciation of foreign words should be given next to them in parenthesis			Pronunciation of foreign words is given next to them in parenthesis			
	Yes	No	Mis.	Yes	Par.	No	Mis.
	%	%	%	%	%	%	%
All students	69.9	27.4	2.7	24.4	17.9	52.5	5.2
Students (TB. 1)	-	-	-	6.5	13	79.3	1.2
Students (TB. 2)	-	-	-	28.3	20.2	44.5	7
Students (TB. 3)	-	-	-	51	14.3	30.6	4.1
Students (TB. 4)	-	-	-	43.8	31.3	12.5	12.5
Teachers	55.6	44.4	0	0	33.3	66.7	0
Teachers (TB. 1)	-	-	-	0	11.1	88.9	0
Teachers (TB. 2)	-	-	-	0	25	75	0
Teachers (TB. 3)	-	-	-	0	100	0	0
Teachers (TB. 4)	-	-	-	0	0	100	0
Textbook Writers	0	100	0	0	0	100	0
Book Committee	25	75	0	0	25	75	0
Instructors	33.3	66.7	0	-	-	-	-

Although most groups of the participants thought that sentences should be ordered from concrete to abstract, only half of the book committee members agree with this. In addition, in the analyzed textbooks sentences are ordered from concrete to abstract according to most of the participants except most of the students who analyzed TB. 1, and the teacher who analyzed TB. 4 (see Table 4.4.6).

Table 4.4.6 Opinions of the participants about the order of sentences in physics textbooks

Subjects	Sentences should be ordered from concrete to abstract			Sentences are ordered from concrete to abstract			
	Yes	No	Mis.	Yes	Par.	No	Mis.
	%	%	%	%	%	%	%
All students	67.9	28.6	3.6	18.6	43.7	32	5.8
Students (TB. 1)	-	-	-	7.7	39.6	52.1	0.6
Students (TB. 2)	-	-	-	22.4	44.3	25.2	8.1
Students (TB. 3)	-	-	-	22.4	57.1	16.3	4.1
Students (TB. 4)	-	-	-	37.5	31.3	18.8	12.5
Teachers	72.2	27.8	0	33.3	38.9	27.8	0
Teachers (TB. 1)	-	-	-	22.2	44.4	33.3	0
Teachers (TB. 2)	-	-	-	0	75	25	0
Teachers (TB. 3)	-	-	-	100	0	0	0
Teachers (TB. 4)	-	-	-	0	0	100	0
Textbook Writers	100	0	0	75	25	0	0
Book Committee	50	50	0	25	50	25	0
Instructors	100	0	0	-	-	-	-

Although most of the students and teachers stated that texts should be supported with visuals like pictures, graphs and schemes, according to them the analyzed textbooks do not sufficiently met this characteristic (see Table 4.4.7).

Table 4.4.7 Opinions of the participants about visuals in texts

Subjects	Texts should be supported with visuals (pictures, graphs, schemes)			Texts are supported with visuals (pictures, graphs, schemes)			
	Yes	No	Mis.	Yes	Par.	No	Mis.
	%	%	%	%	%	%	%
All students	85.4	11.3	3.2	27.9	45.7	21.5	4.9
Students (TB. 1)	-	-	-	32	52.7	14.8	0.6
Students (TB. 2)	-	-	-	21.8	45.1	26.1	7
Students (TB. 3)	-	-	-	40.8	36.7	18.4	4.1
Students (TB. 4)	-	-	-	81.3	12.5	0	6.3
Teachers	94.4	5.6	0	27.8	44.4	27.8	0
Teachers (TB. 1)	-	-	-	11.1	55.6	33.3	0
Teachers (TB. 2)	-	-	-	0	75	25	0
Teachers (TB. 3)	-	-	-	100	0	0	0
Teachers (TB. 4)	-	-	-	0	0	100	0
Textbook Writers	100	0	0	100	0	0	0
Book Committee	100	0	0	25	75	0	0
Instructors	100	0	0	-	-	-	-

All groups of the participants stated that texts should be avoided from unnecessary information. When the opinions of the groups of participants

compared, students' opinions about the stated characteristic of the analyzed textbooks were more negative than other groups of the participants (see Table 4.2.1).

Table 4.4.8 Opinions of the participants about avoiding unnecessary information from texts

Subjects	Texts should be avoided from unnecessary information			Texts are avoided from unnecessary information			
	Yes	No	Mis.	Yes	Par.	No	Mis.
	%	%	%	%	%	%	%
All students	87.3	9.3	3.4	23.5	40.1	28.3	8.1
Students (TB. 1)	-	-	-	25.4	43.2	32.2	1.2
Students (TB. 2)	-	-	-	19.6	38.9	30	11.5
Students (TB. 3)	-	-	-	36.7	49	10.2	4.1
Students (TB. 4)	-	-	-	50	6.3	25	18.8
Teachers	94.4	5.6	0	27.8	72.2	0	0
Teachers (TB. 1)	-	-	-	44.4	55.6	0	0
Teachers (TB. 2)	-	-	-	0	100	0	0
Teachers (TB. 3)	-	-	-	0	100	0	0
Teachers (TB. 4)	-	-	-	100	0	0	0
Textbook Writers	100	0	0	100	0	0	0
Book Committee	75	25	0	50	50	0	0
Instructors	100	0	0	-	-	-	-

Physics textbook should define science education as inquiry and investigation according to all groups of the participants. According to most of the book committee members the analyzed textbooks do not define science education as inquiry and investigation (see Table 4.5.1).

Table 4.5.1 Opinions of the participants about definition of science in textbooks

Subjects	Physics textbook should define science education as inquiry and investigation			Physics textbook defines science education as inquiry and investigation			
	Yes	No	Mis.	Yes	Par.	No	Mis.
	%	%	%	%	%	%	%
All students	78.5	17.3	4.2	28.4	43.7	22.5	5.4
Students (TB. 1)	-	-	-	25.4	45	29	0.6
Students (TB. 2)	-	-	-	25.2	45.1	22.4	7.3
Students (TB. 3)	-	-	-	44.9	38.8	6.1	10.2
Students (TB. 4)	-	-	-	81.3	12.5	6.3	0
Teachers	94.4	5.6	0	5.6	72.2	22.2	0
Teachers (TB. 1)	-	-	-	11.1	66.7	22.2	0
Teachers (TB. 2)	-	-	-	0	75	25	0
Teachers (TB. 3)	-	-	-	0	100	0	0
Teachers (TB. 4)	-	-	-	0	0	100	0
Textbook Writers	100	0	0	75	25	0	0
Book Committee	100	0	0	0	25	75	0
Instructors	100	0	0	-	-	-	-

Physics textbook should arouse student skills according to all groups of the participants. However, in general, most of the textbook writers' and book committee members' opinions were more positive than most of the students and teachers about analyzed physics textbooks (see Table 4.5.2).

Table 4.5.2 Opinions of the participants about physics textbooks' arousing of student skills

Subjects	Physics textbook should arouse student skills			Physics textbook arouse student skills			
	Yes	No	Mis.	Yes	Par.	No	Mis.
	%	%	%	%	%	%	%
All students	79.2	16.6	4.2	22.2	35.5	36.9	5.4
Students (TB. 1)	-	-	-	8.3	40.8	50.3	0.6
Students (TB. 2)	-	-	-	27.2	32.8	33.3	6.7
Students (TB. 3)	-	-	-	22.4	36.7	28.6	12.2
Students (TB. 4)	-	-	-	56.3	37.5	0	6.3
Teachers	94.4	5.6	0	5.6	66.7	27.8	0
Teachers (TB. 1)	-	-	-	0	66.7	33.3	0
Teachers (TB. 2)	-	-	-	0	50	50	0
Teachers (TB. 3)	-	-	-	0	100	0	0
Teachers (TB. 4)	-	-	-	100	0	0	0
Textbook Writers	100	0	0	100	0	0	0
Book Committee	75	25	0	25	75	0	0
Instructors	100	0	0	-	-	-	-

Although all groups of the participants stated that physics textbooks should convey an overall sense of purpose and direction that is understandable and motivating to students, according to their opinions analyzed physics textbooks do not maintained this characteristic(see Table 4.5.3).

Table 4.5.3 Opinions of the participants about physics textbooks' convey of an overall sense of purpose and direction that is understandable and motivating to students

Subjects	Physics textbook should convey an overall sense of purpose and direction that is understandable and motivating to students			Physics textbook conveys an overall sense of purpose and direction that is understandable and motivating to students			
	Yes %	No %	Mis. %	Yes %	Par. %	No %	Mis. %
All students	84.3	11.5	4.2	22.2	37.7	34.5	5.6
Students (TB. 1)	-	-	-	12.4	44.4	42.6	0.6
Students (TB. 2)	-	-	-	24.9	33.3	34.5	7.3
Students (TB. 3)	-	-	-	26.5	46.9	16.3	10.2
Students (TB. 4)	-	-	-	50	37.5	6.3	6.3
Teachers	94.4	5.6	0	22.2	33.3	44.4	0
Teachers (TB. 1)	-	-	-	11.1	22.2	66.7	0
Teachers (TB. 2)	-	-	-	50	0	50	0
Teachers (TB. 3)	-	-	-	0	100	0	0
Teachers (TB. 4)	-	-	-	100	0	0	0
Textbook Writers	100	0	0	50	0	50	0
Book Committee	75	25	0	25	25	50	0
Instructors	100	0	0	-	-	-	-

Physics textbooks should convey the purpose of each activity and its relationship to others according to all groups of the participants. However, results indicated that book committee members' and textbook writers' opinions about the analyzed textbooks were more positive than most of the students' and teachers' opinions (see Table 4.5.4).

Table 4.5.4 Opinions of the participants about physics textbooks' convey of purpose of each activity

Subjects	Physics textbook should convey the purpose of each activity and its relationship to others			Physics textbook conveys the purpose of each activity and its relationship to others			
	Yes %	No %	Mis. %	Yes %	Par. %	No %	Mis. %
All students	77.2	18.3	4.6	23.2	36.4	34.9	5.6
Students (TB. 1)	-	-	-	15.4	44.4	39.1	1.2
Students (TB. 2)	-	-	-	24.9	31.1	36.7	7.3
Students (TB. 3)	-	-	-	26.5	51	16.3	6.1
Students (TB. 4)	-	-	-	56.3	25	6.3	12.5
Teachers	94.4	5.6	0	11.1	50.0	38.9	0
Teachers (TB. 1)	-	-	-	11.1	33.3	55.6	0
Teachers (TB. 2)	-	-	-	0	50	50	0
Teachers (TB. 3)	-	-	-	0	100	0	0
Teachers (TB. 4)	-	-	-	100	0	0	0
Textbook Writers	100	0	0	100	0	0	0
Book Committee	75	25	0	25	50	25	0
Instructors	100	0	0	-	-	-	-

Opinions of most of the teachers and students were parallel to each other about logical or strategic sequence of activities in the analyzed physics textbooks (see Table 4.5.5).

Table 4.5.5 Opinions of the participants about logical or strategic sequence of activities in the physics textbooks

Subjects	Physics textbook should include a logical or strategic sequence of activities			Physics textbook includes a logical or strategic sequence of activities			
	Yes	No	Mis.	Yes	Par.	No	Mis.
	%	%	%	%	%	%	%
All students	75.8	19.8	4.4	22	37.9	34.7	5.4
Students (TB. 1)	-	-	-	13	52.1	34.3	0.6
Students (TB. 2)	-	-	-	24.9	31.7	36.1	7.3
Students (TB. 3)	-	-	-	16.3	40.8	34.7	8.2
Students (TB. 4)	-	-	-	68.8	18.8	6.3	6.3
Teachers	94.4	5.6	0	27.8	38.9	33.3	0
Teachers (TB. 1)	-	-	-	11.1	55.6	33.3	0
Teachers (TB. 2)	-	-	-	0	50	50	0
Teachers (TB. 3)	-	-	-	100	0	0	0
Teachers (TB. 4)	-	-	-	0	0	100	0
Textbook Writers	100	0	0	100	0	0	0
Book Committee	100	0	0	25	75	0	0
Instructors	100	0	0	-	-	-	-

Although physics textbooks should specify pre-requisite knowledge and skills necessary to the learning of the key ideas, according to most of the teachers' and book committee members' opinions, the analyzed textbooks do not specify pre-requisite knowledge and skills necessary to the learning of the key ideas (see Table 4.5.6).

Table 4.5.6 Opinions of the participants about physics textbooks' specification of pre-requisite knowledge and skills necessary to the learning of the key ideas

Subjects	Physics textbook should specify pre-requisite knowledge and skills necessary to the learning of the key ideas			Physics textbook specifies pre-requisite knowledge and skills necessary to the learning of the key ideas			
	Yes	No	Mis.	Yes	Par.	No	Mis.
	%	%	%	%	%	%	%
All students	84.4	11.7	3.9	16.9	43.8	22.7	6.6
Students (TB. 1)	-	-	-	11.2	58.6	29	1.2
Students (TB. 2)	-	-	-	18.2	35.3	37	9.5
Students (TB. 3)	-	-	-	22.4	53.1	18.4	6.1
Students (TB. 4)	-	-	-	31.3	50	18.8	0
Teachers	88.9	11.1	0	11.1	44.4	44.4	0
Teachers (TB. 1)	-	-	-	0	33.3	66.7	0
Teachers (TB. 2)	-	-	-	50	25	25	0
Teachers (TB. 3)	-	-	-	0	100	0	0
Teachers (TB. 4)	-	-	-	0	0	100	0
Textbook Writers	100	0	0	100	0	0	0
Book Committee	75	25	0	25	25	50	0
Instructors	100	0	0	-	-	-	-

Physics textbook should alert teachers to commonly held student ideas according to all groups of the participants. However, according to most groups of the participants analyzed textbooks do not maintained this characteristic (see Table 4.5.7).

Table 4.5.7 Opinions of the participants about physics textbooks' alert of teachers to commonly held student ideas

Subjects	Physics textbook should alert teachers to commonly held student ideas			Physics textbook alerts teachers to commonly held student ideas			
	Yes	No	Mis.	Yes	Par.	No	Mis.
	%	%	%	%	%	%	%
All students	77	20	3	15.6	44.2	33.5	6.8
Students (TB. 1)	-	-	-	5.3	45	48.5	1.2
Students (TB. 2)	-	-	-	16.5	45.7	28.3	9.5
Students (TB. 3)	-	-	-	24.5	38.8	30.6	6.1
Students (TB. 4)	-	-	-	75	18.8	0	6.3
Teachers	94.4	5.6	0	0	33.3	66.7	0
Teachers (TB. 1)	-	-	-	0	11.1	88.9	0
Teachers (TB. 2)	-	-	-	0	25	75	0
Teachers (TB. 3)	-	-	-	0	100	0	0
Teachers (TB. 4)	-	-	-	0	0	100	0
Textbook Writers	100	0	0	25	50	25	0
Book Committee	75	25	0	0	0	100	0
Instructors	100	0	0	-	-	-	-

Physics textbooks should include suggestions for teachers to find out what their students think about familiar phenomena related to a key idea before the key ideas are introduced according to all groups of the participants. However, except the textbook writers, most of the students and teachers who analyzed TB. 3, and most of the students who analyzed TB. 4, all groups of participants stated that the analyzed physics textbooks do not maintain this characteristic (see Table 4.5.8).

Although all groups of the participants stated that physics textbooks should explicitly address commonly held student ideas, only the textbook writers and the students, who analyzed TB. 4 stated that the analyzed physics textbooks explicitly addresses commonly held student ideas (see Table 4.5.9).

According to most of the students' and teachers' opinions, the analyzed physics textbooks do not met their expectations about the textbooks' multiple strategies provided by the textbooks to support the key ideas (see Table 4.5.10).

Table 4.5.8 Opinions of the participants about physics textbooks' suggestions for teachers to find out what their students think about familiar phenomena related to a key idea before the key ideas are introduced

Subjects	Physics textbook should include suggestions for teachers to find out what their students think about familiar phenomena related to a key idea before the key ideas are introduced			Physics textbook includes suggestions for teachers to find out what their students think about familiar phenomena related to a key idea before the key ideas are introduced			
	Yes %	No %	Mis. %	Yes %	Par. %	No %	Mis. %
All students	78	17.6	4.4	23.2	32.3	36.7	7.8
Students (TB. 1)	-	-	-	13	43.2	42.6	1.2
Students (TB. 2)	-	-	-	25.8	26.9	37	10.4
Students (TB. 3)	-	-	-	24.5	38.8	26.5	10.2
Students (TB. 4)	-	-	-	68.8	18.8	0	12.5
Teachers	94.4	5.6	0	0	38.9	61.1	0
Teachers (TB. 1)	-	-	-	0	22.2	77.8	0
Teachers (TB. 2)	-	-	-	0	25	75	0
Teachers (TB. 3)	-	-	-	0	100	0	0
Teachers (TB. 4)	-	-	-	0	0	100	0
Textbook Writers	100	0	0	75	25	0	0
Book Committee	75	25	0	0	25	75	0
Instructors	100	0	0	-	-	-	-

Table 4.5.9 Opinions of the participants about physics textbooks' explicitly addressing of commonly held student ideas

Subjects	Physics textbook should explicitly address commonly held student ideas			Physics textbook explicitly addresses commonly held student ideas			
	Yes	No	Mis.	Yes	Par.	No	Mis.
	%	%	%	%	%	%	%
All students	78.3	17.8	3.9	18.6	28.8	45.2	7.4
Students (TB. 1)	-	-	-	5.9	25.4	67.5	1.2
Students (TB. 2)	-	-	-	24.4	27.7	37.3	10.6
Students (TB. 3)	-	-	-	10.2	42.9	38.8	8.2
Students (TB. 4)	-	-	-	50	43.8	6.3	0
Teachers	100	0	0	5.6	5.6	88.9	0
Teachers (TB. 1)	-	-	-	11.1	11.1	77.8	0
Teachers (TB. 2)	-	-	-	0	0	100	0
Teachers (TB. 3)	-	-	-	0	0	100	0
Teachers (TB. 4)	-	-	-	0	0	100	0
Textbook Writers	100	0	0	100	0	0	0
Book Committee	100	0	0	25	0	75	0
Instructors	100	0	0	-	-	-	-

Table 4.5.10 Opinions of the participants about multiple strategies provided by the textbooks

Subjects	Physics textbook should provide multiple and varied phenomena to support the key ideas			Physics textbook provides multiple and varied phenomena to support the key ideas			
	Yes	No	Mis.	Yes	Par.	No	Mis.
	%	%	%	%	%	%	%
All students	85.6	9.6	4.7	20.3	34.3	37.7	7.6
Students (TB. 1)	-	-	-	11.2	46.7	39.6	2.4
Students (TB. 2)	-	-	-	24.6	22.7	42.3	10.4
Students (TB. 3)	-	-	-	6.1	77.6	10.2	6.1
Students (TB. 4)	-	-	-	62.5	31.3	0	6.3
Teachers	94.4	5.6	0	5.6	50.0	44.4	0
Teachers (TB. 1)	-	-	-	11.1	33.3	55.6	0
Teachers (TB. 2)	-	-	-	0	50	50	0
Teachers (TB. 3)	-	-	-	0	100	0	0
Teachers (TB. 4)	-	-	-	0	0	100	0
Textbook Writers	100	0	0	50	25	25	0
Book Committee	75	25	0	25	50	25	0
Instructors	100	0	0	-	-	-	-

According to all groups of the participants, physics textbook should include first-hand experiences with phenomena and provide students with a vicarious sense of the phenomena when experiences are not first-hand. Textbook writers' and book committee members' opinions were better than most of the teachers' and students' opinions about the stated characteristic of the analyzed textbooks (see Table 4.5.11).

Table 4.5.11 Opinions of the participants about physics textbooks' first-hand experiences with phenomena and providing of a vicarious sense of the phenomena when experiences are not first-hand to students

Subjects	Physics textbook should include first-hand experiences with phenomena and provide students with a vicarious sense of the phenomena when experiences are not first-hand			Physics textbook includes first-hand experiences with phenomena and provide students with a vicarious sense of the phenomena when experiences are not first-hand			
	Yes	No	Mis.	Yes	Par.	No	Mis.
	%	%	%	%	%	%	%
All students	77.5	18.4	4.1	22.2	37.2	33.5	7.1
Students (TB. 1)	-	-	-	11.8	49.7	37.3	1.2
Students (TB. 2)	-	-	-	24.6	31.9	33.3	10.1
Students (TB. 3)	-	-	-	34.7	38.8	20.4	6.1
Students (TB. 4)	-	-	-	37.5	18.8	37.5	6.3
Teachers	100	0	0	0	66.7	22.2	11.1
Teachers (TB. 1)	-	-	-	0	55.6	22.2	2
Teachers (TB. 2)	-	-	-	0	50	50	0
Teachers (TB. 3)	-	-	-	0	100	0	0
Teachers (TB. 4)	-	-	-	0	100	0	0
Textbook Writers	100	0	0	100	0	0	0
Book Committee	100	0	0	0	100	0	0
Instructors	100	0	0	-	-	-	-

Physics textbooks should include appropriate representations of the key ideas according to all groups of the participants. In addition, textbook writers' opinions about the analyzed physics textbooks are better than the other groups of participants about this stated characteristic (see Table 4.5.12).

Table 4.5.12 Opinions of the participants about appropriateness of representations of the key ideas in the textbooks

Subjects	Physics textbook should include appropriate representations of the key ideas			Physics textbook includes appropriate representations of the key ideas			
	Yes	No	Mis.	Yes	Par.	No	Mis.
	%	%	%	%	%	%	%
All students	83.9	10	6.1	29.8	33	29.3	8
Students (TB. 1)	-	-	-	33.7	37.9	25.4	3
Students (TB. 2)	-	-	-	26.1	28	35.3	10.6
Students (TB. 3)	-	-	-	32.7	53.1	8.2	6.1
Students (TB. 4)	-	-	-	62.5	31.3	0	6.3
Teachers	94.4	5.6	0	38.9	33.3	27.8	0
Teachers (TB. 1)	-	-	-	22.2	44.4	33.4	0
Teachers (TB. 2)	-	-	-	0	50	50	0
Teachers (TB. 3)	-	-	-	100	0	0	0
Teachers (TB. 4)	-	-	-	100	0	0	0
Textbook Writers	100	0	0	100	0	0	0
Book Committee	75	25	0	25	25	50	0
Instructors	100	0	0	-	-	-	-

Although all groups of the participants believed that physics textbooks should demonstrate, model, or include suggestions for teachers on how to demonstrate or model skills or the use of knowledge, most of the students and teachers mentioned that the analyzed textbooks do not maintain this (see Table 4.5.13).

Physics textbooks should provide tasks or questions for students to practice skills or use of knowledge in a variety of situations according to all groups of the participants. In addition, most of the teachers' opinions about the analyzed physics textbooks are more positive than most of the students' opinions (see Table 4.5.14).

Physics textbooks should routinely include suggestions for having each student express, clarify, justify, and represent his or her ideas according to all groups of the participants. In addition, textbook writers' opinions about the analyzed physics textbooks are better than the other groups of participants about this characteristic (see Table 4.5.15).

Table 4.5.13 Opinions of the participants about demonstration of use of knowledge

Subjects	Physics textbook should demonstrate, model, or include suggestions for teachers on how to demonstrate or model skills or the use of knowledge			Physics textbook demonstrates, models, or includes suggestions for teachers on how to demonstrate or model skills or the use of knowledge			
	Yes %	No %	Mis. %	Yes %	Par. %	No %	Mis. %
All students	73.9	20.5	5.6	24.2	32	36.2	7.6
Students (TB. 1)	-	-	-	10.7	43.8	43.2	2.4
Students (TB. 2)	-	-	-	29.7	24.6	35.3	10.4
Students (TB. 3)	-	-	-	18.4	46.9	28.6	6.1
Students (TB. 4)	-	-	-	62.5	25	6.3	6.3
Teachers	100	0	0	5.6	66.7	27.8	0
Teachers (TB. 1)	-	-	-	11.1	44.4	44.4	0
Teachers (TB. 2)	-	-	-	0	75	25	0
Teachers (TB. 3)	-	-	-	0	100	0	0
Teachers (TB. 4)	-	-	-	0	100	0	0
Textbook Writers	100	0	0	100	0	0	0
Book Committee	100	0	0	25	50	25	0
Instructors	100	0	0	-	-	-	-

Table 4.5.14 Opinions of the participants about physics textbooks' tasks or questions for students

Subjects	Physics textbook should provide tasks or questions for students to practice skills or use of knowledge in a variety of situations			Physics textbook provides tasks or questions for students to practice skills or use of knowledge in a variety of situations			
	Yes %	No %	Mis. %	Yes %	Par. %	No %	Mis. %
All students	79	16.1	4.9	31.1	31.8	30.1	6.9
Students (TB. 1)	-	-	-	43.8	35.5	19.5	1.2
Students (TB. 2)	-	-	-	22.7	29.7	37.5	10.1
Students (TB. 3)	-	-	-	34.7	40.8	18.4	6.1
Students (TB. 4)	-	-	-	75	12.5	12.5	0
Teachers	94.4	5.6	0	27.8	55.6	16.7	0
Teachers (TB. 1)	-	-	-	22.2	55.6	22.2	0
Teachers (TB. 2)	-	-	-	50	25	25	0
Teachers (TB. 3)	-	-	-	0	100	0	0
Teachers (TB. 4)	-	-	-	100	0	0	0
Textbook Writers	100	0	0	100	0	0	0
Book Committee	75	25	0	50	25	25	0
Instructors	100	0	0	-	-	-	-

Table 4.5.15 Opinions of the participants about physics textbooks' suggestions for having each student express, clarify, justify, and represent his or her ideas

Subjects	Physics textbook should routinely include suggestions for having each student express, clarify, justify, and represent his or her ideas			Physics textbook routinely includes suggestions for having each student express, clarify, justify, and represent his or her ideas			
	Yes	No	Mis.	Yes	Par.	No	Mis.
	%	%	%	%	%	%	%
All students	78.3	16.8	4.9	22.7	29.8	40.1	7.4
Students (TB. 1)	-	-	-	8.9	36.1	53.8	1.2
Students (TB. 2)	-	-	-	27.5	25.8	36.4	10.4
Students (TB. 3)	-	-	-	20.4	42.9	28.6	8.2
Students (TB. 4)	-	-	-	68.8	12.5	12.5	6.3
Teachers	100	0	0	5.6	44.4	50.0	0
Teachers (TB. 1)	-	-	-	11.1	22.2	66.7	0
Teachers (TB. 2)	-	-	-	0	25	75	0
Teachers (TB. 3)	-	-	-	0	100	0	0
Teachers (TB. 4)	-	-	-	0	100	0	0
Textbook Writers	100	0	0	75	25	0	0
Book Committee	100	0	0	25	0	75	0
Instructors	100	0	0	-	-	-	-

Physics textbooks should include tasks and/or questions sequences to guide student interpretation and reasoning about experiences with phenomena and readings according to all groups of the participants. In addition, most of the

students stated that the analyzed textbooks do not meet this property (see Table 4.5.16).

Table 4.5.16 Opinions of the participants about physics textbooks' tasks and/or questions sequences

Subjects	Physics textbook should include tasks and/or questions sequences to guide student interpretation and reasoning about experiences with phenomena and readings			Physics textbook includes tasks and/or questions sequences to guide student interpretation and reasoning about experiences with phenomena and readings			
	Yes	No	Mis.	Yes	Par.	No	Mis.
	%	%	%	%	%	%	%
All students	77	18.1	4.9	23.5	32.8	36.2	7.4
Students (TB. 1)	-	-	-	20.1	49.7	29	1.2
Students (TB. 2)	-	-	-	23.2	24.6	41.7	10.4
Students (TB. 3)	-	-	-	32.7	34.7	24.5	8.2
Students (TB. 4)	-	-	-	37.5	31.3	25	6.3
Teachers	100	0	0	33.3	50.0	16.7	0
Teachers (TB. 1)	-	-	-	44.4	33.3	22.2	0
Teachers (TB. 2)	-	-	-	50	25	25	0
Teachers (TB. 3)	-	-	-	0	100	0	0
Teachers (TB. 4)	-	-	-	0	100	0	0
Textbook Writers	100	0	0	100	0	0	0
Book Committee	100	0	0	50	25	25	0
Instructors	100	0	0	-	-	-	-

All groups of the participants stated that physics textbooks should assess understanding of key ideas and avoid allowing students a trivial way out, such as repeating a memorized term or phrase from the text without understanding. Although it changes from textbook to textbook, according to opinions of all groups of the participants except students, the analyzed textbooks maintained the stated characteristic (see Table 4.5.17).

All groups of the participants stated that the curriculum and the content should be evaluated according to the goals of the educational activities. Although it changes from textbook to textbook, all groups of the participants stated that the analyzed textbooks met the stated characteristic (see Table 4.5.18).

While all groups of the participants mentioned that physics textbooks should help teachers improve their understanding of science, mathematics, and technology necessary for teaching the material, most groups of the participants except book committee members stated that the analyzed textbooks do not meet the stated characteristic (see Table 4.5.19).

Table 4.5.17 Opinions of the participants about physics textbooks' assessment of understanding of key ideas

Subjects	Physics textbook should assess understanding of key ideas and avoid allowing students a trivial way out, such as repeating a memorized term or phrase from the text without understanding			Physics textbook assesses understanding of key ideas and avoid allowing students a trivial way out, such as repeating a memorized term or phrase from the text without understanding			
	Yes	No	Mis.	Yes	Par.	No	Mis.
	%	%	%	%	%	%	%
All students	75.3	19.6	5.1	29.9	31.3	31.6	7.1
Students (TB. 1)	-	-	-	20.7	47.9	30.2	1.2
Students (TB. 2)	-	-	-	33.6	22.4	33.9	10.1
Students (TB. 3)	-	-	-	28.6	40.8	22.4	8.2
Students (TB. 4)	-	-	-	50	25	25	0
Teachers	94.4	5.6	0	44.4	33.3	22.2	0
Teachers (TB. 1)	-	-	-	22.2	55.6	22.2	0
Teachers (TB. 2)	-	-	-	50	0	50	0
Teachers (TB. 3)	-	-	-	100	0	0	0
Teachers (TB. 4)	-	-	-	0	100	0	0
Textbook Writers	100	0	0	100	0	0	0
Book Committee	75	25	0	50	50	0	0
Instructors	100	0	0	-	-	-	-

Table 4.5.18 Opinions of the participants about assessment of key ideas in textbooks

Subjects	Assessment of key ideas should be done according to the goals of the educational activities in textbooks			Assessment of key ideas is done according to the goals of the educational activities in textbooks			
	Yes %	No %	Mis. %	Yes %	Par. %	No %	Mis. %
All students	83.9	11.7	4.4	25.5	38.1	27.4	9
Students (TB. 1)	-	-	-	26.6	50.9	21.3	1.2
Students (TB. 2)	-	-	-	22.7	30.5	34.2	12.6
Students (TB. 3)	-	-	-	36.7	46.9	8.2	8.2
Students (TB. 4)	-	-	-	43.8	43.8	0	12.5
Teachers	94.4	5.6	0	22.2	55.6	22.2	0
Teachers (TB. 1)	-	-	-	11.1	55.6	33.3	0
Teachers (TB. 2)	-	-	-	50	25	25	0
Teachers (TB. 3)	-	-	-	0	100	0	0
Teachers (TB. 4)	-	-	-	100	0	0	0
Textbook Writers	100	0	0	100	0	0	0
Book Committee	75	25	0	50	25	25	0
Instructors	100	0	0	-	-	-	-

Table 4.5.19 Opinions of the participants about physics textbooks' helping teachers to improve their understanding of science, mathematics, and technology necessary for teaching the material

Subjects	Physics textbook should help teachers improve their understanding of science, mathematics, and technology necessary for teaching the material			Physics textbook helps teachers improve their understanding of science, mathematics, and technology necessary for teaching the material			
	Yes	No	Mis.	Yes	Par.	No	Mis.
	%	%	%	%	%	%	%
All students	79	16.2	4.7	20.8	35.9	35.5	7.8
Students (TB. 1)	-	-	-	15.4	48.5	34.9	1.2
Students (TB. 2)	-	-	-	23.0	28.9	37.8	10.4
Students (TB. 3)	-	-	-	12.2	44.9	32.7	10.2
Students (TB. 4)	-	-	-	56.3	31.3	0	12.5
Teachers	94.4	5.6	0	11.1	55.6	33.3	0
Teachers (TB. 1)	-	-	-	11.1	44.4	44.4	0
Teachers (TB. 2)	-	-	-	0	50	50	0
Teachers (TB. 3)	-	-	-	0	100	0	0
Teachers (TB. 4)	-	-	-	100	0	0	0
Textbook Writers	100	0	0	0	25	75	0
Book Committee	75	25	0	0	75	25	0
Instructors	100	0	0	-	-	-	-

Physics textbooks should help teachers to create a classroom environment that welcomes student curiosity, rewards creativity, encourages a spirit of

healthy questioning, and avoids dogmatism according to all groups of the participants. Although it changes from textbook to textbook, only according to the textbook writers and most of the book committee members the analyzed textbooks maintained the stated characteristic (see Table 4.5.20).

Although all groups of the participants thought that physics textbook should help teachers to create a classroom environment that encourages high expectations for all students, enables all students to experience success, and provides all students a feeling of belonging in the science classroom, all groups of the participants except textbook writers' mentioned that the analyzed physics textbooks did not maintained the stated characteristic (see Table 4.5.21).

According to most of the students, visual materials should be up to date in an ideal physics textbook. In addition, although it changes from textbook to textbook visual material are up to date according to all groups of the participants (see Table 4.6.1).

Table 4.5.20 Opinions of the participants about classroom environment supported by textbooks

Subjects	Physics textbook should help teachers to create a classroom environment that welcomes student curiosity, rewards creativity, encourages a spirit of healthy questioning, and avoids dogmatism			Physics textbook helps teachers to create a classroom environment that welcomes student curiosity, rewards creativity, encourages a spirit of healthy questioning, and avoids dogmatism			
	Yes %	No %	Mis. %	Yes %	Par. %	No %	Mis. %
All students	77.5	17.9	4.6	20.5	34.7	36.9	8
Students (TB. 1)	-	-	-	14.8	45	39.1	1.2
Students (TB. 2)	-	-	-	22.1	26.9	39.8	11.2
Students (TB. 3)	-	-	-	22.4	51	18.4	8.2
Students (TB. 4)	-	-	-	37.5	50	6.3	6.3
Teachers	94.4	5.6	0	11.1	55.6	33.3	0
Teachers (TB. 1)	-	-	-	22.2	33.3	44.4	0
Teachers (TB. 2)	-	-	-	0	50	50	0
Teachers (TB. 3)	-	-	-	0	100	0	0
Teachers (TB. 4)	-	-	-	0	100	0	0
Textbook Writers	100	0	0	100	0	0	0
Book Committee	75	25	0	0	75	25	0
Instructors	100	0	0	-	-	-	-

Table 4.5.21 Opinions of the participants about the effect of classroom environment on students' successes provided by the textbooks

Subjects	Physics textbook should help teachers to create a classroom community that encourages high expectations for all students, enables all students to experience success, and provides all students a feeling of belonging in the science classroom			Physics textbook helps teachers to create a classroom community that encourages high expectations for all students, enables all students to experience success, and provides all students a feeling of belonging in the science classroom			
	Yes %	No %	Mis. %	Yes %	Par. %	No %	Mis. %
All students	84.6	10.3	5.1	20.5	44.2	26.1	9.3
Students (TB. 1)	-	-	-	11.8	52.7	34.3	1.2
Students (TB. 2)	-	-	-	23	38.1	25.5	13.4
Students (TB. 3)	-	-	-	18.4	63.3	10.2	8.2
Students (TB. 4)	-	-	-	62.5	31.3	0	6.3
Teachers	100	0	0	5.6	61.1	33.3	0
Teachers (TB. 1)	-	-	-	11.1	33.3	55.6	0
Teachers (TB. 2)	-	-	-	0	75	25	0
Teachers (TB. 3)	-	-	-	0	100	0	0
Teachers (TB. 4)	-	-	-	0	100	0	0
Textbook Writers	100	0	0	100	0	0	0
Book Committee	100	0	0	0	50	50	0
Instructors	100	0	0	-	-	-	-

Table 4.6.1 Opinions of the participants about up-to-dateness of the visual materials in the textbooks

Subjects	Visual materials should be up-to-date			Visual materials are up-to-date			
	Yes	No	Mis.	Yes	Par.	No	Mis.
	%	%	%	%	%	%	%
All students	87.8	7.4	4.7	21.2	45.2	25.9	7.8
Students (TB. 1)	-	-	-	20.1	56.2	22.5	1.2
Students (TB. 2)	-	-	-	19.6	39.8	31.9	8.7
Students (TB. 3)	-	-	-	16.3	57.1	2	24.5
Students (TB. 4)	-	-	-	81.3	12.5	0	6.3
Teachers	88.9	5.6	5.6	11.1	72.2	16.7	0
Teachers (TB. 1)	-	-	-	11.1	66.7	22.2	0
Teachers (TB. 2)	-	-	-	0	75	25	0
Teachers (TB. 3)	-	-	-	0	100	0	0
Teachers (TB. 4)	-	-	-	100	0	0	0
Textbook Writers	100	0	0	100	0	0	0
Book Committee	75	25	0	0	100	0	0
Instructors	100	0	0	-	-	-	-

Visual materials should be clear and in good quality as stated by all groups of the participants. However, according to most of the students visual materials were not clear and in good quality in the textbooks (see Table 4.6.2).

Table 4.6.2 Opinions of the participants about clarity and quality of visual materials in the textbooks

Subjects	Visual materials should be clear and in good quality			Visual materials are clear and in good quality			
	Yes	No	Mis.	Yes	Par.	No	Mis.
	%	%	%	%	%	%	%
All students	83.8	10.8	5.4	19.1	41.1	30.1	9.6
Students (TB. 1)	-	-	-	18.9	51.5	27.8	1.8
Students (TB. 2)	-	-	-	16.2	36.4	35	12.3
Students (TB. 3)	-	-	-	22.4	44.9	12.2	20.4
Students (TB. 4)	-	-	-	75	25	0	0
Teachers	88.9	5.6	5.6	22.2	61.1	16.7	0
Teachers (TB. 1)	-	-	-	33.3	44.4	22.2	0
Teachers (TB. 2)	-	-	-	0	75	25	0
Teachers (TB. 3)	-	-	-	0	100	0	0
Teachers (TB. 4)	-	-	-	100	0	0	0
Textbook Writers	100	0	0	100	0	0	0
Book Committee	75	25	0	25	75	0	0
Instructors	100	0	0	-	-	-	-

Visual materials should be related to written text and placed appropriately as stated by all groups of the participants. In addition, according to all groups of the participants, the analyzed physics textbooks were related to written text and placed appropriately (see Table 4.6.3).

Table 4.6.3 Opinions of the participants about placement and relation of visual materials to written text

Subjects	Visual materials should be related to written text and placed appropriately			Visual materials are related to written text and placed appropriately			
	Yes	No	Mis.	Yes	Par.	No	Mis.
	%	%	%	%	%	%	%
All students	83.1	12.2	4.7	39.4	34.2	17.9	8.5
Students (TB. 1)	-	-	-	39.6	40.2	18.3	1.8
Students (TB. 2)	-	-	-	38.9	31.7	18.5	10.9
Students (TB. 3)	-	-	-	28.6	38.8	16.3	16.3
Students (TB. 4)	-	-	-	81.3	12.5	6.3	0
Teachers	94.4	0	5.6	33.3	61.1	5.6	0
Teachers (TB. 1)	-	-	-	33.3	55.6	11.1	0
Teachers (TB. 2)	-	-	-	50	50	0	0
Teachers (TB. 3)	-	-	-	0	100	0	0
Teachers (TB. 4)	-	-	-	100	0	0	0
Textbook Writers	100	0	0	100	0	0	0
Book Committee	100	0	0	50	25	25	0
Instructors	100	0	0	-	-	-	-

Visual materials should be beneficial for teaching according to all groups of the participants. In addition, all groups of the participants reported that visual materials in the textbooks were beneficial for teaching (see Table 4.6.4).

Table 4.6.4 Opinions of the participants about visual materials benefit for teaching

Subjects	Visual materials should be beneficial for teaching			Visual materials are beneficial for teaching			
	Yes	No	Mis.	Yes	Par.	No	Mis.
	%	%	%	%	%	%	%
All students	80.7	11.5	7.8	31.5	40.3	17.9	10.3
Students (TB. 1)	-	-	-	40.8	36.7	17.8	4.8
Students (TB. 2)	-	-	-	25.2	44.3	18.5	12
Students (TB. 3)	-	-	-	30.6	32.7	18.4	18.3
Students (TB. 4)	-	-	-	75	12.5	6.3	6.3
Teachers	94.4	0	5.6	55.6	44.4	0	0
Teachers (TB. 1)	-	-	-	33.3	66.7	0	0
Teachers (TB. 2)	-	-	-	50	50	0	0
Teachers (TB. 3)	-	-	-	100	0	0	0
Teachers (TB. 4)	-	-	-	100	0	0	0
Textbook Writers	100	0	0	100	0	0	0
Book Committee	100	0	0	50	50	0	0
Instructors	100	0	0	-	-	-	-

Shapes, graphs and schemes should be clear, comprehensible and appropriate to students' level according to all groups of the participants. They stated that shapes, graphs and schemes in the textbooks were clear, comprehensible and appropriate to students' level (see Table 4.6.5).

Table 4.6.5 Opinions of the participants about clarity, comprehensibility and appropriateness of shapes, graphs and schemes to students' level

Subjects	Shapes, graphs and schemes should be clear, comprehensible and appropriate to students' level			Shapes, graphs and schemes are clear, comprehensible and appropriate to students' level			
	Yes %	No %	Mis. %	Yes %	Par. %	No %	Mis. %
All students	86.5	8.8	4.7	31.5	40.3	21.5	6.8
Students (TB. 1)	-	-	-	34.3	43.8	20.7	1.2
Students (TB. 2)	-	-	-	28.9	38.9	24.1	8.1
Students (TB. 3)	-	-	-	24.5	46.9	12.2	6.1
Students (TB. 4)	-	-	-	81.3	12.5	0	6.3
Teachers	94.4	0	5.6	27.8	61.1	11.1	0
Teachers (TB. 1)	-	-	-	22.2	66.7	11.1	0
Teachers (TB. 2)	-	-	-	50	25	25	0
Teachers (TB. 3)	-	-	-	0	100	0	0
Teachers (TB. 4)	-	-	-	100	0	0	0
Textbook Writers	100	0	0	100	0	0	0
Book Committee	100	0	0	50	50	0	0
Instructors	100	0	0	-	-	-	-

According to all groups of the participants, shapes, graphs, and schemes should be explained. In addition, shapes, graphs, and schemes in the analyzed textbooks were explained as stated by all groups of the participants (see Table 4.6.6).

Table 4.6.6 Opinions of the participants about explanation of shapes, graphs, and schemes

Subjects	Shapes, graphs, and schemes should be explained			Shapes, graphs, and schemes are explained			
	Yes	No	Mis.	Yes	Par.	No	Mis.
	%	%	%	%	%	%	%
All students	83.2	12.4	4.4	30.5	35.7	26.9	6.9
Students (TB. 1)	-	-	-	34.9	43.2	20.1	1.8
Students (TB. 2)	-	-	-	27.7	31.1	32.8	8.4
Students (TB. 3)	-	-	-	18.4	49	16.3	16.3
Students (TB. 4)	-	-	-	81.3	18.8	0	0
Teachers	94.4	0	5.6	33.3	66.7	0	0
Teachers (TB. 1)	-	-	-	33.3	66.7	0	0
Teachers (TB. 2)	-	-	-	50	50	0	0
Teachers (TB. 3)	-	-	-	0	100	0	0
Teachers (TB. 4)	-	-	-	100	0	0	0
Textbook Writers	100	0	0	100	0	0	0
Book Committee	100	0	0	50	50	0	0
Instructors	100	0	0	-	-	-	-

Questions should be well-prepared and suitable for revision of the given lesson according to all groups of the participants. However, most of the teachers' opinions about the analyzed textbooks were fairly positive than opinions of most of the students (see Table 4.7.1).

Table 4.7.1 Opinions of the participants about properties of questions

Subjects	Questions should be well-prepared and suitable for revision of the given lesson			Questions are well-prepared and suitable for revision of the given lesson			
	Yes	No	Mis.	Yes	Par.	No	Mis.
	%	%	%	%	%	%	%
All students	87.6	8.1	4.2	31.6	38.1	23.7	6.6
Students (TB. 1)	-	-	-	32	45.6	21.3	1.2
Students (TB. 2)	-	-	-	30.5	32.8	28.6	8.1
Students (TB. 3)	-	-	-	26.5	53.1	4.1	16.3
Students (TB. 4)	-	-	-	68.8	31.3	0	0
Teachers	100	0	0	33.3	61.1	5.6	0
Teachers (TB. 1)	-	-	-	33.3	66.7	0	0
Teachers (TB. 2)	-	-	-	50	25	25	0
Teachers (TB. 3)	-	-	-	0	100	0	0
Teachers (TB. 4)	-	-	-	100	0	0	0
Textbook Writers	100	0	0	100	0	0	0
Book Committee	100	0	0	50	50	0	0
Instructors	100	0	0	-	-	-	-

Word list should be suitable and beneficial as stated by all groups of the participants. However, different from other groups of the participants, most of the students stated that word lists of the analyzed physics textbooks are not suitable and beneficial (see Table 4.7.2).

Table 4.7.2 Opinions of the participants about word lists in the textbooks

Subjects	Word list should be suitable and beneficial			Word list is suitable and beneficial			
	Yes	No	Mis.	Yes	Par.	No	Mis.
	%	%	%	%	%	%	%
All students	80.7	13	6.3	21.3	35.5	36	7.1
Students (TB. 1)	-	-	-	8.9	30.8	59.2	1.2
Students (TB. 2)	-	-	-	23	31.9	36.1	9
Students (TB. 3)	-	-	-	28.6	40.8	14.3	16.3
Students (TB. 4)	-	-	-	81.3	12.5	6.3	0
Teachers	94.4	5.6	0	22.2	72.2	5.6	0
Teachers (TB. 1)	-	-	-	33.3	66.7	0	0
Teachers (TB. 2)	-	-	-	0	75	25	0
Teachers (TB. 3)	-	-	-	0	100	0	0
Teachers (TB. 4)	-	-	-	100	0	0	0
Textbook Writers	100	0	0	100	0	0	0
Book Committee	75	25	0	50	50	0	0
Instructors	100	0	0	-	-	-	-

Suggested activities and projects should encourage and urge students to think according to all groups of the participants. However, high proportion of the students thought that suggested activities and projects do not encourage and urge students to think (see Table 4.7.3).

Table 4.7.3 Opinions of the participants about suggested activities and projects

Subjects	Suggested activities and projects should encourage and urge students to think			Suggested activities and projects encourage and urge students to think			
	Yes	No	Mis.	Yes	Par.	No	Mis.
	%	%	%	%	%	%	%
All students	78.7	17.1	4.2	17.4	37.2	36.9	8.5
Students (TB. 1)	-	-	-	11.8	32	54.4	1.8
Students (TB. 2)	-	-	-	18.5	37.5	33.1	10.9
Students (TB. 3)	-	-	-	22.4	44.9	16.3	16.3
Students (TB. 4)	-	-	-	37.5	62.5	0	0
Teachers	100	0	0	0	72.2	27.8	0
Teachers (TB. 1)	-	-	-	0	55.6	44.4	0
Teachers (TB. 2)	-	-	-	0	75	25	0
Teachers (TB. 3)	-	-	-	0	100	0	0
Teachers (TB. 4)	-	-	-	0	100	0	0
Textbook Writers	100	0	0	100	0	0	0
Book Committee	100	0	0	0	75	25	0
Instructors	100	0	0	-	-	-	-

Suggested activities should include harmless materials that can be accessed easily according to all groups of the participants. In addition, most of the students' opinions about the materials used in the activities in the analyzed textbooks were more negative than the other groups of the participants' opinions (see Table 4.7.4).

Table 4.7.4 Opinions of the participants about materials used in suggested activities in the textbooks

Subjects	Suggested activities should include harmless materials that can be accessed easily			Suggested activities include harmless materials that can be accessed easily			
	Yes	No	Mis.	Yes	Par.	No	Mis.
	%	%	%	%	%	%	%
All students	78.2	15.9	5.9	26.2	37.2	27.9	8.6
Students (TB. 1)	-	-	-	25.4	45	23.1	6.6
Students (TB. 2)	-	-	-	27.2	33.9	30	9
Students (TB. 3)	-	-	-	14.3	32.7	36.7	16.3
Students (TB. 4)	-	-	-	50	43.8	6.3	0
Teachers	94.4	5.6	0	38.9	55.6	5.6	0
Teachers (TB. 1)	-	-	-	33.3	66.7	0	0
Teachers (TB. 2)	-	-	-	0	75	25	0
Teachers (TB. 3)	-	-	-	100	0	0	0
Teachers (TB. 4)	-	-	-	0	100	0	0
Textbook Writers	100	0	0	100	0	0	0
Book Committee	75	25	0	25	75	0	0
Instructors	100	0	0	-	-	-	-

Ideal physics textbooks should include unit tests according to all groups of the participants. However, 1 out of 4 students do not agree with this (see Table 4.7.5).

Table 4.7.5 Opinions of the participants about tests of subject units in the textbooks

Subjects	Textbook should include tests for each subject unit			Textbook includes tests for each subject unit			
	Yes	No	Mis.	Yes	Par.	No	Mis.
	%	%	%	%	%	%	%
All students	79.7	14	6.3	44.3	26.6	20.5	8.6
Students (TB. 1)	-	-	-	56.8	28.4	10.7	4.2
Students (TB. 2)	-	-	-	36.4	26.1	27.5	10.1
Students (TB. 3)	-	-	-	42.9	30.6	10.2	16.3
Students (TB. 4)	-	-	-	93.8	6.3	0	0
Teachers	100	0	0	72.2	27.8	0	0
Teachers (TB. 1)	-	-	-	88.9	11.1	0	0
Teachers (TB. 2)	-	-	-	100	0	0	0
Teachers (TB. 3)	-	-	-	0	100	0	0
Teachers (TB. 4)	-	-	-	100	0	0	0
Textbook Writers	100	0	0	100	0	0	0
Book Committee	100	0	0	100	0	0	0
Instructors	100	0	0	-	-	-	-

As stated by all groups of the participants, physics textbooks should include materials list for laboratory program. However, according to important portion of students and book committee members, the analyzed textbooks do not include materials list for laboratory program (see Table 4.7.6).

Table 4.7.6 Opinions of the participants about materials list of the textbooks

Subjects	Textbook should include materials list for laboratory program			Textbook includes materials list for laboratory program			
	Yes	No	Mis.	Yes	Par.	No	Mis.
	%	%	%	%	%	%	%
All students	77.3	18.3	4.4	33.8	25.9	32.8	7.4
Students (TB. 1)	-	-	-	35.5	21.9	41.4	1.2
Students (TB. 2)	-	-	-	33.6	26.1	30.8	9.5
Students (TB. 3)	-	-	-	24.5	32.7	26.5	16.3
Students (TB. 4)	-	-	-	50	43.8	6.3	0
Teachers	100	0	0	27.8	44.4	27.8	0
Teachers (TB. 1)	-	-	-	44.4	33.3	22.2	0
Teachers (TB. 2)	-	-	-	25	25	50	0
Teachers (TB. 3)	-	-	-	0	100	0	0
Teachers (TB. 4)	-	-	-	100	0	0	0
Textbook Writers	100	0	0	100	0	0	0
Book Committee	100	0	0	25	25	50	0
Instructors	100	0	0	-	-	-	-

All groups of the participants stated that physics textbooks should suggest library source materials; however, the analyzed textbooks did not suggest the sources (see Table 4.7.7).

Table 4.7.7 Opinions of the participants about library source materials in the textbooks

Subjects	Textbook should suggest library source materials			Textbook suggests library source materials			
	Yes	No	Mis.	Yes	Par.	No	Mis.
	%	%	%	%	%	%	%
All students	77.7	17.9	4.4	20	29.8	43.1	7.1
Students (TB. 1)	-	-	-	8.9	30.8	59.2	1.2
Students (TB. 2)	-	-	-	23	29.1	38.9	9
Students (TB. 3)	-	-	-	22.4	30.6	30.6	16.3
Students (TB. 4)	-	-	-	62.5	31.3	6.3	0
Teachers	88.9	11.1	0	0	33.3	66.7	0
Teachers (TB. 1)	-	-	-	0	22.2	77.8	0
Teachers (TB. 2)	-	-	-	0	0	100	0
Teachers (TB. 3)	-	-	-	0	100	0	0
Teachers (TB. 4)	-	-	-	100	0	0	0
Textbook Writers	75	25	0	100	0	0	0
Book Committee	75	25	0	0	25	75	0
Instructors	100	0	0	-	-	-	-

Objectives given at the beginning of the units and evaluation questions at the end of the units should complement each other in terms of content and level according to all groups of the participants. Although it changes from textbook to textbook, all groups of the participants stated that the objectives and evaluation questions in the textbooks complement each other in term of content and level (see Table 4.7.8).

Table 4.7.8 Opinions of the participants about matching of the objectives with the evaluation questions

Subjects	Objectives given at the beginning of the units and evaluation questions at the end of the units should complement each other in terms of content and level			Objectives given at the beginning of the units and evaluation questions at the end of the units complement each other in terms of content and level			
	Yes %	No %	Mis. %	Yes %	Par. %	No %	Mis. %
All students	85.6	10.3	4.1	22.7	42.5	27.1	7.8
Students (TB. 1)	-	-	-	23.1	56.8	17.2	3
Students (TB. 2)	-	-	-	22.1	34.7	34.2	9
Students (TB. 3)	-	-	-	20.4	49	14.3	16.3
Students (TB. 4)	-	-	-	37.5	43.8	12.5	6.3
Teachers	94.4	5.6	0	16.7	66.7	16.7	0
Teachers (TB. 1)	-	-	-	11.1	55.6	33.3	0
Teachers (TB. 2)	-	-	-	50	50	0	0
Teachers (TB. 3)	-	-	-	0	100	0	0
Teachers (TB. 4)	-	-	-	0	100	0	0
Textbook Writers	100	0	0	100	0	0	0
Book Committee	75	25	0	50	25	25	0
Instructors	100	0	0	-	-	-	-

Textbooks should include examples with solutions to improve students' cognitive abilities according to all groups of the participants. In general, the

analyzed physics textbooks maintained the stated characteristic according to all groups of the participants (see Table 4.7.9).

Table 4.7.9 Opinions of the participants about solved examples in textbooks

Subjects	Textbooks should include examples with solutions to improve students' cognitive abilities			Textbooks include examples with solutions to improve students' cognitive abilities			
	Yes	No	Mis.	Yes	Par.	No	Mis.
	%	%	%	%	%	%	%
All students	78.2	16.2	5.6	26.1	43	23.5	7.4
Students (TB. 1)	-	-	-	27.2	51.5	19.5	1.8
Students (TB. 2)	-	-	-	24.6	40.3	26.1	9
Students (TB. 3)	-	-	-	20.4	36.7	26.5	16.3
Students (TB. 4)	-	-	-	62.5	31.3	0	6.3
Teachers	94.4	5.6	0	22.2	66.7	11.1	0
Teachers (TB. 1)	-	-	-	33.3	66.7	0	0
Teachers (TB. 2)	-	-	-	0	50	50	0
Teachers (TB. 3)	-	-	-	0	100	0	0
Teachers (TB. 4)	-	-	-	100	0	0	0
Textbook Writers	100	0	0	100	0	0	0
Book Committee	75	25	0	25	75	0	0
Instructors	100	0	0	-	-	-	-

Level of questions in the textbook should match the level of questions in the university entrance exam according to all groups of the participants, however

the analyzed textbooks did not meet the teachers' expectations about the stated characteristics (see Table 4.7.10).

Table 4.7.10 Opinions of the participants about match of level of questions in the textbook and level of questions in the university entrance exam

Subjects	Level of questions in the textbook should match the level of questions in the university entrance exam			Level of questions in the textbook matches the level of questions in the university entrance exam			
	Yes %	No %	Mis. %	Yes %	Par. %	No %	Mis. %
All students	82.6	12.9	4.6	30.6	36.7	25.2	7.4
Students (TB. 1)	-	-	-	28.4	50.9	18.9	1.8
Students (TB. 2)	-	-	-	31.4	30	29.7	9
Students (TB. 3)	-	-	-	18.4	42.9	22.4	16.3
Students (TB. 4)	-	-	-	75	18.8	0	6.3
Teachers	100	0	0	16.7	55.6	27.8	0
Teachers (TB. 1)	-	-	-	22.2	33.3	44.4	0
Teachers (TB. 2)	-	-	-	0	75	25	0
Teachers (TB. 3)	-	-	-	0	100	0	0
Teachers (TB. 4)	-	-	-	100	0	0	0
Textbook Writers	100	0	0	100	0	0	0
Book Committee	100	0	0	25	50	25	0
Instructors	100	0	0	-	-	-	-

All groups of the participants stated that in addition to solving mathematical questions, questions in textbooks should make students think, comment on, and explore. Although it changes from textbook to textbook, in addition to solving mathematical questions, questions in textbooks make students think, comment on, and explore according to all groups of the participants (see Table 4.7.11).

Level of questions in the textbooks should be appropriate to level of each student according to all groups of the participants. However, important portion of teachers, who analyzed TB. 2, stated that the questions in the textbooks do not appropriate to the level of each student (see Table 4.7.12).

Questions should be ordered from easy to difficult according to all groups of the participants. In addition, analyzed physics textbooks maintained this characteristic according to all groups of the participants (see Table 4.7.13).

Questions should help students to revise subjects and to internalize them according to all groups of the participants; however the analyzed textbooks did not meet most of the teachers' willingness about the stated characteristics (see Table 4.7.14).

Table 4.7.11 Opinions of the participants about questions in textbooks that make students think, comment on, and explore

Subjects	In addition to solving mathematical questions, questions in textbooks should make students think, comment on, and explore			In addition to solving mathematical questions, questions in textbooks make students think, comment on, and explore			
	Yes	No	Mis.	Yes	Par.	No	Mis.
	%	%	%	%	%	%	%
All students	76.1	17.9	5.9	22.7	40.9	29.1	7.3
Students (TB. 1)	-	-	-	24.3	49.1	25.4	1.2
Students (TB. 2)	-	-	-	19.9	37.3	33.9	9
Students (TB. 3)	-	-	-	24.5	42.9	16.3	16.3
Students (TB. 4)	-	-	-	62.5	31.3	0	6.3
Teachers	100	0	0	27.8	55.6	16.7	0
Teachers (TB. 1)	-	-	-	22.2	55.6	22.2	0
Teachers (TB. 2)	-	-	-	50	25	25	0
Teachers (TB. 3)	-	-	-	0	100	0	0
Teachers (TB. 4)	-	-	-	100	0	0	0
Textbook Writers	100	0	0	100	0	0	0
Book Committee	100	0	0	75	25	0	0
Instructors	100	0	0	-	-	-	-

Table 4.7.12 Opinions of the participants about availability of questions appropriate to the level of each student

Subjects	Textbooks should include questions appropriate to the level of each student			Textbook includes questions appropriate to the level of each student			
	Yes	No	Mis.	Yes	Par.	No	Mis.
	%	%	%	%	%	%	%
All students	79.4	16.2	4.4	27.2	42.8	21	9
Students (TB. 1)	-	-	-	12.4	55.6	29.6	2.4
Students (TB. 2)	-	-	-	32.5	37.8	18.5	11.2
Students (TB. 3)	-	-	-	26.5	40.8	16.3	16.3
Students (TB. 4)	-	-	-	68.8	25	0	6.3
Teachers	94.4	5.6	0	16.7	72.2	11.1	0
Teachers (TB. 1)	-	-	-	22.2	77.8	0	0
Teachers (TB. 2)	-	-	-	0	50	50	0
Teachers (TB. 3)	-	-	-	0	100	0	0
Teachers (TB. 4)	-	-	-	100	0	0	0
Textbook Writers				100	0	0	0
Book Committee				25	75	0	0
Instructors				-	-	-	-

Table 4.7.13 Opinions of the participants about order of questions in textbooks

Subjects	Questions should be ordered from easy to difficult			Questions should be ordered from easy to difficult			
	Yes	No	Mis.	Yes	Par.	No	Mis.
	%	%	%	%	%	%	%
All students	75.1	19	5.9	23.2	39.9	29.3	7.6
Students (TB. 1)	-	-	-	29.6	42.6	26.6	1.2
Students (TB. 2)	-	-	-	18.2	40.3	31.9	9.5
Students (TB. 3)	-	-	-	22.4	34.7	26.5	16.3
Students (TB. 4)	-	-	-	68.8	18.8	6.3	6.3
Teachers	100	0	0	22.2	66.7	11.1	0
Teachers (TB. 1)	-	-	-	22.2	55.6	22.2	0
Teachers (TB. 2)	-	-	-	25	75	0	0
Teachers (TB. 3)	-	-	-	0	100	0	0
Teachers (TB. 4)	-	-	-	100	0	0	0
Textbook Writers	100	0	0	100	0	0	0
Book Committee	100	0	0	25	50	25	0
Instructors	100	0	0	-	-	-	-

Table 4.7.14 Opinions of the participants about help of questions in revision and internalization of subjects

Subjects	Questions should help students to revise subjects and to internalize them			Questions help students to revise subjects and to internalize them			
	Yes	No	Mis.	Yes	Par.	No	Mis.
	%	%	%	%	%	%	%
All students	81.7	14	4.2	31.6	38.1	22.3	8
Students (TB. 1)	-	-	-	34.9	46.7	17.2	1.2
Students (TB. 2)	-	-	-	28.6	34.2	27.2	10.1
Students (TB. 3)	-	-	-	32.7	40.8	10.2	16.3
Students (TB. 4)	-	-	-	62.5	25	6.3	6.3
Teachers	100	0	0	33.3	38.9	27.8	0
Teachers (TB. 1)	-	-	-	33.3	33.3	33.3	0
Teachers (TB. 2)	-	-	-	50	0	50	0
Teachers (TB. 3)	-	-	-	0	100	0	0
Teachers (TB. 4)	-	-	-	100	0	0	0
Textbook Writers				100	0	0	0
Book Committee				50	25	25	0
Instructors				-	-	-	-

All groups of the participants stated that test items should be prepared according to the measurement techniques. However, 1 out of 4 students thought that test items in the analyzed physics textbooks were not prepared according to the measurement techniques (see Table 4.7.15).

Table 4.7.15 Opinions of the participants about preparation of the test items according to measurement techniques

Subjects	Test items should be prepared according to the measurement techniques			Test items are prepared according to the measurement techniques			
	Yes	No	Mis.	Yes	Par.	No	Mis.
	%	%	%	%	%	%	%
All students	77.2	18.6	4.2	19.6	46.5	26.1	7.8
Students (TB. 1)	-	-	-	13.6	53.8	29.6	3
Students (TB. 2)	-	-	-	21	42.3	27.7	9
Students (TB. 3)	-	-	-	18.4	57.1	8.2	16.3
Students (TB. 4)	-	-	-	56.3	31.3	6.3	6.3
Teachers	94.4	5.6	0	27.8	55.6	16.7	0
Teachers (TB. 1)	-	-	-	22.2	55.6	22.2	0
Teachers (TB. 2)	-	-	-	50	25	25	0
Teachers (TB. 3)	-	-	-	0	100	0	0
Teachers (TB. 4)	-	-	-	100	0	0	0
Textbook Writers	100	0	0	100	0	0	0
Book Committee	75	25	0	50	50	0	0
Instructors	100	0	0	-	-	-	-

Answer keys of tests should be provided in physics textbooks according to all groups of the participants. In addition, most of the participants stated that answer keys are available in the analyzed textbooks (see Table 4.7.16).

Table 4.7.16 Opinions of the participants about answer keys in textbooks

Subjects	Answer keys of tests should be provided			Answer keys of tests are provided			
	Yes	No	Mis.	Yes	Par.	No	Mis.
	%	%	%	%	%	%	%
All students	76.3	17.9	5.8	42	31.5	17.8	8.8
Students (TB. 1)	-	-	-	57.4	23.7	17.8	1.2
Students (TB. 2)	-	-	-	32.8	37	18.8	11.5
Students (TB. 3)	-	-	-	44.9	26.5	12.2	16.3
Students (TB. 4)	-	-	-	75	6.3	12.5	6.3
Teachers	94.4	5.6	0	61.1	38.9	0	0
Teachers (TB. 1)	-	-	-	77.8	22.2	0	0
Teachers (TB. 2)	-	-	-	75	25	0	0
Teachers (TB. 3)	-	-	-	0	100	0	0
Teachers (TB. 4)	-	-	-	100	0	0	0
Textbook Writers	100	0	0	100	0	0	0
Book Committee	75	25	0	75	25	0	0
Instructors	100	0	0	-	-	-	-

Although all groups of the participants stated that laboratory activities should be appropriate to students' cognitive abilities, according to important portion of the students and teachers TB. 2 do not maintained the stated characteristic (see Table 4.8.1).

Table 4.8.1 Opinions of the participants about appropriateness of laboratory activities to students' cognitive abilities

Subjects	Laboratory activities should be appropriate to students' cognitive abilities			Laboratory activities are appropriate to students' cognitive abilities			
	Yes	No	Mis.	Yes	Par.	No	Mis.
	%	%	%	%	%	%	%
All students	89.8	7.8	2.4	23.5	43	27.2	6.3
Students (TB. 1)	-	-	-	29.6	43.8	24.9	1.8
Students (TB. 2)	-	-	-	20.7	39.8	31.1	8.4
Students (TB. 3)	-	-	-	14.3	65.3	12.2	8.2
Students (TB. 4)	-	-	-	50	37.5	12.5	0
Teachers	100	0	0	16.7	66.7	11.1	5.6
Teachers (TB. 1)	-	-	-	33.3	66.7	0	0
Teachers (TB. 2)	-	-	-	0	50	50	0
Teachers (TB. 3)	-	-	-	0	100	0	0
Teachers (TB. 4)	-	-	-	0	0	0	100
Textbook Writers	100	0	0	75	0	25	0
Book Committee	100	0	0	50	50	0	0
Instructors	100	0	0	-	-	-	-

All groups of the participants reported that laboratory activities should include hand-work tasks that are appropriate to level of students. Although it changes from textbook to textbook, all groups of the participants stated that laboratory activities include hand-work tasks that are appropriate to level of students (see Table 4.8.2).

Table 4.8.2 Opinions of the participants about appropriatenes of hand-work tasks in laboratory activities

Subjects	Laboratory activities should include hand-work tasks that are appropriate to level of students			Laboratory activities include hand-work tasks that are appropriate to level of students			
	Yes %	No %	Mis. %	Yes %	Par. %	No %	Mis. %
All students	77.5	19.5	3	19.1	45.7	29.9	5.2
Students (TB. 1)	-	-	-	12.4	48.5	37.3	0.6
Students (TB. 2)	-	-	-	21	42.9	29.4	6.7
Students (TB. 3)	-	-	-	18.4	59.2	14.3	8.2
Students (TB. 4)	-	-	-	50	37.5	12.5	0
Teachers	94.4	5.6	0	11.1	55.6	27.8	5.6
Teachers (TB. 1)	-	-	-	22.2	44.4	33.3	0
Teachers (TB. 2)	-	-	-	0	50	50	0
Teachers (TB. 3)	-	-	-	0	100	0	0
Teachers (TB. 4)	-	-	-	0	0	0	100
Textbook Writers	100	0	0	75	0	25	0
Book Committee	75	25	0	25	50	25	0
Instructors	100	0	0	-	-	-	-

Laboratory activities should urge students to explore according to all groups of the participants. However, important proportion of students (%41.5) stated that laboratory activities do not urge students to explore, which could not be discarded (see Table 4.8.3).

Table 4.8.3 Opinions of the participants about laboratory activities' urge of students to explore

Subjects	Laboratory activities should urge students to explore			Laboratory activities urge students to explore			
	Yes	No	Mis.	Yes	Par.	No	Mis.
	%	%	%	%	%	%	%
All students	85.1	12.4	2.5	17.1	36.7	41.5	4.7
Students (TB. 1)	-	-	-	9.5	41.4	47.3	1.8
Students (TB. 2)	-	-	-	19.6	31.9	42.6	5.9
Students (TB. 3)	-	-	-	14.3	55.1	22.4	8.2
Students (TB. 4)	-	-	-	50	37.5	12.5	0
Teachers	94.4	5.6	0	16.7	50.0	27.8	5.6
Teachers (TB. 1)	-	-	-	33.3	22.2	44.4	0
Teachers (TB. 2)	-	-	-	0	75	25	0
Teachers (TB. 3)	-	-	-	0	100	0	0
Teachers (TB. 4)	-	-	-	0	0	0	100
Textbook Writers	100	0	0	75	0	25	0
Book Committee	75	25	0	25	50	25	0
Instructors	100	0	0	-	-	-	-

All groups of the participants stated that student activities done in laboratories should not run the risk of danger. In addition, according to all groups of the participants, student activities done in laboratories did not run the risk of danger (see Table 4.8.4).

Table 4.8.4 Opinions of the participants about risk of danger of laboratory activities

Subjects	Student activities done in laboratories should not run the risk of danger			Student activities done in laboratories do not run the risk of danger			
	Yes	No	Mis.	Yes	Par.	No	Mis.
	%	%	%	%	%	%	%
All students	83.6	13.7	2.7	26.7	47.4	19.5	6.4
Students (TB. 1)	-	-	-	36.1	46.7	15.4	1.8
Students (TB. 2)	-	-	-	19	49.3	23	8.7
Students (TB. 3)	-	-	-	36.7	46.9	8.2	8.2
Students (TB. 4)	-	-	-	68.8	12.5	18.8	0
Teachers	94.4	5.6	0	66.7	16.7	11.1	5.6
Teachers (TB. 1)	-	-	-	55.6	33.3	11.1	0
Teachers (TB. 2)	-	-	-	75	0	25	0
Teachers (TB. 3)	-	-	-	100	0	0	0
Teachers (TB. 4)	-	-	-	0	0	0	100
Textbook Writers	100	0	0	75	0	25	0
Book Committee	75	25	0	50	25	25	0
Instructors	100	0	0	-	-	-	-

Although all groups of the participants stated that suggested materials and equipments should be available in physics textbooks, the analyzed textbooks did not meet students' and teachers' expectations about the stated characteristics according to students and teachers (see Table 4.8.5).

Table 4.8.5 Opinions of the participants about suggested materials and equipments

Subjects	Suggested materials and equipments should be available			Suggested materials and equipments are available			
	Yes	No	Mis.	Yes	Par.	No	Mis.
	%	%	%	%	%	%	%
All students	87.1	10.3	2.5	24.9	39.6	28.8	6.8
Students (TB. 1)	-	-	-	16.6	53.8	27.2	2.4
Students (TB. 2)	-	-	-	25.5	33.3	32.5	8.7
Students (TB. 3)	-	-	-	34.7	38.8	16.3	10.2
Students (TB. 4)	-	-	-	68.8	31.3	0	0
Teachers	100	0	0	16.7	66.7	11.1	5.6
Teachers (TB. 1)	-	-	-	33.3	66.7	0	0
Teachers (TB. 2)	-	-	-	0	50	50	0
Teachers (TB. 3)	-	-	-	0	100	0	0
Teachers (TB. 4)	-	-	-	0	0	0	100
Textbook Writers	100	0	0	75	0	25	0
Book Committee	100	0	0	25	75	0	0
Instructors	100	0	0	-	-	-	-

Laboratory activities should be related to presented content as stated by all groups of the participants. Although it changes from textbook to textbook, laboratory activities of the analyzed physics textbooks are related to presented content according to all groups of the participants (see Table 4.8.6).

Table 4.8.6 Opinions of the participants about relation of laboratory activities with content

Subjects	Laboratory activities should be related to presented content			Laboratory activities are related to presented content			
	Yes	No	Mis.	Yes	Par.	No	Mis.
	%	%	%	%	%	%	%
All students	79.7	17.6	2.7	32.7	37.9	24.5	4.9
Students (TB. 1)	-	-	-	48.5	34.9	14.8	1.8
Students (TB. 2)	-	-	-	24.4	38.9	30.5	6.2
Students (TB. 3)	-	-	-	28.6	42.9	20.4	8.2
Students (TB. 4)	-	-	-	62.5	31.3	6.3	0
Teachers	94.4	5.6	0	44.4	44.4	5.6	5.6
Teachers (TB. 1)	-	-	-	55.6	44.4	0	0
Teachers (TB. 2)	-	-	-	75	0	25	0
Teachers (TB. 3)	-	-	-	0	100	0	0
Teachers (TB. 4)	-	-	-	0	0	0	100
Textbook Writers	100	0	0	75	0	25	0
Book Committee	75	25	0	50	50	0	0
Instructors	100	0	0	-	-	-	-

Laboratory activities should be placed in laboratory handbook according to most of the instructors. However, according to other groups of the participants, place of the laboratory activities did not important (see Table 4.8.7 and Table 4.8.8).

Table 4.8.7 Opinions of the participants about placement of laboratory activities in textbooks

Subjects	Laboratory activities should be placed in the textbook			Laboratory activities are placed in the textbook			
	Yes	No	Mis.	Yes	Par.	No	Mis.
	%	%	%	%	%	%	%
All students	79.5	15.7	4.7	32.3	36.4	24	7.3
Students (TB. 1)	-	-	-	46.2	29.6	19.5	4.8
Students (TB. 2)	-	-	-	25.2	38.9	27.5	8.4
Students (TB. 3)	-	-	-	26.5	40.8	22.4	10.2
Students (TB. 4)	-	-	-	62.5	37.5	0	0
Teachers	83.3	16.7	0	50.0	38.9	5.6	5.6
Teachers (TB. 1)	-	-	-	66.7	33.3	0	0
Teachers (TB. 2)	-	-	-	75	0	25	0
Teachers (TB. 3)	-	-	-	0	100	0	0
Teachers (TB. 4)	-	-	-	0	0	0	100
Textbook Writers	100	0	0	100	0	0	0
Book Committee	75	25	0	75	25	0	0
Instructors	33.3	66.7	0	-	-	-	-

Table 4.8.8 Opinions of the participants about placement of laboratory activities in laboratory handbook

Subjects	Laboratory activities should be placed in laboratory handbook			Laboratory activities are placed in laboratory handbook			
	Yes	No	Mis.	Yes	Par.	No	Mis.
	%	%	%	%	%	%	%
All students	76.3	20.3	3.4	17.9	26.2	50.4	5.4
Students (TB. 1)	-	-	-	6.5	23.7	68	1.8
Students (TB. 2)	-	-	-	20.7	26.1	46.2	7
Students (TB. 3)	-	-	-	22.4	38.8	30.6	8.2
Students (TB. 4)	-	-	-	62.5	18.8	18.8	0
Teachers	77.8	22.2	0	0	38.9	55.6	5.6
Teachers (TB. 1)	-	-	-	0	33.3	66.7	0
Teachers (TB. 2)	-	-	-	0	0	100	0
Teachers (TB. 3)	-	-	-	0	0	100	0
Teachers (TB. 4)	-	-	-	0	0	0	100
Textbook Writers	75	25	0	0	0	100	0
Book Committee	50	50	0	0	25	75	0
Instructors	66.7	33.3	0	-	-	-	-

Laboratory activities should be appropriate to utilize at any stage of the lesson according to teachers' preferences according to all groups of the participants. On the other hand, most of the teachers' opinions about the analyzed physics textbooks were more positive than the opinions of most of the students in appropriateness of laboratory activities to utilize at any stage of the lesson (see Table 4.8.9).

Table 4.8.9 Opinions of the participants about utilization of laboratory activities

Subjects	Laboratory activities should be appropriate to utilize at any stage of the lesson according to teachers' preferences			Laboratory activities are appropriate to utilize at any stage of the lesson according to teachers' preferences			
	Yes	No	Mis.	Yes	Par.	No	Mis.
	%	%	%	%	%	%	%
All students	84.9	13	2	23	34.9	37.2	4.9
Students (TB. 1)	-	-	-	17.2	39.1	42	1.8
Students (TB. 2)	-	-	-	24.9	28.9	40.1	6.2
Students (TB. 3)	-	-	-	24.5	59.2	8.2	8.2
Students (TB. 4)	-	-	-	37.5	50	12.5	0
Teachers	100	0	0	22.2	55.6	16.7	5.6
Teachers (TB. 1)	-	-	-	22.2	55.6	22.2	0
Teachers (TB. 2)	-	-	-	50	25	25	0
Teachers (TB. 3)	-	-	-	0	100	0	0
Teachers (TB. 4)	-	-	-	0	0	0	100
Textbook Writers	100	0	0	75	0	25	0
Book Committee	100	0	0	50	25	25	0
Instructors	100	0	0	-	-	-	-

All groups of the participants stated that pre-requisite information should be available in the experiment page. In addition, most of the teachers' opinions about analyzed physics textbooks were more positive than the other groups of participants in availability of the pre-requisite information in the experiment page (see Table 4.8.10).

Table 4.8.10 Opinions of the participants about pre-requisite information in the experiment page

Subjects	Pre-requisite information should be available in the experiment page			Pre-requisite information is available in the experiment page			
	Yes	No	Mis.	Yes	Par.	No	Mis.
	%	%	%	%	%	%	%
All students	81.2	15.9	2.9	25.4	39.1	30.5	5.1
Students (TB. 1)	-	-	-	24.3	36.1	38.5	1.2
Students (TB. 2)	-	-	-	23.2	40.6	29.4	6.7
Students (TB. 3)	-	-	-	30.6	44.9	16.3	8.2
Students (TB. 4)	-	-	-	68.8	18.8	12.5	0
Teachers	100	0	0	27.8	50.0	16.7	5.6
Teachers (TB. 1)	-	-	-	33.3	44.4	22.2	0
Teachers (TB. 2)	-	-	-	50	25	25	0
Teachers (TB. 3)	-	-	-	0	100	0	0
Teachers (TB. 4)	-	-	-	0	0	0	100
Textbook Writers	100	0	0	75	0	25	0
Book Committee	100	0	0	75	0	25	0
Instructors	100	0	0	-	-	-	-

Indexes, glossaries and table of contents in physics textbooks should provide true and complete information according to all groups of the participants. In addition, the analyzed physics textbooks' indexes, glossaries and table of contents provide true and complete information as stated by all groups of the participants (see Table 4.9.1-4.9.3).

Table 4.9.1 Opinions of the participants about glossaries in textbooks

Subjects	Glossaries should provide true and complete information			Glossaries provide true and complete information			
	Yes	No	Mis.	Yes	Par.	No	Mis.
	%	%	%	%	%	%	%
All students	86.1	10.7	3.2	32.3	41.1	19.8	6.8
Students (TB. 1)	-	-	-	18.3	55	24.3	2.4
Students (TB. 2)	-	-	-	38.9	33.9	18.2	9
Students (TB. 3)	-	-	-	22.4	53.1	16.3	8.2
Students (TB. 4)	-	-	-	62.5	18.8	18.8	0
Teachers	94.4	5.6	0	22.2	72.2	5.6	0
Teachers (TB. 1)	-	-	-	22.2	66.7	11.1	0
Teachers (TB. 2)	-	-	-	25	75	0	0
Teachers (TB. 3)	-	-	-	0	100	0	0
Teachers (TB. 4)	-	-	-	100	0	0	0
Textbook Writers	75	25	0	100	0	0	0
Book Committee	75	25	0	25	75	0	0
Instructors	100	0	0	-	-	-	-

Table 4.9.2 Opinions of the participants about indexes in textbooks

Subjects	Indexes should be true and complete			Indexes are true and complete			
	Yes	No	Mis.	Yes	Par.	No	Mis.
	%	%	%	%	%	%	%
All students	80.2	15.7	4.1	27.7	41.6	23.5	7.1
Students (TB. 1)	-	-	-	22.5	47.9	26	3.6
Students (TB. 2)	-	-	-	27.2	39.2	24.6	9
Students (TB. 3)	-	-	-	38.8	44.9	8.2	8.2
Students (TB. 4)	-	-	-	62.5	18.8	18.8	0
Teachers	94.4	5.6	0	22.2	55.6	5.6	0
Teachers (TB. 1)	-	-	-	22.2	66.7	11.1	0
Teachers (TB. 2)	-	-	-	25	75	0	0
Teachers (TB. 3)	-	-	-	0	100	0	0
Teachers (TB. 4)	-	-	-	100	0	0	0
Textbook Writers	100	0	0	100	0	0	0
Book Committee	75	25	0	25	75	0	0
Instructors	100	0	0	-	-	-	-

Table 4.9.3 Opinions of the participants about table of contents in the textbooks

Subjects	Table of contents should be true and complete			Table of contents are true and complete			
	Yes	No	Mis.	Yes	Par.	No	Mis.
	%	%	%	%	%	%	%
All students	83.8	11.8	4.4	34.3	39.4	17.8	8.5
Students (TB. 1)	-	-	-	39.6	39.1	18.9	2.4
Students (TB. 2)	-	-	-	29.7	40.3	18.2	11.8
Students (TB. 3)	-	-	-	36.7	40.8	14.3	8.2
Students (TB. 4)	-	-	-	75	18.8	6.3	0
Teachers	100	0	0	38.9	55.6	5.6	0
Teachers (TB. 1)	-	-	-	55.6	33.3	11.1	0
Teachers (TB. 2)	-	-	-	25	75	0	0
Teachers (TB. 3)	-	-	-	0	100	0	0
Teachers (TB. 4)	-	-	-	100	0	0	0
Textbook Writers	100	0	0	100	0	0	0
Book Committee	100	0	0	75	25	0	0
Instructors	100	0	0	-	-	-	-

Although all groups of the participants stated that references should be cited at the end of the textbooks, important portion of the teachers, who analyzed TB. 1 stated that references are not cited at the end of the textbooks (see Table 4.9.4).

Table 4.9.4 Opinions of the participants about the cited references in the textbooks

Subjects	References should be cited at the end of the textbooks			References are cited at the end of the textbooks			
	Yes	No	Mis.	Yes	Par.	No	Mis.
	%	%	%	%	%	%	%
All students	82.7	13.2	4.1	39.4	32.7	20	8
Students (TB. 1)	-	-	-	41.4	37.3	18.9	2.4
Students (TB. 2)	-	-	-	37	30.3	22.4	10.4
Students (TB. 3)	-	-	-	44.9	38.8	6.1	10.2
Students (TB. 4)	-	-	-	56.3	18.8	18.8	6.3
Teachers	100	0	0	33.3	44.4	22.2	0
Teachers (TB. 1)	-	-	-	22.2	33.3	44.4	0
Teachers (TB. 2)	-	-	-	75	25	0	0
Teachers (TB. 3)	-	-	-	0	100	0	0
Teachers (TB. 4)	-	-	-	100	0	0	0
Textbook Writers	75	25	0	100	0	0	0
Book Committee	100	0	0	0	50	25	25
Instructors	100	0	0	-	-	-	-

Cover page should be attractive according to all groups of the participants. In addition, among textbooks, cover page of TB. 4 are determined as attractive by most of the students (see Table 4.10.1).

Table 4.10.1 Opinions of the participants about cover page of textbooks

Subjects	Cover page should be attractive			Cover page is attractive			
	Yes	No	Mis.	Yes	Par.	No	Mis.
	%	%	%	%	%	%	%
All students	84.1	12.7	3.2	25.7	23.7	45.5	5.1
Students (TB. 1)	-	-	-	26.6	29	42.6	1.8
Students (TB. 2)	-	-	-	24.9	20.4	48.7	5.9
Students (TB. 3)	-	-	-	24.5	16.3	46.9	12.2
Students (TB. 4)	-	-	-	37.5	62.5	0	0
Teachers	83.3	16.7	0	33.3	55.6	11.1	0
Teachers (TB. 1)	-	-	-	44.4	55.6	0	0
Teachers (TB. 2)	-	-	-	50	0	50	0
Teachers (TB. 3)	-	-	-	0	100	0	0
Teachers (TB. 4)	-	-	-	0	100	0	0
Textbook Writers	100	0	0	75	25	0	0
Book Committee	75	25	0	75	25	0	0
Instructors	100	0	0	-	-	-	-

Physics textbooks should be well-designed and tough according to all groups of the participants. In addition, textbook writers' and book committee members' opinions about design and toughness of the analyzed textbooks were more positive than most of the students' and teachers' opinions (see Table 4.10.2).

Table 4.10.2 Opinions of the participants about design and toughness of textbooks

Subjects	Textbook should be well-designed and tough			Textbook is well-designed and tough			
	Yes	No	Mis.	Yes	Par.	No	Mis.
	%	%	%	%	%	%	%
All students	84.6	11.8	3.6	22.5	30.5	42.5	4.6
Students (TB. 1)	-	-	-	13.6	42	42.6	1.8
Students (TB. 2)	-	-	-	24.1	23.5	46.8	5.6
Students (TB. 3)	-	-	-	30.6	42.9	18.4	8.2
Students (TB. 4)	-	-	-	56.3	25	18.8	0
Teachers	94.4	5.6	0	16.7	27.8	55.6	0
Teachers (TB. 1)	-	-	-	22.2	22.2	55.6	0
Teachers (TB. 2)	-	-	-	0	75	25	0
Teachers (TB. 3)	-	-	-	0	0	100	0
Teachers (TB. 4)	-	-	-	100	0	0	0
Textbook Writers	100	0	0	100	0	0	0
Book Committee	75	25	0	25	50	25	0
Instructors	100	0	0	-	-	-	-

Textbook should not be huge according to all groups of the participants. Although it changes from textbook to textbook, all groups of the participants stated that size of the analyzed physics textbooks were not huge (see Table 4.10.3).

Table 4.10.3 Opinions of the participants about size of the textbooks

Subjects	Textbook should not be huge			Textbook is not huge			
	Yes	No	Mis.	Yes	Par.	No	Mis.
	%	%	%	%	%	%	%
All students	80.2	15.6	4.2	43.3	27.7	22.5	6.4
Students (TB. 1)	-	-	-	47.9	30.8	18.9	2.4
Students (TB. 2)	-	-	-	43.1	26.9	21.6	8.4
Students (TB. 3)	-	-	-	34.7	24.5	32.7	8.2
Students (TB. 4)	-	-	-	25	25	50	0
Teachers	94.4	5.6	0	72.2	16.7	11.1	0
Teachers (TB. 1)	-	-	-	66.7	22.2	11.1	0
Teachers (TB. 2)	-	-	-	75	25	0	0
Teachers (TB. 3)	-	-	-	100	0	0	0
Teachers (TB. 4)	-	-	-	0	0	100	0
Textbook Writers	100	0	0	100	0	0	0
Book Committee	100	0	0	50	25	25	0
Instructors	100	0	0	-	-	-	-

All groups of the participants believe that writings in physics textbooks should be attractive and font-size should be big enough to be read easily. In addition, the stated characteristic of the analyzed textbooks were maintained according to all groups of the participants (see Table 4.10.4).

Table 4.10.4 Opinions of the participants about writings in textbooks

Subjects	Writings should be attractive and font-size should be big enough to be read easily			Writings are attractive and font-size is big enough to be read easily			
	Yes	No	Mis.	Yes	Par.	No	Mis.
	%	%	%	%	%	%	%
All students	85.1	10.3	4.6	30.1	43.5	21.5	4.9
Students (TB. 1)	-	-	-	26.6	53.3	18.3	1.8
Students (TB. 2)	-	-	-	31.7	39.8	22.4	6.2
Students (TB. 3)	-	-	-	18.4	40.8	32.7	8.2
Students (TB. 4)	-	-	-	68.8	31.3	0	0
Teachers	94.4	5.6	0	44.4	55.6	0	0
Teachers (TB. 1)	-	-	-	44.4	55.6	0	0
Teachers (TB. 2)	-	-	-	75	25	0	0
Teachers (TB. 3)	-	-	-	0	100	0	0
Teachers (TB. 4)	-	-	-	100	0	0	0
Textbook Writers	100	0	0	100	0	0	0
Book Committee	75	25	0	50	50	0	0
Instructors	100	0	0	-	-	-	-

All groups of the participants stated that an ideal physics textbook should be pressed on a high-quality paper. However, approximately 1 out of 4 students thought that textbook is not pressed on a high quality paper (see Table 4.10.5).

Table 4.10.5 Opinions of the participants about textbooks' quality of paper

Subjects	Textbook should be pressed on a high-quality paper			Textbook is pressed on a high-quality paper			
	Yes	No	Mis.	Yes	Par.	No	Mis.
	%	%	%	%	%	%	%
All students	87	9.5	3.6	32.3	40.3	22.8	4.6
Students (TB. 1)	-	-	-	41.4	32	24.9	1.8
Students (TB. 2)	-	-	-	26.1	45.9	22.7	5.3
Students (TB. 3)	-	-	-	42.9	26.5	22.4	8.2
Students (TB. 4)	-	-	-	43.8	43.8	6.3	6.3
Teachers	100	0	0	44.4	50.0	5.6	0
Teachers (TB. 1)	-	-	-	66.7	22.2	11.1	0
Teachers (TB. 2)	-	-	-	25	75	0	0
Teachers (TB. 3)	-	-	-	0	100	0	0
Teachers (TB. 4)	-	-	-	100	0	0	0
Textbook Writers	100	0	0	100	0	0	0
Book Committee	100	0	0	50	50	0	0
Instructors	100	0	0	-	-	-	-

The following tables represent how do students and teachers use physics textbooks and opinions of the participants about how the physics textbooks should be used (see Table 4.11.1-4.15).

Most of the students and teachers stated that they are using physics textbooks most while solving questions (see Table 4.11.1).

Table 4.11.1 Responses to the item “In which situations do you use your physics textbook?”

	Students	Teachers
Sub-items	f (%)	f (%)
While preparing for lesson	131 (22.2)	6 (33.3)
During lesson	148 (25)	8 (44.4)
While solving questions	286 (48.4)	12 (66.7)
I do not use	159 (26.9)	1(5.6)

As shown in Table 4.11.2, most of the students reported that they are using their physics textbook when they are solving questions. In addition, most of the teachers reported that their textbook use changes according to the subject.

Table 4.11.2 Responses to the item “How often do you use your physics textbook?”

	Students	Teachers
Sub-items	f (%)	f (%)
During lesson	129 (21.8)	7 (38.9)
While solving questions	232 (39.3)	9 (50)
Changes according to the subject	198 (33.5)	10 (55.6)

As Table 4.11.3 shows most of the students and teachers are frequently using questions.

Table 4.11.3 Responses to the item “Which parts of the chosen physics textbook you are using frequently?”

	Students	Teachers
Sub-items	f (%)	f (%)
Questions	398 (67.3)	16 (88.9)
Experiments	47 (8)	1 (5.6)
Subject explanations	188 (31.8)	5 (27.8)

Most of the students and teachers stated that they support their physics textbooks with other materials (see Table 4.11.4).

Table 4.11.4: Responses to the item “Do you support your physics textbook with other materials?”

	Students	Teachers
Sub-items	f (%)	f (%)
Yes	361 (61.1)	18 (100)
No	230 (38.9)	0 (0)

Table 4.11.5 indicates that most of the students use their notes taken in class in order to support their physics textbooks. In addition, most of the teachers support their physics textbooks both with different sources and previously prepared notes.

Table 4.11.5 Responses to the item “In which ways, do you support your physics textbook?”

Sub-items	Students	Teachers
	f (%)	f (%)
Different sources	86 (14.6)	10 (55.6)
Test books	113 (19.1)	8 (44.4)
From previously prepared notes	-	10 (55.6)
Sources from Internet	33 (5.6)	3 (16.7)
Notes taken in class	256 (43.3)	-

Most of the students stated that they do not use their physics textbooks since there are excess of details. However, most of the physics teachers do not use their physics textbooks since the explanations of subjects are not sufficient (see Table 4.11.6).

While most of the students stated that they are not using, approximately 2 out of 3 teachers stated that they are using physics textbooks in their classroom, different from selected one (see Table 4.11.7).

Table 4.11.6 Responses to the item “If you are not using your physics textbooks, what are your reasons?”

Sub-items	Students	Teachers
	f (%)	f (%)
Explanation of subjects is not sufficient	137 (23.2)	9 (50)
There are excess of details	154 (26.1)	0 (0)
Wrong information	91 (15.4)	0 (0)
No enough examples	128 (21.7)	8 (44.4)
Types of questions are inadequate	107 (18.1)	8 (44.4)
Content is not appropriate to ÖSS	114 (19.3)	5 (27.8)
Textbook is not attractive	140 (23.7)	4 (22.2)

Table 4.11.7 Responses to the item “Are you using a physics textbook in your classroom, different from selected one?”

Sub-items	Students	Teachers
	f (%)	f (%)
Yes	18 (3)	11 (61.1)
No	572 (96.8)	5 (27.8)

According to all groups of the participants, physics textbooks should be used when necessary, and should be supported with different materials (see Table 4.12).

Table 4.12 Responses to the item “Which of the followings reflect your opinions about textbooks?”

Sub-items	Students f (%)	Teachers f (%)	Textbook Writers f (%)	Book Committee f (%)	Instructors f (%)
It is not necessary to use a textbook	78 (13.2)	2 (11.1)	0 (0)	0 (0)	0 (0)
It is important to depend on textbooks completely	62 (10.5)	1 (5.6)	0 (0)	0 (0)	0 (0)
It is necessary to support textbooks with different materials	190 (32.1)	14 (77.8)	2 (50)	3 (75)	2 (66.7)
It should be used when necessary	329 (55.7)	8 (44.4)	2 (50)	3 (75)	3 (100)

Table 4.13 indicates that according to most of the students and teachers, physics textbooks should be used while solving questions. In addition most of the instructors reported that physics textbooks should be used while preparing for lesson and solving questions. Moreover, according to most of the book committee members and textbook writers, physics textbooks should be used while preparing for lesson, during lesson and while solving questions.

Table 4.13 Responses to the item “In which situations should physics textbooks be used?”

	Students	Teachers	Textbook Writers	Book Committee	Instructors
Sub-items	f (%)	f (%)	f (%)	f (%)	f (%)
While preparing for lesson	139 (23.5)	7 (38.9)	4 (100)	3 (75)	3 (100)
During lesson	217 (36.7)	5 (27.8)	4 (100)	3 (75)	1 (33.3)
While solving questions	351 (59.4)	16 (88.9)	4 (100)	3 (75)	3 (100)
It should not be used	65 (11)	0 (0)	0 (0)	0 (0)	0 (0)

As shown in Table 4.14, according to most of the students and teachers, physics textbooks should be used only while solving questions. In addition most of the textbook writers and instructors stated that level of using physics textbooks should be changed according to the subject. On the other hand, according to most of the book committee members, physics textbooks should be used during lesson, while solving questions and also level of using physics textbooks should be changed according to the subject.

Table 4.14 Responses to the item “How often a physics textbook should be used?”

Sub-items	Students f (%)	Teachers f (%)	Textbook Writers f (%)	Book Committee f (%)	Instructors f (%)
During lesson	108 (18.3)	5 (27.8)	2 (50)	2 (50)	0 (0)
Only while solving questions	340 (57.5)	7 (38.9)	3 (75)	2 (50)	0 (0)
It should be changed according to the subject	191 (32.3)	10 (55.6)	4 (100)	2 (50)	3 (100)

Teachers’ level of using physics textbooks is more similar to the beginning years of their teaching experience according to most of the teachers. On the other hand, approximately 2 out of 5 teachers reported that they were using physics textbooks more in the beginning years of their teaching experience (see Table 4.15).

Table 4.15 Teachers' responses to the item "Which of the following statements is more appropriate to your situation?"

Sub-items	f (%)
I was using physics textbooks more in the beginning years of my teaching experience	7 (38.9)
I was not using physics textbooks more in the beginning years of my teaching experience like now	1 (5.6)
I am using physics textbooks more similar to the beginning years of my teaching experience	10 (55.6)
I can not compare	0 (0)

4.2 Summary of the Results

The results of the reseach study can be summarized as follows:

- According to most of the students, out of nine categories, only content category should be taken into consideration in selecting/writing physics textbooks. However, positive answers in content category could not be accepted as high proportion.
- Most of the teachers stated that the nine categories should be taken into consideration in selecting physics textbooks. However, positive answers in activities, laboratory activities, and indexes and glossaries categories could not be accepted as high proportion.
- Half of the book committee members thought that indexes and glossaries, and physical appearances should not be taken into account in selecting physics textbooks. However, most of them have positive thoughts in taking into consideration of the other categories.
- According to most of the textbook writers, except from indexes and glossaries, the stated categories should be taken into account in writing physics textbooks.
- All the instructors believed that the nine categories should be taken into account in selecting/writing physics textbooks.

- While most of the textbook writers stated that they are taking into account all of the nine categories in writing physics textbooks, large amount of the teachers reported that they do not take into account activities, and indexes and glossaries. In addition, half of the book committee members stated that they do not take into account physical appearances in selecting physics textbooks.
- Most of the opinions of the participants match with the literature review in terms of ideal physics textbooks characteristics. However, about the sub-item “pronunciation of foreign words should not be given next to them in parenthesis”, most of the textbook writers, book committee members and instructors stated the opposite (see Table 4.4.5). In addition, laboratory activities should be placed in laboratory handbook according to most of the instructors. However, according to other groups of the participants, place of the laboratory activities is not important (see Table 4.8.7 and Table 4.8.8).
- Out of 91 ideal physics textbook characteristics, the analyzed physics textbooks have 89, 85, 82, and 74 characteristics respectively according to most of the students, textbook writers, teachers, and book committee members.
- According to most of the students and teachers, although instructional approach category of the analyzed physics textbooks have most of the characteristics of ideal physics textbooks, rate of positive responses in this category were lower than the other categories.
- TB. 1, according to most of the students, possesses 80, and according to most of the teachers, possesses 77 ideal physics textbook characteristics out of 91.
- TB. 2, according to most of the students, possesses all, and according to most of the teachers, possesses 59 ideal physics textbook characteristics out of 91.

- TB. 3, according to most of the students, possesses 90, and according to most of the teachers, possesses 83 ideal physics textbook characteristics out of 91.
- TB. 4, according to most of the students, possesses 90, and according to most of the teachers, possesses 77 ideal physics textbook characteristics out of 91.
- According to most of the students and teachers, physics textbooks should be used while solving questions. In addition, most of the students and teachers stated that they are using physics textbooks frequently, while they are solving questions.
- Most of the students and teachers stated that they support physics textbooks with materials like notes taken in class or previously prepared notes, and different sources.
- Most of the students stated that they do not use their physics textbooks since there are excess of details. However, most of the physics teachers stated that they do not use their physics textbooks since the explanations of subjects are not sufficient.
- According to all groups of the participants, it is necessary to support textbooks with other sources and textbooks should be used where necessary.
- Teachers' frequency of using physics textbooks is more similar to the beginning years of their teaching experience according to most of the teachers. On the other hand, approximately 2 out of 5 teachers reported that they were using physics textbooks more in the beginning years of their teaching experience.

CHAPTER 5

CONCLUSIONS, DISCUSSION AND IMPLICATIONS

This chapter presents the summary of the research study, conclusions and discussion of the results, internal and external validities of the study, implications of the study, and recommendations for further researches.

5.1 Summary of the Research Study

In order to investigate the specified purposes of the study, physics textbooks evaluation questionnaire was applied to 18 teachers, 591 students, 4 textbook writers, 4 science education instructors and 4 Ministry of National Education book committee members in TRNC during the 2005-2006 spring semester. To obtain the representative sample, convenient sampling was used. Cross-sectional survey was the research methodology of this study.

5.2 Conclusions and Discussion of the Results

The first research question of this study aimed to investigate the characteristics of ideal physics textbooks. Similar to Keleş (2001) and Köseoğlu et al. (2003a), in this study, ideal physics textbooks' characteristics were analyzed under nine categories such as content, organization, readability, instructional approach, visual materials, activities, laboratory activities, indexes and glossaries, and physical appearances. Scientific literacy category were not included in the questionnaires since students and teachers could have problems in comprehension.

According to all groups of the participants except students, in selecting/writing physics textbooks, most of the categories should be taken into consideration. On the other hand, according to the important proportion of the teachers, textbook writers, and book committee members, indexes and glossaries

should not be taken into consideration in selecting/writing physics textbooks. In addition, considerable amount of teachers reported that they do not take into account indexes and glossaries, and activities.

The results of the study indicated that most of the opinions of the participants match with the literature review in terms of ideal physics textbooks characteristics. However, about the sub-item “pronunciation of foreign words should not be given next to them in parenthesis”, most of the textbook writers, book committee members and instructors stated the opposite (see Table 4.4.5). In addition, laboratory activities should be placed in laboratory handbook according to most of the instructors. However, according to other groups of the participants, placement of the laboratory activities does not make any difference (see Table 4.8.7 and Table 4.8.8).

The second research question of the study aimed to investigate the opinions of the participants if the 9th grade physics textbooks, used in TRNC; possess the characteristics of an ideal physics textbook or not. In general, from 91 ideal physics textbook characteristics, the analyzed physics textbooks have 89, 85, 82, and 74 characteristics according to most of the students, textbook writers, teachers, and book committee members respectively. When the ideal physics textbook characteristics were analyzed in nine stated categories, according to most of the textbook writers and book committee members, all categories of textbooks have most of the ideal physics textbook characteristics. However, according to most of the students and teachers, although instructional approach category of the analyzed physics textbooks have most of the characteristics of ideal physics textbooks, rate of positive responses in this category were lower than the other categories. This supports the findings of Kesidou and Roseman (2002) and Stern and Roseman (2004), and Kanlı and Yağbasan (2003) who were concluded that the instructional approach of the curriculum materials were not sufficient.

In addition, the results of the study indicate that among the analyzed textbooks, TB. 4 have most of the ideal physics textbook characteristic according to most of the teachers and students. When the opinions of the students and

teachers were compared, it can be concluded that teachers' opinions about textbooks were more positive than the students' opinions. However, students' opinions about TB. 4 were more positive than the teachers' opinions.

The third research question of the study aimed to investigate how the students and teachers use of 9th grade physics textbooks and opinions of all groups of the participants about how physics textbooks should be used. From most of the teachers' and students' perspective, physics textbooks should be used the most, while solving the questions. One of the interesting finding of the study is that most of the teachers stated that they are using physics textbooks the most, while solving questions. However, as mentioned previously, important proportion of teachers stated that they do not take activities into consideration when they are selecting physics textbooks.

Similar to most of the teachers, most of the students reported that they use questions most in textbooks, in addition, teachers and students stated that they support their physics textbook with other sources, and previously prepared notes or notes taken in class. Therefore, it can be concluded that the teachers' and students' purposes of using physics textbooks were almost similar. Similar to the previous study, it could be also concluded that teachers (Gökdere & Keleş, 2004) and students avoid leaning on a unique source.

Some of the students and teachers reported that they are not using their physics textbooks because of deficiencies in textbooks. Most of the students stated that they do not use their physics textbooks since there are excess of details. In addition, most of the physics teachers' reason is that the explanations of subjects are not sufficient in physics textbooks. Therefore, textbooks do not completely meet the needs of teachers (Şahin, 2001) and students.

To sum up, although the categories maintained most of the ideal physics textbook characteristics, the study indicated that none of the categories obtained perfect results from the participants. This supports the findings of Keleş (2001). According to the literature, most of the analyzed textbooks have lots of deficiencies. Therefore, in this study, it was expected that physics textbooks were rated as unsatisfactory in terms of all the stated categories. However, from

most of the students' and teachers' point of view, most of the analyzed textbooks satisfied the characteristics of the stated categories. But, this is not evidence that the analyzed textbooks are well-qualified in terms of ideal physics textbooks characteristics.

5.4 Internal Validity of the Study

Internal Validity of the study refers to the degree to which the observed differences on dependent variables are directly related to independent variables, not to extraneous variables that may affect the results of the research (Fraenkel & Wallen, 1996). Possible threats to internal validity and the methods used to cope with them were discussed in this section.

In survey researches, mortality, location, instrumentation, and instrument decay were the possible threats to internal validity. Since the study was cross-sectional survey, mortality could be a threat to internal validity in that some of the participants failed to complete the questionnaires. To control this threat, incomplete questionnaires were removed from the study.

Location could not be a threat to this study since the questionnaires were applied in similar conditions to the participants.

Instrumentation, such as instrument decay and data collector characteristics could be threats to this study since the instruments were long and some of the questionnaires were applied by different administrators to the students. To control instrument decay, while administering the questionnaires participants were motivated to complete the instrument such as they were remembered the importance of the questionnaire and their valuable support to the study. In addition, most of the questionnaires were applied to the participants by the researcher; however, to some groups of the students, different administrators administered the questionnaires. In order to control this threat, administrators were informed in detail about the purpose, characteristics and application of the questionnaire by the researcher.

5.5 External Validity of the Study

The extent to which the results of the study can be generalized determines the external validity of the study. There are two types of external validity: population generalizability and ecological generalizability. Population generalizability refers to the degree to which a sample represents the population of interest, and ecological generalizability refers to the degree to which the results of a study can be extended to other settings or conditions (Fraenkel & Wallen, 1996).

Subjects of the study were selected conveniently from the population, however, sample characteristics like age, gender, SES were relevant to accessible population characteristics. Therefore, the results and conclusions of the study can be generalized to the accessible population and other populations which possess similar characteristics with the subjects of the study.

All the administration procedures took place in ordinary classrooms during regular class hours, there were possibly no remarkable differences among the environmental conditions. Therefore, it was believed that external effects were sufficiently controlled by the settings used in the study.

5.6 Implications of the Study

Results of the present study have implications for students, teachers, book committee members, textbook writers, instructors, ministry of national education, and higher education council.

Students;

1. Should use physics textbooks not only for solving questions but also for multi-purposes.
2. Should use physics textbooks actively both at home and in the class.

Teachers;

1. Should be aware of the ideal physics textbook characteristics and select their physics textbooks according to these characteristics.
2. Should use physics textbooks not only for solving questions but also for

multi-purposes.

3. Should motivate students to use textbooks both at home and in class.

Book Committee Members;

1. Should be aware of the ideal physics textbook characteristics under 10 categories.
2. Should analyze physics textbooks systematically according to these characteristics.
3. Could use the questionnaires of the study in selecting physics textbooks.

Textbook Writers;

1. Should prepare physics textbooks more attentively.
2. Should take feedbacks from students and teachers about their textbooks and revise their textbooks every year by taking into consideration of students' and teachers' needs and interests.

Science Education Instructors;

1. Should inform their students (prospective teachers) about ideal physics textbook characteristics.
2. Should emphasize the role of textbooks in ideal learning environments and proper use of textbooks in class and at home.
2. Should be models to their students in using textbooks in their classes.

Ministry of National Education;

1. Should select qualified persons as book committee members or give special education in analysis of textbooks.
2. Should give in-service training to the teachers about textbook analysis.
3. Should form and put into practice regulations in order to make textbooks more qualified.
4. Should form and put into practice regulations in order to make teachers use textbooks actively in their classes.

Higher Education Council (YÖK);

1. Should include textbook analysis courses to undergraduate programs of education faculties.

5.7 Recommendations for Further Research

A variety of useful topics were suggested for further researches. These are as follows:

1. A similar study could be conducted to different grade level physics textbooks.
2. A similar study could be repeated with randomly selected samples.
3. A similar study could be repeated by including scientific literacy category to the questionnaires.
4. Textbooks should be analyzed also by researchers besides participants in order to compare the responses.
5. In some questions, researcher were curious about the reasons of the given responses. Therefore, participants could be interviewed or in the questionnaires, reasons of the given responses should be asked to the participants.
6. How teachers and students use textbooks should be observed in classrooms instead of applying a questionnaire.

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APPENDIX A

ÖĞRENCİLERİN FİZİK DERS KİTAPLARINI DEĞERLENDİRME ANKETİ

Bu anketin amacı KKTC'deki 9. sınıf öğrencilerine okutulan fizik ders kitaplarında öğrencilere göre bulunması gereken özellikleri, bu özelliklerin okutulan fizik ders kitaplarında bulunup bulunmadığını ve öğretmenlerin fizik ders kitaplarını nasıl kullandıklarını araştırmaktır.

Anketin verileri Orta Doğu Teknik Üniversitesinde yürütülmekte olan bir yüksek lisans tezinde kullanılacak. Çalışmanın sonuçları ileride basılacak olan fizik ders kitaplarının ideal özelliklere sahip olması için kullanılacaktır. Bu nedenle anketi dikkatlice cevaplamanız rica olunur.

Katılımınız için teşekkürler.

Sevim Kavaz

ODTÜ OFMAE Bölümü Yüksek Lisans Öğrencisi

I. Bölüm

Bu bölümde 15 soru vardır. Uygun gördüğünüz sorularda birden fazla seçeneği işaretleyebilirsiniz.

1) Cinsiyetiniz	() Kız () Erkek
2) Hangi okula gidiyorsunuz?	() Özel Lise () Devlet Lisesi
3) Okulunuzda hangi fizik ders kitabı okutuluyor?	
4) Ders kitaplarıyla ilgili hangisi veya hangileri sizin düşüncenizi yansıtıyor?	() Kullanılmasa da olur () Ders kitabına yüzde yüz bağlı kalmak önemlidir () Farklı materyallerle desteklemek gerekir () Gerekli durumlarda kullanılmalı () Diğer:.....
5) Sizce seçilen fizik ders kitabı hangi durumlarda kullanılmalı?	() Derse hazırlanırken () Ders işlerken () Soru çözerken () Hiç kullanılmamalı () Diğer:.....
6) Seçilen fizik ders	() Derse çalışırken () Ders işlenirken

kitabını hangi durumlarda kullanmaktasınız?	() Soru çözerken () Hiç kullanmam () Diğer:.....
7) Sizce ders kitabı ne kadar sıklıkta kullanılmalı?	() Ders saati boyunca () Sadece konuyla ilgili soruları çözerken () Konudan konuya değişmeli () Diğer:.....
8) Ders kitabını ne kadar sıklıkta kullanıyorsunuz?	() Ders saati boyunca () Sadece konuyla ilgili soruları çözerken () Konudan konuya değişir () Diğer:.....
9) Kitapta sıklıkla kullandığınız kısımlar nelerdir?	() Sorular () Deneyler () Konu anlatımı () Diğer:.....
10) Fizik dersine çalışırken, ders kitabından farklı materyaller kullanıyor musunuz?	() Evet () Hayır
11) Kullanıyorsanız, bunlar nelerdir?	() Farklı kaynaklar () Test kitapçıkları () İnternette konuyla ilgili bulduğum materyaller () Sınıfta tuttuğum notlar () Diğer:.....
12) Seçilen ders kitabını kullanmıyorsanız kullanmama nedenleriniz nelerdir?	() Konu anlatımı yeterli değil () Konu anlatımında gereksiz ayrıntılar var () Bilgi hataları var () Yeterince örnek soru içermiyor () Soru çeşitleri kısıtlı () ÖSS' ye yönelik bir içeriğe sahip değil () Fiziksel özellikleri kitabı itici hale getiriyor () Diğer:.....
13) Sınıf içerisinde, seçilen ders kitabı dışında farklı bir kitap kullanıyor musunuz?	() Evet () Hayır
14) Kullanıyorsanız, hangi kitap veya kitapları kullanıyorsunuz?	Yazarı: Yayınevi:
15) Fizik ders kitaplarının incelenmesinde sizce kitabın	() İçerik () Organizasyon () Fiziksel Özellikler () Resim ve grafikler

hangi özellikleri değerlendirilmeli dir?	() Okunabilirlik () Öğretim yaklaşımı () Ünite sonu öğrenci etkinlikleri () İndeks ve ek sözlükler () Laboratuvar etkinlikleri
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II. Bölüm

Bu bölüm 18 sorudan oluşmaktadır. Evet;E, Hayır; H, ve Kısmen; K harfiyle kodlanmıştır. Size uygun gelen harfin üzerine işaretleyiniz

16) Sizce kitabın içeriğinde bulunması gereken özellikler nelerdir?			17) Kullandığınız ders kitabının içeriği nasıldır?		
Güncel olmalı	E	H	Günceldir	E	K H
Bilimsel açıdan hatasız olmalı	E	H	Bilimsel açıdan hatasızdır	E	K H
Kavram ve prensiplerin gelişimini içermelidir	E	H	Kavram ve prensiplerin gelişimini içeriyor	E	K H
Fen bilimleri, toplum ve teknolojinin birbirine etkilerini vurgulamalıdır	E	H	Fen bilimleri, toplum ve teknolojinin birbirine etkilerini vurguluyor	E	K H
Tüm öğrenciler için uygun olmalıdır	E	H	Tüm öğrenciler için uygundur	E	K H
Müfredata paralel olarak hazırlanmalıdır	E	H	Müfredata paralel olarak hazırlanmıştır	E	K H
Öğrenciyi gelecekteki yaşama hazırlamalıdır	E	H	Öğrenciyi gelecekteki yaşama hazırlıyor	E	K H
Metinler öğrencilerin yaş ve sınıf düzeyine uygun olmalıdır	E	H	Metinler öğrencilerin yaş ve sınıf düzeyine uygundur	E	K H
Metinler öğrencilerin ilgilerine ve yaşantılarına uygun olmalıdır	E	H	Metinler öğrencilerin ilgilerine ve yaşantılarına uygundur	E	K H
Metinler ilgili ünite ile ilişkili olmalıdır	E	H	Metinler ilgili ünite ile ilişkilidir	E	K H
Metinle açık, anlaşılır ve akıcı biçimde yazılmalıdır	E	H	Metinle açık, anlaşılır ve akıcı biçimde yazılmıştır	E	K H
Günlük hayattan örnekler içermelidir	E	H	Günlük hayattan örnekler içeriyor	E	K H
18)Fizik ders kitaplarının organizasyonunda dikkat edilmesi gereken şeyler nelerdir?			19) Kullandığınız ders kitabının organizasyonu nasıldır?		
Ders için MEB'nca öngörülen zaman konuların verilmesi için yeterli olmalıdır	E	H	Ders için MEB'nca öngörülen zaman konuların verilmesi için yeterlidir	E	K H
Sıralamada öngörülen değişiklikler için esnek olmalıdır	E	H	Sıralamada öngörülen değişiklikler için esnektir	E	K H
Konu başlıkları anlaşılır	E	H	Konu başlıkları anlaşılırdır	E	K H

olmalıdır					
Konular bir önceki sınıf programını tamamlayıcı ve bir sonrakine hazırlayıcı olmalıdır	E	H	Konular bir önceki sınıf programını tamamlayıcı ve bir sonrakine hazırlayıcıdır	E	K H
Konuların diğer derslerle olan ilişkisi belirtilmelidir	E	H	Konuların diğer derslerle olan ilişkisi belirtilmiştir	E	K H
Konular ile ÖSS sınavındaki sorular birbirine paralel olmalıdır	E	H	Konular ile ÖSS sınavındaki sorular birbirine paraleldir	E	K H
Metinlerin içerisinde konu ile ilgili karikatürler bulunmalıdır	E	H	Metinlerin içerisinde konu ile ilgili karikatürler bulunuyor	E	K H
Metin içerisinde konu ile ilgili kavram ve birimlere ilişkin bulmacalar bulunmalıdır	E	H	Metin içerisinde konu ile ilgili kavram ve birimlere ilişkin bulmacalar vardır	E	K H
Konular yeterince alt başlık taşımaktadır	E	H	Konular yeterince alt başlık taşıyor	E	K H
20) Kitabın okuma düzeyi nasıl olmalıdır?			21) Kullandığınız ders kitabı okunma düzeyi açısından nasıldır?		
Öğrencilerin sınıf düzeyine uygun olmalıdır	E	H	Öğrencilerin sınıf düzeyine uygundur	E	K H
Teknik kelimeler en az seviyede olmalıdır	E	H	Teknik kelimeler en az seviyededir	E	K H
Açık, sade ve yaşayan bir dilde yazılmalıdır	E	H	Açık, sade ve yaşayan bir dilde yazılmıştır	E	K H
Cümleler sınıf düzeyine uygun uzunlukta olmalıdır	E	H	Cümleler sınıf düzeyine uygun uzunluktadır	E	K H
Yabancı kelimelerin türkçe okunuşları yanında gösterilmelidir	E	H	Yabancı kelimelerin türkçe okunuşları yanında gösterilmiştir	E	K H
Cümleler somuttan soyuta doğru sıralanmalıdır	E	H	Cümleler somuttan soyuta doğru sıralanmıştır	E	K H
Metinler görsel imgelerle (resim, grafik, şema) desteklenmelidir	E	H	Metinler görsel imgelerle (resim, grafik, şema) desteklenmiştir	E	K H
Gereksiz bilgi yoğunluğu olmamalıdır	E	H	Gereksiz bilgi yoğunluğu yoktur	E	K H
22) Kitap öğretim yaklaşımı bakımından nasıl olmalıdır?			23) Kullandığınız ders kitabı öğretim yaklaşımı bakımından nasıldır?		
Fen bilimleri sorgulama-araştırma olarak tanımlanmalıdır	E	H	Fen bilimleri sorgulama-araştırma olarak tanımlanmıştır	E	K H
Öğrenci yeteneklerini ortaya çıkarmaya yönelik olmalıdır	E	H	Öğrenci yeteneklerini ortaya çıkarmaya yöneliktir	E	K H
Ders kitabı öğrencileri motive etmek ve anlamalarını sağlamak için genel amaçlar ve talimatlar içermelidir	E	H	Ders kitabı öğrencileri motive etmek ve anlamalarını sağlamak için genel amaçlar ve talimatlar içeriyor	E	K H
Dersin amacını ve diğer	E	H	Dersin amacını ve diğer	E	K H

derslerle olan ilişkisini içermelidir			derslerle olan ilişkisini içeriyor			
Öğrencilere konuların sunumunda hiçbir amacı olmayan aktiviteler yığını haline dönüştürmeden, mantıksal ve stratejik aktiviteler sunmalıdır	E	H	Öğrencilere konuların sunumunda hiçbir amacı olmayan aktiviteler yığını haline dönüştürmeden, mantıksal ve stratejik aktiviteler sunuyor	E	K	H
Konunun öğrenilmesi için gerekli, ön şart niteliğindeki bilgi ve becerileri ifade etmeli	E	H	Konunun öğrenilmesi için gerekli, ön şart niteliğindeki bilgi ve becerileri ifade ediyor	E	K	H
Öğrencilerin sahip olduğu yaygın fikirler konusunda öğretmeni uyarmalı	E	H	Öğrencilerin sahip olduğu yaygın fikirler konusunda öğretmeni uyarıyor	E	K	H
Bilimsel ifadeler verilmeden önce benzer olaylar hakkında öğrencilerin düşüncelerini ortaya çıkarmada öneriler içermeli	E	H	Bilimsel ifadeler verilmeden önce benzer olaylar hakkında öğrencilerin düşüncelerini ortaya çıkarmada öneriler içeriyor	E	K	H
Öğrencilerin sahip olduğu yaygın görüşlere yer vermeli	E	H	Öğrencilerin sahip olduğu yaygın görüşlere yer veriyor	E	K	H
Öğrenmeyi desteklemek için çoklu ve değişken olaylar sağlamalı	E	H	Öğrenmeyi desteklemek için çoklu ve değişken olaylar sağlıyor	E	K	H
Öğrencilerin konularla ilgili olarak kendilerinin yapacakları ya da uygulama imkanı olmayan olaylar için başkası tarafından yapılmış aktiviteleri içermeli	E	H	Öğrencilerin konularla ilgili olarak kendilerinin yapacakları ya da uygulama imkanı olmayan olaylar için başkası tarafından yapılmış aktiviteleri içeriyor	E	K	H
Bilimsel ifadelerin sunumu doğru ve anlaşılabilir ifadeler içermeli	E	H	Bilimsel ifadelerin sunumu doğru ve anlaşılabilir ifadeler içeriyor	E	K	H
Öğrenciler için bilginin kullanımının ve becerilerin sergilenmesinin nasıl olacağı hakkında öneriler içermeli	E	H	Öğrenciler için bilginin kullanımının ve becerilerin sergilenmesinin nasıl olacağı hakkında öneriler içeriyor	E	K	H
Çeşitli olaylarda bilginin kullanımı ve becerilerin uygulanması için öğrencilere ödevler/problemler sunmalı	E	H	Çeşitli olaylarda bilginin kullanımı ve becerilerin uygulanması için öğrencilere ödevler/problemler sunuyor	E	K	H
Devamlı olarak her bir öğrencinin fikirlerini ifade etme, açıklama, doğrulama ve sergilemeleri için öneriler içermeli	E	H	Devamlı olarak her bir öğrencinin fikirlerini ifade etme, açıklama, doğrulama ve sergilemeleri için öneriler içeriyor	E	K	H
Öğrencilerin okudukları olayların uygulamaları hakkında muhakeme ve yorum yapmalarına rehber olmak için bir dizi	E	H	Öğrencilerin okudukları olayların uygulamaları hakkında muhakeme ve yorum yapmalarına rehber olmak için bir dizi	E	K	H

problem/ödev içermeli			problem/ödev içeriyor			
Anlama olmaksızın ezberlenen ifadeleri tekrar etme ya da bir formülü kullanmaya benzer önemsiz ifadelerden öğrenciyi uzak tutan ve fikirlerin uygulanmasını içeren değerlendirme soruları/ödevleri içermeli	E	H	Anlama olmaksızın ezberlenen ifadeleri tekrar etme ya da bir formülü kullanmaya benzer önemsiz ifadelerden öğrenciyi uzak tutan ve fikirlerin uygulanmasını içeren değerlendirme soruları/ödevleri içeriyor	E	K	H
Müfredat programı ve belirtilen bu kriterleri kapsayan bir içerik, eğitim-öğretimin faaliyetlerini amaçlarına uygun bir şekilde değerlendirmeli	E	H	Müfredat programı ve belirtilen bu kriterleri kapsayan bir içerik, eğitim-öğretimin faaliyetlerini amaçlarına uygun bir şekilde değerlendiriyor	E	K	H
Öğretmenlere öğretme konusunda gerekli olan fen, matematik ve teknoloji yönünden kendi bilgi düzeylerini geliştirmeleri için yardım edebilmeli	E	H	Öğretmenlere öğretme konusunda gerekli olan fen, matematik ve teknoloji yönünden kendi bilgi düzeylerini geliştirmeleri için yardım ediyor	E	K	H
Öğretmenlere, öğrencileri dogmatizmadan uzak, soru sormayı cesaretlendiren, yaratıcılığı ödüllendiren ve ilgiyi uyandıran bir öğretme ortamı sağlamaya yardımcı olmalı	E	H	Öğretmenlere, öğrencileri dogmatizmadan uzak, soru sormayı cesaretlendiren, yaratıcılığı ödüllendiren ve ilgiyi uyandıran bir öğretme ortamı sağlamaya yardımcıdır	E	K	H
Öğretmenlere, bütün öğrencilerin yüksek beklentileri olması noktasında teşvik eden, başarılı deneyimlere muktedir kılan ve fen ortamında sorumluluk duygusu sağlayan bir sınıf ortamı yaratmak için yardım edebilmeli	E	H	Öğretmenlere, bütün öğrencilerin yüksek beklentileri olması noktasında teşvik eden, başarılı deneyimlere muktedir kılan ve fen ortamında sorumluluk duygusu sağlayan bir sınıf ortamı yaratmak için yardım ediyor	E	K	H
24) Kitaptaki resim, grafik, şema gibi görsel materyaller nasıl olmalıdır?			25) Kullandığınız ders kitabının resim, şema, grafik gibi görsel materyallerinin özellikleri nasıldır?			
Güncel olmalıdır	E	H	Günceldir	E	K	H
Net ve iyi kalitede olmalıdır	E	H	Net ve iyi kalitededir	E	K	H
Yazılı metnin içeriği ile ilişkili olup uygun biçimde yerleştirilmelidir	E	H	Yazılı metnin içeriği ile ilişkili olup uygun biçimde yerleştirilmiştir	E	K	H
Öğretim için yararlı olmalıdır	E	H	Öğretim için yararlıdır	E	K	H
Şekil, grafik ve şemalar öğrenci seviyesine uygun, açık ve net olmalıdır	E	H	Şekil, grafik ve şemalar öğrenci seviyesine uygun, açık ve nettir	E	K	H
Şekil, grafik ve şemalara	E	H	Şekil, grafik ve şemalara	E	K	H

ilişkin açıklamalar yapılmalıdır			ilişkin açıklamalar yapılmıştır			
26) Ünite sonu öğrenci etkinliklerinin özellikleri sizce neler olmalıdır?			27) Kullandığınız ders kitabının ünite sonu öğrenci etkinlikleri nasıldır?			
Sorular iyi hazırlanmış ve ders tekrarı için uygun olmalıdır	E	H	Sorular iyi hazırlanmış ve ders tekrarı için uygundur	E	K	H
Kelimeler listesi uygun ve yararlı olmalıdır	E	H	Kelimeler listesi uygun ve yararlıdır	E	K	H
Önerilen etkinlik ve projeler düşünmeye sevk etmeli ve cesaretlendirmelidir	E	H	Önerilen etkinlik ve projeler düşünmeye sevk ediyor ve cesaretlendiriyor	E	K	H
Önerilen etkinlikler kolay bulunabilecek ve tehlikesiz maddeler içermelidir	E	H	Önerilen etkinlikler kolay bulunabilecek ve tehlikesiz maddeler içeriyor	E	K	H
Ünite testleri bulunmalıdır	E	H	Ünite testleri bulunuyor	E	K	H
Laboratuvar programı için araç-gereç listesi bulunmalıdır	E	H	Laboratuvar programı için araç-gereç listesi bulunuyor	E	K	H
Kütüphane kaynak materyalleri önerilmelidir	E	H	Kütüphane kaynak materyalleri öneriyor	E	K	H
Konu başında verilen hedef davranışlar ile ünite sonunda verilen değerlendirme soruları içerik ve seviye yönünden birbirlerine uygun olmalıdır	E	H	Konu başında verilen hedef davranışlar ile ünite sonunda verilen değerlendirme soruları içerik ve seviye yönünden birbirlerine uygundur	E	K	H
Ders kitabı öğrencinin birçok bilişsel yeteneğini geliştirmek üzere çözümlü örnekler içermelidir	E	H	Ders kitabı öğrencinin birçok bilişsel yeteneğini geliştirmek üzere çözümlü örnekler içeriyor	E	K	H
Ders kitabında sorulan soruların seviyeleri ile üniversite sınavında sorulan soruların seviyeleri uygun olmalıdır	E	H	Ders kitabında sorulan soruların seviyeleri ile üniversite sınavında sorulan soruların seviyeleri uygundur	E	K	H
Kitaptaki sorular matematiksel çözüm yanında öğrencileri düşünmeye, yorumlamaya ve araştırmaya yönlendirmelidir	E	H	Kitaptaki sorular matematiksel çözüm yanında öğrencileri düşünmeye, yorumlamaya ve araştırmaya yönlendiriyor	E	K	H
Kitapta her öğrenci seviyesine uygun sorular bulunmalıdır	E	H	Kitapta her öğrenci seviyesine uygun sorular bulunuyor	E	K	H
Sorular kolaydan zora doğru sıralanmalıdır	E	H	Sorular kolaydan zora doğru sıralanmıştır	E	K	H
Sorular öğrencilerin konuyu tekrarlayabileceği ve bilgilerini pekiştirebileceği özellikte olmalıdır	E	H	Sorular öğrencilerin konuyu tekrarlayabileceği ve bilgilerini pekiştirebileceği özelliktedir	E	K	H
Test maddeleri ölçme tekniklerine göre hazırlanmalıdır	E	H	Test maddeleri ölçme tekniklerine göre hazırlanmıştır	E	K	H
Testlerle ilgili cevap	E	H	Testlerle ilgili cevap	E	K	H

anahtarları verilmelidir			anahtarları veriliyor			
28) Ders kitabı veya kullanılan el kitabındaki laboratuvar etkinlikleri nasıl olmalıdır?			29) Kullandığınız ders kitabındaki veya kullanılan el kitabındaki laboratuvar etkinlikleri nasıldır?			
Öğrencilerin bilişsel kabiliyetlerinin düzeylerine uygun olmalıdır	E	H	Öğrencilerin bilişsel kabiliyetlerinin düzeylerine uygundur	E	K	H
Öğrencilerin sınıf düzeyine uygun el becerileri içermelidir	E	H	Öğrencilerin sınıf düzeyine uygun el becerileri içeriyor	E	K	H
Laboratuvar etkinlikleri araştırmaya sevk etmelidir	E	H	Laboratuvar etkinlikleri araştırmaya sevk ediyor	E	K	H
Öğrenci aktiviteleri açısından tehlikesiz olmalıdır	E	H	Öğrenci aktiviteleri açısından tehlikesizdir	E	K	H
Önerilen malzeme ve cihazlar mevcut olmalıdır	E	H	Önerilen malzeme ve cihazlar mevcuttur	E	K	H
Sunulan içerik ile ilişkili olmalıdır	E	H	Sunulan içerik ile ilişkilidir	E	K	H
Ders kitabı içerisinde yer almalıdır	E	H	Ders kitabı içerisinde yer alıyor	E	K	H
Ayrı bir laboratuvar el kitabı içerisinde yer almalıdır	E	H	Ayrı bir laboratuvar el kitabı içerisinde yer alıyor	E	K	H
Öğretmenlerin tercihinine göre dersin herhangi bir aşamasında uygulanabilir nitelikte olmalıdır	E	H	Öğretmenlerin tercihinine göre dersin herhangi bir aşamasında uygulanabilir niteliktedir	E	K	H
Gerekli ön bilgiler deneyin içerisinde yer almalıdır	E	H	Gerekli ön bilgiler deneyin içerisinde yer alıyor	E	K	H
30) İndeks ve ek sözlükler nasıl olmalıdır?			31) Kullandığınız ders kitabındaki indeks ve ek sözlükler nasıldır?			
Eksözlükler doğru ve eksiksiz olmalıdır	E	H	Eksözlükler doğru ve eksiksizdir	E	K	H
İndeks doğru ve eksiksiz olmalıdır	E	H	İndeks doğru ve eksiksizdir	E	K	H
İçindekiler tablosu doğru ve eksiksiz olmalıdır	E	H	İçindekiler tablosu doğru ve eksiksizdir	E	K	H
Kitabın sonunda kaynaklar belirtilmelidir	E	H	Kitabın sonunda kaynaklar belirtilmiştir	E	K	H
32) Ders kitabının fiziksel görünümü nasıl olmalıdır?			33) Kullandığınız ders kitabı fiziksel görünüm bakımından nasıldır?			
Kapağı çekici olmalıdır	E	H	Kapağı çekicidir	E	K	H
İyi tasarlanmış ve dayanıklı olmalıdır	E	H	İyi tasarlanmış ve dayanıklıdır	E	K	H
Büyük boyutlu ve hantal olmamalıdır	E	H	Büyük boyutlu ve hantal değildir	E	K	H
Yazımı çekici ve ölçüsü okumada kolaylık için uygun olmalıdır	E	H	Yazımı çekici ve ölçüsü okumada kolaylık için uygundur	E	K	H
İyi kağıda basılmış olmalıdır	E	H	İyi kağıda basılmıştır	E	K	H

APPENDIX B

ÖĞRETMENLERİN FİZİK DERS KİTAPLARINI DEĞERLENDİRME ANKETİ

Bu anketin amacı KKTC'deki 9. sınıf öğrencilerine okutulan fizik ders kitaplarında öğretmenlere göre bulunması gereken özellikleri, bu özelliklerin okutulan fizik ders kitaplarında bulunup bulunmadığını ve öğretmenlerin fizik ders kitaplarını nasıl kullandıklarını araştırmaktır.

Anketin verileri Orta Doğu Teknik Üniversitesinde yürütülmekte olan bir yüksek lisans tezinde kullanılacak. Çalışmanın sonuçları ileride basılacak olan fizik ders kitaplarının ideal özelliklere sahip olması için kullanılacaktır. Bu nedenle anketi dikkatlice cevaplamanız rica olunur.

Katılımınız için teşekkürler.

Sevim Kavaz

ODTÜ OFMAE Bölümü Yüksek Lisans Öğrencisi

I. Bölüm

Bu bölümde 16 soru vardır. Uygun gördüğünüz sorularda birden fazla seçeneği işaretleyebilirsiniz.

1) Kaç yıldır öğretmenlik yapıyorsunuz?	() 0-5 () 6-10 () 11-15 () 16-20 () 21 ve üzeri
2) Hangi okulda çalışıyorsunuz?	() Özel Lise () Devlet Lisesi
3) Okulunuzda 9. sınıf öğrencilerine hangi fizik ders kitabı okutuluyor?	
4) Okulunuzda okutulan fizik ders kitabı nasıl seçildi?	() Zümre kararıyla () Okul idaresi tarafından () MEB kararıyla () Diğer:.....
5) Ders kitabı kullanımı ile ilgili aşağıdaki yargılardan hangisi	() Mesleğin ilk yıllarında fizik ders kitabını daha fazla kullanıyordum. Şu anda aynı düzeyde kullanmıyorum. () Mesleğin ilk yıllarında da ders kitabını daha fazla kullanmıyordum. Şimdi de kullanmıyorum.

veya hangileri sizin durumunuza uygunluk göstermektedir?	☐ Şu an da mesleğin ilk yıllarında olduğu gibi ders kitabını aynı düzeyde kullanıyorum. ☐ Bir karşılaştırma yapamam. ☐ Diğer:.....
6) Ders kitaplarıyla ilgili hangisi veya hangileri sizin düşüncenizi yansıtıyor?	☐ Kullanılmasa da olur ☐ Ders kitabına yüzde yüz bağlı kalmak önemlidir ☐ Farklı materyallerle desteklemek gerekir ☐ Gerekli durumlarda kullanılmalı ☐ Diğer:.....
7) Sizce seçilen fizik ders kitabı hangi durumlarda kullanılmalı?	☐ Derse hazırlanırken ☐ Ders işlerken ☐ Soru çözerken ☐ Hiç kullanılmamalı ☐ Diğer:.....
8) Seçilen fizik ders kitabını hangi durumlarda kullanmaktasınız?	☐ Derse hazırlanırken ☐ Ders işlerken ☐ Soru çözerken ☐ Hiç kullanmam ☐ Diğer:.....
9) Sizce ders kitabı ne kadar sıklıkta kullanılmalı?	☐ Ders saati boyunca ☐ Sadece konuyla ilgili soruları çözerken ☐ Konudan konuya değişmeli ☐ Diğer:.....
10) Ders kitabını ne kadar sıklıkta kullanıyorsunuz?	☐ Ders saati boyunca ☐ Sadece konuyla ilgili soruları çözerken ☐ Konudan konuya değişir ☐ Diğer:.....
11) Kitapta sıklıkla kullandığınız kısımlar nelerdir?	☐ Sorular ☐ Deneyler ☐ Konu anlatımı ☐ Diğer:.....
12) Ders kitabını farklı materyallerle destekliyor musunuz?	☐ Evet ☐ Hayır
13) Destekliyorsanız, hangi yolla destekliyorsunuz?	☐ Farklı kaynaklarla ☐ Test kitapçıklarıyla ☐ Daha önceki senelerde hazırladığım ders notlarıyla ☐ İnternette konuyla ilgili bulduğum materyallerle ☐ Diğer:.....
14) Seçilen ders kitabını kullanmıyorsanız, kullanmama nedenleriniz nelerdir?	☐ Konu anlatımı yeterli değil ☐ Konu anlatımında gereksiz ayrıntılar var ☐ Bilgi hataları var ☐ Yeterince örnek soru içermiyor ☐ Soru çeşitleri kısıtlı ☐ ÖSS' ye yönelik bir içeriğe sahip değil ☐ Fiziksel özellikleri kitabı itici hale getiriyor ☐ Diğer:.....

15) Sınıf içerisinde, seçilen ders kitabı dışında farklı bir kitap kullanıyor musunuz?	() Evet () Hayır
16) Kullanıyorsanız, hangi kitap veya kitapları kullanıyorsunuz?	Yazarı:..... Yayınevi:.....

II. Bölüm

Bu bölüm 20 sorudan oluşmaktadır. Evet;E, Hayır; H, ve Kısmen; K harfiyle kodlanmıştır. Size uygun gelen harfin üzerini işaretleyiniz.

17) Fizik ders kitaplarının incelenmesinde sizce kitabın hangi özellikleri değerlendirilmelidir?			18) Okulunuzda fizik ders kitapları seçilirken aşağıdaki özellikler dikkate alınıyor mu?		
İçerik	E	H	İçerik	E	K H
Organizasyon	E	H	Organizasyon	E	K H
Fiziksel özellikler	E	H	Fiziksel özellikler	E	K H
Resim ve grafikler	E	H	Resim ve grafikler	E	K H
Okunabilirlik	E	H	Okunabilirlik	E	K H
Öğretim yaklaşımı	E	H	Öğretim yaklaşımı	E	K H
Ünite sonu öğrenci etkinlikleri	E	H	Ünite sonu öğrenci etkinlikleri	E	K H
İndeks ve ek sözlükler	E	H	İndeks ve ek sözlükler	E	K H
Laboratuar etkinlikleri	E	H	Laboratuar etkinlikleri	E	K H
19) Sizce kitabın içeriğinde bulunması gereken özellikler nelerdir?			20) Kullandığınız ders kitabının içeriği nasıldır?		
Güncel olmalı	E	H	Günceldir	E	K H
Bilimsel açıdan hatasız olmalı	E	H	Bilimsel açıdan hatasızdır	E	K H
Kavram ve prensiplerin gelişimini içermelidir	E	H	Kavram ve prensiplerin gelişimini içeriyor	E	K H
Fen bilimleri, toplum ve teknolojinin birbirine etkilerini vurgulamalıdır	E	H	Fen bilimleri, toplum ve teknolojinin birbirine etkilerini vurguluyor	E	K H
Tüm öğrenciler için uygun olmalıdır	E	H	Tüm öğrenciler için uygundur	E	K H
Müfredata paralel olarak hazırlanmalıdır	E	H	Müfredata paralel olarak hazırlanmıştır	E	K H
Öğrenciyi gelecekteki yaşama hazırlamalıdır	E	H	Öğrenciyi gelecekteki yaşama hazırlıyor	E	K H
Metinler öğrencilerin yaş ve sınıf düzeyine uygun olmalıdır	E	H	Metinler öğrencilerin yaş ve sınıf düzeyine uygundur	E	K H
Metinler öğrencilerin	E	H	Metinler öğrencilerin	E	K H

İlgilerine ve yaşantılarına uygun olmalıdır			İlgilerine ve yaşantılarına uygundur			
Metinler ilgili ünite ile ilişkili olmalıdır	E	H	Metinler ilgili ünite ile ilişkilidir	E	K	H
Metinle açık, anlaşılır ve akıcı biçimde yazılmalıdır	E	H	Metinle açık, anlaşılır ve akıcı biçimde yazılmıştır	E	K	H
Günlük hayattan örnekler içermelidir	E	H	Günlük hayattan örnekler içeriyor	E	K	H
21) Fizik ders kitaplarının organizasyonunda dikkat edilmesi gereken şeyler nelerdir?			22) Kullandığınız ders kitabının organizasyonu nasıldır?			
Ders için MEB'nca öngörülen zaman konuların verilmesi için yeterli olmalıdır	E	H	Ders için MEB'nca öngörülen zaman konuların verilmesi için yeterlidir	E	K	H
Sıralamada öngörülen değişiklikler için esnek olmalıdır	E	H	Sıralamada öngörülen değişiklikler için esnektir	E	K	H
Konu başlıkları anlaşılır olmalıdır	E	H	Konu başlıkları anlaşılırdır	E	K	H
Konular bir önceki sınıf programını tamamlayıcı ve bir sonrakine hazırlayıcı olmalıdır	E	H	Konular bir önceki sınıf programını tamamlayıcı ve bir sonrakine hazırlayıcıdır	E	K	H
Konuların diğer derslerle olan ilişkisi belirtilmelidir	E	H	Konuların diğer derslerle olan ilişkisi belirtilmiştir	E	K	H
Konular ile ÖSS sınavındaki sorular birbirine paralel olmalıdır	E	H	Konular ile ÖSS sınavındaki sorular birbirine paraleldir	E	K	H
Metinlerin içerisinde konu ile ilgili karikatürler bulunmalıdır	E	H	Metinlerin içerisinde konu ile ilgili karikatürler bulunuyor	E	K	H
Metin içerisinde konu ile ilgili kavram ve birimlere ilişkin bulmacalar bulunmalıdır	E	H	Metin içerisinde konu ile ilgili kavram ve birimlere ilişkin bulmacalar vardır	E	K	H
Konular yeterince alt başlık taşınmalıdır	E	H	Konular yeterince alt başlık taşıyor	E	K	H
23) Kitabın okuma düzeyi nasıl olmalıdır?			24) Kullandığınız ders kitabı okunma düzeyi açısından nasıldır?			
Öğrencilerin sınıf düzeyine uygun olmalıdır	E	H	Öğrencilerin sınıf düzeyine uygundur	E	K	H
Teknik kelimeler en az seviyede olmalıdır	E	H	Teknik kelimeler en az seviyededir	E	K	H
Açık, sade ve yaşayan bir dilde yazılmalıdır	E	H	Açık, sade ve yaşayan bir dilde yazılmıştır	E	K	H
Cümleler sınıf düzeyine uygun uzunlukta olmalıdır	E	H	Cümleler sınıf düzeyine uygun uzunluktadır	E	K	H
Yabancı kelimelerin türkçe okunuşları yanında gösterilmelidir	E	H	Yabancı kelimelerin türkçe okunuşları yanında gösterilmiştir	E	K	H
Cümleler somuttan soyuta	E	H	Cümleler somuttan soyuta	E	K	H

doğru sıralanmalıdır			doğru sıralanmıştır			
Metinler görsel imgelerle (resim, grafik, şema) desteklenmelidir	E	H	Metinler görsel imgelerle (resim, grafik, şema) desteklenmiştir	E	K	H
Gereksiz bilgi yoğunluğu olmamalıdır	E	H	Gereksiz bilgi yoğunluğu yoktur	E	K	H
25) Kitap öğretim yaklaşımı bakımından nasıl olmalıdır?			26) Kullandığınız ders kitabı öğretim yaklaşımı bakımından nasıldır?			
Fen bilimleri sorgulama-araştırma olarak tanımlanmalıdır	E	H	Fen bilimleri sorgulama-araştırma olarak tanımlanmıştır	E	K	H
Öğrenci yeteneklerini ortaya çıkarmaya yönelik olmalıdır	E	H	Öğrenci yeteneklerini ortaya çıkarmaya yöneliktir	E	K	H
Ders kitabı öğrencileri motive etmek ve anlamalarını sağlamak için genel amaçlar ve talimatlar içermelidir	E	H	Ders kitabı öğrencileri motive etmek ve anlamalarını sağlamak için genel amaçlar ve talimatlar içeriyor	E	K	H
Dersin amacını ve diğer derslerle olan ilişkisini içermelidir	E	H	Dersin amacını ve diğer derslerle olan ilişkisini içeriyor	E	K	H
Öğrencilere konuların sunumunda hiçbir amacı olmayan aktiviteler yığını haline dönüştürmeden, mantıksal ve stratejik aktiviteler sunmalıdır	E	H	Öğrencilere konuların sunumunda hiçbir amacı olmayan aktiviteler yığını haline dönüştürmeden, mantıksal ve stratejik aktiviteler sunuyor	E	K	H
Konunun öğrenilmesi için gerekli, ön şart niteliğindeki bilgi ve becerileri ifade etmeli	E	H	Konunun öğrenilmesi için gerekli, ön şart niteliğindeki bilgi ve becerileri ifade ediyor	E	K	H
Öğrencilerin sahip olduğu yaygın fikirler konusunda öğretmeni uyarmalı	E	H	Öğrencilerin sahip olduğu yaygın fikirler konusunda öğretmeni uyarıyor	E	K	H
Bilimsel ifadeler verilmeden önce benzer olaylar hakkında öğrencilerin düşüncelerini ortaya çıkarmada öneriler içermeli	E	H	Bilimsel ifadeler verilmeden önce benzer olaylar hakkında öğrencilerin düşüncelerini ortaya çıkarmada öneriler içeriyor	E	K	H
Öğrencilerin sahip olduğu yaygın görüşlere yer vermeli	E	H	Öğrencilerin sahip olduğu yaygın görüşlere yer veriyor	E	K	H
Öğrenmeyi desteklemek için çoklu ve değişken olaylar sağlamalı	E	H	Öğrenmeyi desteklemek için çoklu ve değişken olaylar sağlıyor	E	K	H
Öğrencilerin konularla ilgili olarak kendilerinin yapacakları ya da uygulama imkanı olmayan olaylar için başkası tarafından yapılmış aktiviteleri içermeli	E	H	Öğrencilerin konularla ilgili olarak kendilerinin yapacakları ya da uygulama imkanı olmayan olaylar için başkası tarafından yapılmış aktiviteleri içeriyor	E	K	H
Bilimsel ifadelerin sunumu doğru ve anlaşılabilir ifadeler içermeli	E	H	Bilimsel ifadelerin sunumu doğru ve anlaşılabilir ifadeler içeriyor	E	K	H

Öğrenciler için bilginin kullanımının ve becerilerin sergilenmesinin nasıl olacağı hakkında öneriler içermeli	E	H	Öğrenciler için bilginin kullanımının ve becerilerin sergilenmesinin nasıl olacağı hakkında öneriler içeriyor	E	K	H
Çeşitli olaylarda bilginin kullanımı ve becerilerin uygulanması için öğrencilere ödevler/problemler sunmalı	E	H	Çeşitli olaylarda bilginin kullanımı ve becerilerin uygulanması için öğrencilere ödevler/problemler sunuyor	E	K	H
Devamlı olarak her bir öğrencinin fikirlerini ifade etme, açıklama, doğrulama ve sergilemeleri için öneriler içermeli	E	H	Devamlı olarak her bir öğrencinin fikirlerini ifade etme, açıklama, doğrulama ve sergilemeleri için öneriler içeriyor	E	K	H
Öğrencilerin okudukları olayların uygulamaları hakkında muhakeme ve yorum yapmalarına rehber olmak için bir dizi problem/ödev içermeli	E	H	Öğrencilerin okudukları olayların uygulamaları hakkında muhakeme ve yorum yapmalarına rehber olmak için bir dizi problem/ödev içeriyor	E	K	H
Anlama olmaksızın ezberlenen ifadeleri tekrar etme ya da bir formülü kullanmaya benzer önemsiz ifadelerden öğrenciyi uzak tutan ve fikirlerin uygulanmasını içeren değerlendirme soruları/ödevleri içermeli	E	H	Anlama olmaksızın ezberlenen ifadeleri tekrar etme ya da bir formülü kullanmaya benzer önemsiz ifadelerden öğrenciyi uzak tutan ve fikirlerin uygulanmasını içeren değerlendirme soruları/ödevleri içeriyor	E	K	H
Müfredat programı ve belirtilen bu kriterleri kapsayan bir içerik, eğitim-öğretimin faaliyetlerini amaçlarına uygun bir şekilde değerlendirmeli	E	H	Müfredat programı ve belirtilen bu kriterleri kapsayan bir içerik, eğitim-öğretimin faaliyetlerini amaçlarına uygun bir şekilde değerlendiriyor	E	K	H
Öğretmenlere öğretme konusunda gerekli olan fen, matematik ve teknoloji yönünden kendi bilgi düzeylerini geliştirmeleri için yardım edebilmeli	E	H	Öğretmenlere öğretme konusunda gerekli olan fen, matematik ve teknoloji yönünden kendi bilgi düzeylerini geliştirmeleri için yardım ediyor	E	K	H
Öğretmenlere, öğrencileri dogmatizmadan uzak, soru sormayı cesaretlendiren, yaratıcılığı ödüllendiren ve ilgiyi uyandıran bir öğretme ortamı sağlamaya yardımcı olmalı	E	H	Öğretmenlere, öğrencileri dogmatizmadan uzak, soru sormayı cesaretlendiren, yaratıcılığı ödüllendiren ve ilgiyi uyandıran bir öğretme ortamı sağlamaya yardımcıdır	E	K	H
Öğretmenlere, bütün öğrencilerin yüksek beklentileri olması noktasında teşvik eden, başarılı	E	H	Öğretmenlere, bütün öğrencilerin yüksek beklentileri olması noktasında teşvik eden, başarılı	E	K	H

deneyimlere muktedir kılan ve fen ortamında sorumluluk duygusu sağlayan bir sınıf ortamı yaratmak için yardım edebilmeli			deneyimlere muktedir kılan ve fen ortamında sorumluluk duygusu sağlayan bir sınıf ortamı yaratmak için yardım ediyor			
27) Kitaptaki resim, grafik, şema gibi görsel materyaller nasıl olmalıdır?			28) Kullandığınız ders kitabının resim, şema, grafik gibi görsel materyallerinin özellikleri nasıldır?			
Güncel olmalıdır	E	H	Günceldir	E	K	H
Net ve iyi kalitede olmalıdır	E	H	Net ve iyi kalitededir	E	K	H
Yazılı metnin içeriği ile ilişkili olup uygun biçimde yerleştirilmelidir	E	H	Yazılı metnin içeriği ile ilişkili olup uygun biçimde yerleştirilmiştir	E	K	H
Öğretim için yararlı olmalıdır	E	H	Öğretim için yararlıdır	E	K	H
Şekil, grafik ve şemalar öğrenci seviyesine uygun, açık ve net olmalıdır	E	H	Şekil, grafik ve şemalar öğrenci seviyesine uygun, açık ve nettir	E	K	H
Şekil, grafik ve şemalara ilişkin açıklamalar yapılmalıdır	E	H	Şekil, grafik ve şemalara ilişkin açıklamalar yapılmıştır	E	K	H
29) Ünite sonu öğrenci etkinliklerinin özellikleri sizce neler olmalıdır?			30) Kullandığınız ders kitabının ünite sonu öğrenci etkinlikleri nasıldır?			
Sorular iyi hazırlanmış ve ders tekrarı için uygun olmalıdır	E	H	Sorular iyi hazırlanmış ve ders tekrarı için uygundur	E	K	H
Kelimeler listesi uygun ve yararlı olmalıdır	E	H	Kelimeler listesi uygun ve yararlıdır	E	K	H
Önerilen etkinlik ve projeler düşünmeye sevk etmeli ve cesaretlendirmelidir	E	H	Önerilen etkinlik ve projeler düşünmeye sevk ediyor ve cesaretlendiriyor	E	K	H
Önerilen etkinlikler kolay bulunabilecek ve tehlikesiz maddeler içermelidir	E	H	Önerilen etkinlikler kolay bulunabilecek ve tehlikesiz maddeler içeriyor	E	K	H
Ünite testleri bulunmalıdır	E	H	Ünite testleri bulunuyor	E	K	H
Laboratuvar programı için araç-gereç listesi bulunmalıdır	E	H	Laboratuvar programı için araç-gereç listesi bulunuyor	E	K	H
Kütüphane kaynak materyalleri önerilmelidir	E	H	Kütüphane kaynak materyalleri öneriyor	E	K	H
Konu başında verilen hedef davranışlar ile ünite sonunda verilen değerlendirme soruları içerik ve seviye yönünden birbirlerine uygun olmalıdır	E	H	Konu başında verilen hedef davranışlar ile ünite sonunda verilen değerlendirme soruları içerik ve seviye yönünden birbirlerine uygundur	E	K	H
Ders kitabı öğrencinin birçok bilişsel yeteneğini geliştirmek üzere çözümlü örnekler içermelidir	E	H	Ders kitabı öğrencinin birçok bilişsel yeteneğini geliştirmek üzere çözümlü örnekler içeriyor	E	K	H
Ders kitabında sorulan soruların seviyeleri ile üniversite sınavında sorulan	E	H	Ders kitabında sorulan soruların seviyeleri ile üniversite sınavında sorulan	E	K	H

soruların seviyeleri uygun olmalıdır			soruların seviyeleri uygundur			
Kitaptaki sorular matematiksel çözüm yanında öğrencileri düşünmeye, yorumlamaya ve araştırmaya yönlendirmelidir	E	H	Kitaptaki sorular matematiksel çözüm yanında öğrencileri düşünmeye, yorumlamaya ve araştırmaya yönlendiriyor	E	K	H
Kitapta her öğrenci seviyesine uygun sorular bulunmalıdır	E	H	Kitapta her öğrenci seviyesine uygun sorular bulunuyor	E	K	H
Sorular kolaydan zora doğru sıralanmalıdır	E	H	Sorular kolaydan zora doğru sıralanmıştır	E	K	H
Sorular öğrencilerin konuyu tekrarlayabileceği ve bilgilerini pekiştirebileceği özellikte olmalıdır	E	H	Sorular öğrencilerin konuyu tekrarlayabileceği ve bilgilerini pekiştirebileceği özelliktedir	E	K	H
Test maddeleri ölçme tekniklerine göre hazırlanmalıdır	E	H	Test maddeleri ölçme tekniklerine göre hazırlanmıştır	E	K	H
Testlerle ilgili cevap anahtarları verilmelidir	E	H	Testlerle ilgili cevap anahtarları veriliyor	E	K	H
31) Ders kitabı veya kullanılan el kitabındaki laboratuvar etkinlikleri nasıl olmalıdır?			32) Kullandığınız ders kitabındaki veya kullanılan el kitabındaki laboratuvar etkinlikleri nasıldır?			
Öğrencilerin bilişsel kabiliyetlerinin düzeylerine uygun olmalıdır	E	H	Öğrencilerin bilişsel kabiliyetlerinin düzeylerine uygundur	E	K	H
Öğrencilerin sınıf düzeyine uygun el becerileri içermelidir	E	H	Öğrencilerin sınıf düzeyine uygun el becerileri içeriyor	E	K	H
Laboratuvar etkinlikleri araştırmaya sevk etmelidir	E	H	Laboratuvar etkinlikleri araştırmaya sevk ediyor	E	K	H
Öğrenci aktiviteleri açısından tehlikesiz olmalıdır	E	H	Öğrenci aktiviteleri açısından tehlikesizdir	E	K	H
Önerilen malzeme ve cihazlar mevcut olmalıdır	E	H	Önerilen malzeme ve cihazlar mevcuttur	E	K	H
Sunulan içerik ile ilişkili olmalıdır	E	H	Sunulan içerik ile ilişkilidir	E	K	H
Ders kitabı içerisinde yer almalıdır	E	H	Ders kitabı içerisinde yer alıyor	E	K	H
Ayrı bir laboratuvar el kitabı içerisinde yer almalıdır	E	H	Ayrı bir laboratuvar el kitabı içerisinde yer alıyor	E	K	H
Öğretmenlerin tercihinə göre dersin herhangi bir aşamasında uygulanabilir nitelikte olmalıdır	E	H	Öğretmenlerin tercihinə göre dersin herhangi bir aşamasında uygulanabilir niteliktedir	E	K	H
Gerekli ön bilgiler deneyin içerisinde yer almalıdır	E	H	Gerekli ön bilgiler deneyin içerisinde yer alıyor	E	K	H
33) İndeks ve ek sözlükler nasıl olmalıdır?			34) Kullandığınız ders kitabındaki indeks ve ek sözlükler nasıldır?			
Eksözlükler doğru ve eksiksiz	E	H	Eksözlükler doğru ve	E	K	H

olmalıdır			eksiksizdir			
İndeks doğru ve eksiksiz olmalıdır	E	H	İndeks doğru ve eksiksizdir	E	K	H
İçindekiler tablosu doğru ve eksiksiz olmalıdır	E	H	İçindekiler tablosu doğru ve eksiksizdir	E	K	H
Kitabın sonunda kaynaklar belirtilmelidir	E	H	Kitabın sonunda kaynaklar belirtilmiştir	E	K	H
35) Ders kitabının fiziksel görünümü nasıl olmalıdır?			36) Kullandığınız ders kitabı fiziksel görünüm bakımından nasıldır?			
Kapağı çekici olmalıdır	E	H	Kapağı çekicidir	E	K	H
İyi tasarlanmış ve dayanıklı olmalıdır	E	H	İyi tasarlanmış ve dayanıklıdır	E	K	H
Büyük boyutlu ve hantal olmamalıdır	E	H	Büyük boyutlu ve hantal değildir	E	K	H
Yazımı çekici ve ölçüsü okumada kolaylık için uygun olmalıdır	E	H	Yazımı çekici ve ölçüsü okumada kolaylık için uygundur	E	K	H
İyi kağıda basılmış olmalıdır	E	H	İyi kağıda basılmıştır	E	K	H

APPENDIX C

KİTAP KOMİTESİNİN FİZİK DERS KİTAPLARINI DEĞERLENDİRME ANKETİ

Bu anketin amacı KKTC'deki 9. sınıf öğrencilerine okutulan fizik ders kitaplarında kitap seçen komite üyelerine göre bulunması gereken özellikleri, bu özelliklerin okutulan fizik ders kitaplarında bulunup bulunmadığını ve fizik ders kitaplarının nasıl kullanılması gerektiğini araştırmaktadır.

Anketin verileri Orta Doğu Teknik Üniversitesinde yürütülmekte olan bir yüksek lisans tezinde kullanılacak. Çalışmanın sonuçları ileride basılacak olan fizik ders kitaplarının ideal özelliklere sahip olması için kullanılacaktır. Bu nedenle anketi dikkatlice cevaplamanız rica olunur.

Katılımınız için teşekkürler.

Sevim Kavaz
ODTÜ OFMAE Bölümü Yüksek Lisans Öğrencisi

I. Bölüm

Bu bölümde 6 soru vardır. Uygun gördüğünüz sorularda birden fazla seçeneği işaretleyebilirsiniz.

1) Kaç yıldır kitap seçme komitesinde yer alıyorsunuz?	() 0-5 () 6-10 () 11-15 () 16-20 () 21 ve üzeri
2) Öğretmenlik deneyiminiz oldu mu?	() Evet () Hayır
3) Olduysa, kaç yıl öğretmenlik yaptınız veya yapıyorsunuz?	() 0-5 () 6-10 () 11-15 () 16-20 () 21 ve üzeri
4) Ders kitaplarıyla ilgili hangisi veya hangileri sizin düşüncenizi	() Kullanılmasa da olur () Ders kitabına yüzde yüz bağlı kalmak

yansıtır?	önemlidir () Farklı materyallerle desteklemek gerekir () Gerekli durumlarda kullanılmalı () Diğer:.....
5) Sizce seçilen fizik ders kitabı hangi durumlarda kullanılmalı?	() Derse hazırlanırken () Ders işlerken () Soru çözerken () Hiç kullanılmamalı () Diğer:.....
6) Sizce ders kitabı ne kadar sıklıkta kullanılmalı?	() Ders saati boyunca () Sadece konuyla ilgili soruları çözerken () Konudan konuya değişmeli () Diğer:.....

II. Bölüm

Bu bölüm 20 sorudan oluşmaktadır. Evet;E, Hayır; H, ve Kısmen; K harfiyle kodlanmıştır. Size uygun gelen harfin üzerine işaretleyiniz.

7) Fizik ders kitaplarının incelenmesinde sizce kitabın hangi özellikleri değerlendirilmelidir?			8) Fizik ders kitaplarını seçerken aşağıdaki özellikleri dikkate alıyor musunuz?			
İçerik	E	H	İçerik	E	K	H
Organizasyon	E	H	Organizasyon	E	K	H
Fiziksel özellikler	E	H	Fiziksel özellikler	E	K	H
Resim ve grafikler	E	H	Resim ve grafikler	E	K	H
Okunabilirlik	E	H	Okunabilirlik	E	K	H
Öğretim yaklaşımı	E	H	Öğretim yaklaşımı	E	K	H
Ünite sonu öğrenci etkinlikleri	E	H	Ünite sonu öğrenci etkinlikleri	E	K	H
İndeks ve ek sözlükler	E	H	İndeks ve ek sözlükler	E	K	H
Laboratuvar etkinlikleri	E	H	Laboratuvar etkinlikleri	E	K	H
9) Sizce kitabın içeriğinde bulunması gereken özellikler nelerdir?			10) Lise 1 ÖSS sınıfları için seçtiğiniz ders kitabının içeriği nasıldır?			
Güncel olmalı	E	H	Günceldir	E	K	H
Bilimsel açıdan hatasız olmalı	E	H	Bilimsel açıdan hatasızdır	E	K	H
Kavram ve prensiplerin gelişimini içermelidir	E	H	Kavram ve prensiplerin gelişimini içeriyor	E	K	H
Fen bilimleri, toplum ve teknolojinin birbirine etkilerini vurgulamalıdır	E	H	Fen bilimleri, toplum ve teknolojinin birbirine etkilerini vurguluyor	E	K	H
Tüm öğrenciler için uygun olmalıdır	E	H	Tüm öğrenciler için uygundur	E	K	H
Müfredata paralel olarak hazırlanmalıdır	E	H	Müfredata paralel olarak hazırlanmıştır	E	K	H

Öğrenciyi gelecekteki yaşama hazırlamalıdır	E	H	Öğrenciyi gelecekteki yaşama hazırlıyor	E	K	H
Metinler öğrencilerin yaş ve sınıf düzeyine uygun olmalıdır	E	H	Metinler öğrencilerin yaş ve sınıf düzeyine uygundur	E	K	H
Metinler öğrencilerin ilgilerine ve yaşantılarına uygun olmalıdır	E	H	Metinler öğrencilerin ilgilerine ve yaşantılarına uygundur	E	K	H
Metinler ilgili ünite ile ilişkili olmalıdır	E	H	Metinler ilgili ünite ile ilişkilidir	E	K	H
Metinle açık, anlaşılır ve akıcı biçimde yazılmalıdır	E	H	Metinle açık, anlaşılır ve akıcı biçimde yazılmıştır	E	K	H
Günlük hayattan örnekler içermelidir	E	H	Günlük hayattan örnekler içeriyor	E	K	H
11) Fizik ders kitaplarının organizasyonunda dikkat edilmesi gereken şeyler nelerdir?			12) Seçtiğiniz ders kitabının organizasyonu nasıldır?			
Ders için MEB’nca öngörülen zaman konuların verilmesi için yeterli olmalıdır	E	H	Ders için MEB’nca öngörülen zaman konuların verilmesi için yeterlidir	E	K	H
Sıralamada öngörülen değişiklikler için esnek olmalıdır	E	H	Sıralamada öngörülen değişiklikler için esnektir	E	K	H
Konu başlıkları anlaşılır olmalıdır	E	H	Konu başlıkları anlaşılırdır	E	K	H
Konular bir önceki sınıf programını tamamlayıcı ve bir sonrakine hazırlayıcı olmalıdır	E	H	Konular bir önceki sınıf programını tamamlayıcı ve bir sonrakine hazırlayıcıdır	E	K	H
Konuların diğer derslerle olan ilişkisi belirtilmelidir	E	H	Konuların diğer derslerle olan ilişkisi belirtilmiştir	E	K	H
Konular ile ÖSS sınavındaki sorular birbirine paralel olmalıdır	E	H	Konular ile ÖSS sınavındaki sorular birbirine paraleldir	E	K	H
Metinlerin içerisinde konu ile ilgili karikatürler bulunmalıdır	E	H	Metinlerin içerisinde konu ile ilgili karikatürler bulunuyor	E	K	H
Metin içerisinde konu ile ilgili kavram ve birimlere ilişkin bulmacalar bulunmalıdır	E	H	Metin içerisinde konu ile ilgili kavram ve birimlere ilişkin bulmacalar vardır	E	K	H
Konular yeterince alt başlık taşımalıdır	E	H	Konular yeterince alt başlık taşıyor	E	K	H
13) Kitabın okuma düzeyi nasıl olmalıdır?			14) Seçtiğiniz ders kitabı okuma düzeyi açısından nasıldır?			
Öğrencilerin sınıf düzeyine uygun olmalıdır	E	H	Öğrencilerin sınıf düzeyine uygundur	E	K	H
Teknik kelimeler en az seviyede olmalıdır	E	H	Teknik kelimeler en az seviyededir	E	K	H
Açık, sade ve yaşayan bir dilde yazılmalıdır	E	H	Açık, sade ve yaşayan bir dilde yazılmıştır	E	K	H

Cümleler sınıf düzeyine uygun uzunlukta olmalıdır	E	H	Cümleler sınıf düzeyine uygun uzunluktadır	E	K	H
Yabancı kelimelerin türkçe okunuşları yanında gösterilmelidir	E	H	Yabancı kelimelerin türkçe okunuşları yanında gösterilmiştir	E	K	H
Cümleler somuttan soyuta doğru sıralanmalıdır	E	H	Cümleler somuttan soyuta doğru sıralanmıştır	E	K	H
Metinler görsel imgelerle (resim, grafik, şema) desteklenmelidir	E	H	Metinler görsel imgelerle (resim, grafik, şema) desteklenmiştir	E	K	H
Gereksiz bilgi yoğunluğu olmamalıdır	E	H	Gereksiz bilgi yoğunluğu yoktur	E	K	H
15) Kitap öğretim yaklaşımı bakımından nasıl olmalıdır?			16) Seçtiğiniz ders kitabı öğretim yaklaşımı bakımından nasıldır?			
Fen bilimleri sorgulama-araştırma olarak tanımlanmalıdır	E	H	Fen bilimleri sorgulama-araştırma olarak tanımlanmıştır	E	K	H
Öğrenci yeteneklerini ortaya çıkarmaya yönelik olmalıdır	E	H	Öğrenci yeteneklerini ortaya çıkarmaya yöneliktir	E	K	H
Ders kitabı öğrencileri motive etmek ve anlamalarını sağlamak için genel amaçlar ve talimatlar içermelidir	E	H	Ders kitabı öğrencileri motive etmek ve anlamalarını sağlamak için genel amaçlar ve talimatlar içeriyor	E	K	H
Dersin amacını ve diğer derslerle olan ilişkisini içermelidir	E	H	Dersin amacını ve diğer derslerle olan ilişkisini içeriyor	E	K	H
Öğrencilere konuların sunumunda hiçbir amacı olmayan aktiviteler yığını haline dönüştürmeden, mantıksal ve stratejik aktiviteler sunmalıdır	E	H	Öğrencilere konuların sunumunda hiçbir amacı olmayan aktiviteler yığını haline dönüştürmeden, mantıksal ve stratejik aktiviteler sunuyor	E	K	H
Konunun öğrenilmesi için gerekli, ön şart niteliğindeki bilgi ve becerileri ifade etmeli	E	H	Konunun öğrenilmesi için gerekli, ön şart niteliğindeki bilgi ve becerileri ifade ediyor	E	K	H
Öğrencilerin sahip olduğu yaygın fikirler konusunda öğretmeni uyarmalı	E	H	Öğrencilerin sahip olduğu yaygın fikirler konusunda öğretmeni uyarıyor	E	K	H
Bilimsel ifadeler verilmeden önce benzer olaylar hakkında öğrencilerin düşüncelerini ortaya çıkarma da öneriler içermeli	E	H	Bilimsel ifadeler verilmeden önce benzer olaylar hakkında öğrencilerin düşüncelerini ortaya çıkarma da öneriler içeriyor	E	K	H
Öğrencilerin sahip olduğu yaygın görüşlere yer vermeli	E	H	Öğrencilerin sahip olduğu yaygın görüşlere yer veriyor	E	K	H
Öğrenmeyi desteklemek için çoklu ve değişken olaylar sağlamalı	E	H	Öğrenmeyi desteklemek için çoklu ve değişken olaylar sağlıyor	E	K	H
Öğrencilerin konularla ilgili olarak kendilerinin yapacakları ya da uygulama	E	H	Öğrencilerin konularla ilgili olarak kendilerinin yapacakları ya da uygulama	E	K	H

imkanı olmayan olaylar için başkası tarafından yapılmış aktiviteleri içermeli			imkanı olmayan olaylar için başkası tarafından yapılmış aktiviteleri içeriyor			
Bilimsel ifadelerin sunumu doğru ve anlaşılabilir ifadeler içermeli	E	H	Bilimsel ifadelerin sunumu doğru ve anlaşılabilir ifadeler içeriyor	E	K	H
Öğrenciler için bilginin kullanımının ve becerilerin sergilenmesinin nasıl olacağı hakkında öneriler içermeli	E	H	Öğrenciler için bilginin kullanımının ve becerilerin sergilenmesinin nasıl olacağı hakkında öneriler içeriyor	E	K	H
Çeşitli olaylarda bilginin kullanımı ve becerilerin uygulanması için öğrencilere ödevler/problemler sunmalı	E	H	Çeşitli olaylarda bilginin kullanımı ve becerilerin uygulanması için öğrencilere ödevler/problemler sunuyor	E	K	H
Devamlı olarak her bir öğrencinin fikirlerini ifade etme, açıklama, doğrulama ve sergilemeleri için öneriler içermeli	E	H	Devamlı olarak her bir öğrencinin fikirlerini ifade etme, açıklama, doğrulama ve sergilemeleri için öneriler içeriyor	E	K	H
Öğrencilerin okudukları olayların uygulamaları hakkında muhakeme ve yorum yapmalarına rehber olmak için bir dizi problem/ödev içermeli	E	H	Öğrencilerin okudukları olayların uygulamaları hakkında muhakeme ve yorum yapmalarına rehber olmak için bir dizi problem/ödev içeriyor	E	K	H
Anlama olmaksızın ezberlenen ifadeleri tekrar etme ya da bir formülü kullanmaya benzer önemsiz ifadelerden öğrenciyi uzak tutan ve fikirlerin uygulanmasını içeren değerlendirme soruları/ödevleri içermeli	E	H	Anlama olmaksızın ezberlenen ifadeleri tekrar etme ya da bir formülü kullanmaya benzer önemsiz ifadelerden öğrenciyi uzak tutan ve fikirlerin uygulanmasını içeren değerlendirme soruları/ödevleri içeriyor	E	K	H
Müfredat programı ve belirtilen bu kriterleri kapsayan bir içerik, eğitim-öğretimin faaliyetlerini amaçlarına uygun bir şekilde değerlendirmeli	E	H	Müfredat programı ve belirtilen bu kriterleri kapsayan bir içerik, eğitim-öğretimin faaliyetlerini amaçlarına uygun bir şekilde değerlendiriyor	E	K	H
Öğretmenlere öğretme konusunda gerekli olan fen, matematik ve teknoloji yönünden kendi bilgi düzeylerini geliştirmeleri için yardım edebilmeli	E	H	Öğretmenlere öğretme konusunda gerekli olan fen, matematik ve teknoloji yönünden kendi bilgi düzeylerini geliştirmeleri için yardım ediyor	E	K	H
Öğretmenlere, öğrencileri dogmatizmadan uzak, soru sormayı cesaretlendiren, yaratıcılığı ödüllendiren ve ilgiyi uyandıran bir öğretme	E	H	Öğretmenlere, öğrencileri dogmatizmadan uzak, soru sormayı cesaretlendiren, yaratıcılığı ödüllendiren ve ilgiyi uyandıran bir öğretme	E	K	H

ortamı sağlamaya yardımcı olmalı			ortamı sağlamaya yardımcıdır			
Öğretmenlere, bütün öğrencilerin yüksek beklentileri olması noktasında teşvik eden, başarılı deneyimlere muktedir kılan ve fen ortamında sorumluluk duygusu sağlayan bir sınıf ortamı yaratmak için yardım edebilmeli	E	H	Öğretmenlere, bütün öğrencilerin yüksek beklentileri olması noktasında teşvik eden, başarılı deneyimlere muktedir kılan ve fen ortamında sorumluluk duygusu sağlayan bir sınıf ortamı yaratmak için yardım ediyor	E	K	H
17) Kitaptaki resim, grafik, şema gibi görsel materyaller nasıl olmalıdır?			18) Seçtiğiniz ders kitabının resim, şema, grafik gibi görsel materyallerinin özellikleri nasıldır?			
Güncel olmalıdır	E	H	Günceldir	E	K	H
Net ve iyi kalitede olmalıdır	E	H	Net ve iyi kalitededir	E	K	H
Yazılı metnin içeriği ile ilişkili olup uygun biçimde yerleştirilmelidir	E	H	Yazılı metnin içeriği ile ilişkili olup uygun biçimde yerleştirilmiştir	E	K	H
Öğretim için yararlı olmalıdır	E	H	Öğretim için yararlıdır	E	K	H
Şekil, grafik ve şemalar öğrenci seviyesine uygun, açık ve net olmalıdır	E	H	Şekil, grafik ve şemalar öğrenci seviyesine uygun, açık ve nettir	E	K	H
Şekil, grafik ve şemalara ilişkin açıklamalar yapılmalıdır	E	H	Şekil, grafik ve şemalara ilişkin açıklamalar yapılmıştır	E	K	H
19) Ünite sonu öğrenci etkinliklerinin özellikleri sizce neler olmalıdır?			20) Seçtiğiniz ders kitabının ünite sonu öğrenci etkinlikleri nasıldır?			
Sorular iyi hazırlanmış ve ders tekrarı için uygun olmalıdır	E	H	Sorular iyi hazırlanmış ve ders tekrarı için uygundur	E	K	H
Kelimeler listesi uygun ve yararlı olmalıdır	E	H	Kelimeler listesi uygun ve yararlıdır	E	K	H
Önerilen etkinlik ve projeler düşünmeye sevk etmeli ve cesaretlendirmelidir	E	H	Önerilen etkinlik ve projeler düşünmeye sevk ediyor ve cesaretlendiriyor	E	K	H
Önerilen etkinlikler kolay bulunabilecek ve tehlikesiz maddeler içermelidir	E	H	Önerilen etkinlikler kolay bulunabilecek ve tehlikesiz maddeler içeriyor	E	K	H
Ünite testleri bulunmalıdır	E	H	Ünite testleri bulunuyor	E	K	H
Laboratuvar programı için araç-gereç listesi bulunmalıdır	E	H	Laboratuvar programı için araç-gereç listesi bulunuyor	E	K	H
Kütüphane kaynak materyalleri önerilmelidir	E	H	Kütüphane kaynak materyalleri öneriyor	E	K	H
Konu başında verilen hedef davranışlar ile ünite sonunda verilen değerlendirme soruları içerik ve seviye yönünden birbirlerine uygun olmalıdır	E	H	Konu başında verilen hedef davranışlar ile ünite sonunda verilen değerlendirme soruları içerik ve seviye yönünden birbirlerine uygundur	E	K	H
Ders kitabı öğrencinin birçok			Ders kitabı öğrencinin birçok			

bilişsel yeteneğini geliştirmek üzere çözümlü örnekler içermelidir	E	H	bilişsel yeteneğini geliştirmek üzere çözümlü örnekler içeriyor	E	K	H
Ders kitabında sorulan soruların seviyeleri ile üniversite sınavında sorulan soruların seviyeleri uygun olmalıdır	E	H	Ders kitabında sorulan soruların seviyeleri ile üniversite sınavında sorulan soruların seviyeleri uygundur	E	K	H
Kitaptaki sorular matematiksel çözüm yanında öğrencileri düşünmeye, yorumlamaya ve araştırmaya yönlendirmelidir	E	H	Kitaptaki sorular matematiksel çözüm yanında öğrencileri düşünmeye, yorumlamaya ve araştırmaya yönlendiriyor	E	K	H
Kitapta her öğrenci seviyesine uygun sorular bulunmalıdır	E	H	Kitapta her öğrenci seviyesine uygun sorular bulunuyor	E	K	H
Sorular kolaydan zora doğru sıralanmalıdır	E	H	Sorular kolaydan zora doğru sıralanmıştır	E	K	H
Sorular öğrencilerin konuyu tekrarlayabileceği ve bilgilerini pekiştirebileceği özellikte olmalıdır	E	H	Sorular öğrencilerin konuyu tekrarlayabileceği ve bilgilerini pekiştirebileceği özelliktedir	E	K	H
Test maddeleri ölçme tekniklerine göre hazırlanmalıdır	E	H	Test maddeleri ölçme tekniklerine göre hazırlanmıştır	E	K	H
Testlerle ilgili cevap anahtarları verilmelidir	E	H	Testlerle ilgili cevap anahtarları veriliyor	E	K	H
21) Ders kitabı veya kullanılan el kitabındaki laboratuvar etkinlikleri nasıl olmalıdır?			22) Seçtiğiniz ders kitabındaki veya el kitabındaki laboratuvar etkinlikleri nasıldır?			
Öğrencilerin bilişsel kabiliyetlerinin düzeylerine uygun olmalıdır	E	H	Öğrencilerin bilişsel kabiliyetlerinin düzeylerine uygundur	E	K	H
Öğrencilerin sınıf düzeyine uygun el becerileri içermelidir	E	H	Öğrencilerin sınıf düzeyine uygun el becerileri içeriyor	E	K	H
Laboratuvar etkinlikleri araştırmaya sevk etmelidir	E	H	Laboratuvar etkinlikleri araştırmaya sevk ediyor	E	K	H
Öğrenci aktiviteleri açısından tehlikesiz olmalıdır	E	H	Öğrenci aktiviteleri açısından tehlikesizdir	E	K	H
Önerilen malzeme ve cihazlar mevcut olmalıdır	E	H	Önerilen malzeme ve cihazlar mevcuttur	E	K	H
Sunulan içerik ile ilişkili olmalıdır	E	H	Sunulan içerik ile ilişkilidir	E	K	H
Ders kitabı içerisinde yer almalıdır	E	H	Ders kitabı içerisinde yer alıyor	E	K	H
Ayrı bir laboratuvar el kitabı içerisinde yer almalıdır	E	H	Ayrı bir laboratuvar el kitabı içerisinde yer alıyor	E	K	H
Öğretmenlerin tercihinə göre dersin herhangi bir aşamasında uygulanabilir nitelikte olmalıdır	E	H	Öğretmenlerin tercihinə göre dersin herhangi bir aşamasında uygulanabilir niteliktedir	E	K	H

Gerekli ön bilgiler deneyin içerisinde yer almalıdır	E	H	Gerekli ön bilgiler deneyin içerisinde yer alıyor	E	K	H
23) İndeks ve ek sözlükler nasıl olmalıdır?			24) Seçtiğiniz ders kitabındaki indeks ve ek sözlükler nasıldır?			
Eksözlükler doğru ve eksiksiz olmalıdır	E	H	Eksözlükler doğru ve eksiksizdir	E	K	H
İndeks doğru ve eksiksiz olmalıdır	E	H	İndeks doğru ve eksiksizdir	E	K	H
İçindekiler tablosu doğru ve eksiksiz olmalıdır	E	H	İçindekiler tablosu doğru ve eksiksizdir	E	K	H
Kitabın sonunda kaynaklar belirtilmelidir	E	H	Kitabın sonunda kaynaklar belirtilmiştir	E	K	H
25) Ders kitabının fiziksel görünümü nasıl olmalıdır?			26) Seçtiğiniz ders kitabı fiziksel görünüm bakımından nasıldır?			
Kapağı çekici olmalıdır	E	H	Kapağı çekicidir	E	K	H
İyi tasarlanmış ve dayanıklı olmalıdır	E	H	İyi tasarlanmış ve dayanıklıdır	E	K	H
Büyük boyutlu ve hantal olmamalıdır	E	H	Büyük boyutlu ve hantal değildir	E	K	H
Yazımı çekici ve ölçüsü okumada kolaylık için uygun olmalıdır	E	H	Yazımı çekici ve ölçüsü okumada kolaylık için uygundur	E	K	H
İyi kağıda basılmış olmalıdır	E	H	İyi kağıda basılmıştır	E	K	H

APPENDIX D

FİZİK DERS KİTABI YAZARLARININ FİZİK DERS KİTAPLARINI DEĞERLENDİRME ANKETİ

Bu anketin amacı KKTC'deki 9. sınıf öğrencilerine okutulan fizik ders kitaplarında kitap yazarlarına göre bulunması gereken özellikleri, bu özelliklerin okutulan fizik ders kitaplarında bulunup bulunmadığını ve öğretmenlerin fizik ders kitaplarını nasıl kullandıklarını araştırmaktır.

Anketin verileri Orta Doğu Teknik Üniversitesinde yürütülmekte olan bir yüksek lisans tezinde kullanılacak. Çalışmanın sonuçları ileride basılacak olan fizik ders kitaplarının ideal özelliklere sahip olması için kullanılacaktır. Bu nedenle anketi dikkatlice cevaplamanız rica olunur.

Katılımınız için teşekkürler.

Sevim Kavaz

ODTÜ OFMAE Bölümü Yüksek Lisans Öğrencisi

I. Bölüm

Bu bölümde 6 soru vardır. Uygun gördüğünüz sorularda birden fazla seçeneği işaretleyebilirsiniz.

1) Kaç yıldır ders kitabı yazıyorsunuz?	() 0-5 () 6-10 () 11-15 () 16-20 () 21 ve üzeri
2) Öğretmenlik deneyiminiz oldu mu?	() Evet () Hayır
3) Olduysa, kaç yıl öğretmenlik yaptınız veya yapıyorsunuz?	() 0-5 () 6-10 () 11-15 () 16-20 () 21 ve üzeri
4) Ders kitaplarıyla ilgili hangisi veya hangileri sizin düşüncenizi yansıtıyor?	() Kullanılmasa da olur () Ders kitabına yüzde yüz bağlı kalmak önemlidir () Farklı materyallerle desteklemek gerekir () Gerekli durumlarda kullanılmalı () Diğer:.....
5) Sizce seçilen fizik ders kitabı hangi durumlarda	() Derse hazırlanırken () Ders işlerken () Soru çözerken () Hiç kullanılmamalı

kullanılmalı?	() Diğer:.....
6) Sizce ders kitabı ne kadar sıklıkta kullanılmalı?	() Ders saati boyunca () Sadece konuyla ilgili soruları çözerken () Konudan konuya değişmeli () Diğer:.....

II. Bölüm

Bu bölüm 20 sorudan oluşmaktadır. Evet;E, Hayır; H, ve Kısmen; K harfiyle kodlanmıştır. Size uygun gelen harfin üzerine işaretleyiniz.

7) Fizik ders kitaplarının incelenmesinde sizce kitabın hangi özellikleri değerlendirilmelidir?			8) Fizik ders kitaplarını yazarken aşağıdaki özellikleri dikkate alıyor musunuz?		
İçerik	E	H	İçerik	E	K H
Organizasyon	E	H	Organizasyon	E	K H
Fiziksel özellikler	E	H	Fiziksel özellikler	E	K H
Resim ve grafikler	E	H	Resim ve grafikler	E	K H
Okunabilirlik	E	H	Okunabilirlik	E	K H
Öğretim yaklaşımı	E	H	Öğretim yaklaşımı	E	K H
Ünite sonu öğrenci etkinlikleri	E	H	Ünite sonu öğrenci etkinlikleri	E	K H
İndeks ve ek sözlükler	E	H	İndeks ve ek sözlükler	E	K H
Laboratuar etkinlikleri	E	H	Laboratuar etkinlikleri	E	K H
9) Sizce kitabın içeriğinde bulunması gereken özellikler nelerdir?			10) Yazdığınız ders kitabının içeriği nasıldır?		
Güncel olmalı	E	H	Günceldir	E	K H
Bilimsel açıdan hatasız olmalı	E	H	Bilimsel açıdan hatasızdır	E	K H
Kavram ve prensiplerin gelişimini içermelidir	E	H	Kavram ve prensiplerin gelişimini içeriyor	E	K H
Fen bilimleri, toplum ve teknolojinin birbirine etkilerini vurgulamalıdır	E	H	Fen bilimleri, toplum ve teknolojinin birbirine etkilerini vurguluyor	E	K H
Tüm öğrenciler için uygun olmalıdır	E	H	Tüm öğrenciler için uygundur	E	K H
Müfredata paralel olarak hazırlanmalıdır	E	H	Müfredata paralel olarak hazırlanmıştır	E	K H
Öğrenciyi gelecekteki yaşama hazırlamalıdır	E	H	Öğrenciyi gelecekteki yaşama hazırlıyor	E	K H
Metinler öğrencilerin yaş ve sınıf düzeyine uygun olmalıdır	E	H	Metinler öğrencilerin yaş ve sınıf düzeyine uygundur	E	K H
Metinler öğrencilerin ilgilerine ve yaşantılarına uygun olmalıdır	E	H	Metinler öğrencilerin ilgilerine ve yaşantılarına uygundur	E	K H
Metinler ilgili ünite ile ilişkili olmalıdır	E	H	Metinler ilgili ünite ile ilişkilidir	E	K H
Metinle açık, anlaşılır ve akıcı	E	H	Metinle açık, anlaşılır ve akıcı	E	K H

biçimde yazılmalıdır			biçimde yazılmıştır			
Günlük hayattan örnekler içermelidir	E	H	Günlük hayattan örnekler içeriyor	E	K	H
11) Fizik ders kitaplarının organizasyonunda dikkat edilmesi gereken şeyler nelerdir?			12) Yazdığınız ders kitabının organizasyonu nasıldır?			
Ders için MEB'nca öngörülen zaman konuların verilmesi için yeterli olmalıdır	E	H	Ders için MEB'nca öngörülen zaman konuların verilmesi için yeterlidir	E	K	H
Sıralamada öngörülen değişiklikler için esnek olmalıdır	E	H	Sıralamada öngörülen değişiklikler için esneklik vardır	E	K	H
Konu başlıkları anlaşılır olmalıdır	E	H	Konu başlıkları anlaşılırdır	E	K	H
Konular bir önceki sınıf programını tamamlayıcı ve bir sonrakine hazırlayıcı olmalıdır	E	H	Konular bir önceki sınıf programını tamamlayıcı ve bir sonrakine hazırlayıcıdır	E	K	H
Konuların diğer derslerle olan ilişkisi belirtilmelidir	E	H	Konuların diğer derslerle olan ilişkisi belirtilmiştir	E	K	H
Konular ile ÖSS sınavındaki sorular birbirine paralel olmalıdır	E	H	Konular ile ÖSS sınavındaki sorular birbirine paraleldir	E	K	H
Metinlerin içerisinde konu ile ilgili karikatürler bulunmalıdır	E	H	Metinlerin içerisinde konu ile ilgili karikatürler bulunuyor	E	K	H
Metin içerisinde konu ile ilgili kavram ve birimlere ilişkin bulmacalar bulunmalıdır	E	H	Metin içerisinde konu ile ilgili kavram ve birimlere ilişkin bulmacalar vardır	E	K	H
Konular yeterince alt başlık taşımaktadır	E	H	Konular yeterince alt başlık taşıyor	E	K	H
13) Kitabın okuma düzeyi nasıl olmalıdır?			14) Yazdığınız ders kitabı okunma düzeyi açısından nasıldır?			
Öğrencilerin sınıf düzeyine uygun olmalıdır	E	H	Öğrencilerin sınıf düzeyine uygundur	E	K	H
Teknik kelimeler en az seviyede olmalıdır	E	H	Teknik kelimeler en az seviyededir	E	K	H
Açık, sade ve yaşayan bir dilde yazılmalıdır	E	H	Açık, sade ve yaşayan bir dilde yazılmıştır	E	K	H
Cümleler sınıf düzeyine uygun uzunlukta olmalıdır	E	H	Cümleler sınıf düzeyine uygun uzunluktadır	E	K	H
Yabancı kelimelerin türkçe okunuşları yanında gösterilmelidir	E	H	Yabancı kelimelerin türkçe okunuşları yanında gösterilmiştir	E	K	H
Cümleler somuttan soyuta doğru sıralanmalıdır	E	H	Cümleler somuttan soyuta doğru sıralanmıştır	E	K	H
Metinler görsel imgelerle (resim, grafik, şema) desteklenmelidir	E	H	Metinler görsel imgelerle (resim, grafik, şema) desteklenmiştir	E	K	H
Gereksiz bilgi yoğunluğu	E	H	Gereksiz bilgi yoğunluğu	E	K	H

olmamalıdır			yoktur			
15) Kitap öğretim yaklaşımı bakımından nasıl olmalıdır?			16) Yazdığınız ders kitabı öğretim yaklaşımı bakımından nasıldır?			
Fen bilimlerini sorgulama-araştırma olarak tanımlanmalıdır	E	H	Fen bilimlerini sorgulama-araştırma olarak tanımlanmıştır	E	K	H
Öğrenci yeteneklerini ortaya çıkarmaya yönelik olmalıdır	E	H	Öğrenci yeteneklerini ortaya çıkarmaya yöneliktir	E	K	H
Ders kitabı öğrencileri motive etmek ve anlamalarını sağlamak için genel amaçlar ve talimatlar içermelidir	E	H	Ders kitabı öğrencileri motive etmek ve anlamalarını sağlamak için genel amaçlar ve talimatlar içeriyor	E	K	H
Dersin amacını ve diğer derslerle olan ilişkisini içermelidir	E	H	Dersin amacını ve diğer derslerle olan ilişkisini içeriyor	E	K	H
Öğrencilere konuların sunumunda hiçbir amacı olmayan aktiviteler yığını haline dönüştürmeden, mantıksal ve stratejik aktiviteler sunmalıdır	E	H	Öğrencilere konuların sunumunda hiçbir amacı olmayan aktiviteler yığını haline dönüştürmeden, mantıksal ve stratejik aktiviteler sunuyor	E	K	H
Konunun öğrenilmesi için gerekli, ön şart niteliğindeki bilgi ve becerileri ifade etmeli	E	H	Konunun öğrenilmesi için gerekli, ön şart niteliğindeki bilgi ve becerileri ifade ediyor	E	K	H
Öğrencilerin sahip olduğu yaygın fikirler konusunda öğretmeni uyarmalı	E	H	Öğrencilerin sahip olduğu yaygın fikirler konusunda öğretmeni uyarıyor	E	K	H
Bilimsel ifadeler verilmeden önce benzer olaylar hakkında öğrencilerin düşüncelerini ortaya çıkarmada öneriler içermeli	E	H	Bilimsel ifadeler verilmeden önce benzer olaylar hakkında öğrencilerin düşüncelerini ortaya çıkarmada öneriler içeriyor	E	K	H
Öğrencilerin sahip olduğu yaygın görüşlere yer vermeli	E	H	Öğrencilerin sahip olduğu yaygın görüşlere yer veriyor	E	K	H
Öğrenmeyi desteklemek için çoklu ve değişken olaylar sağlamalı	E	H	Öğrenmeyi desteklemek için çoklu ve değişken olaylar sağlıyor	E	K	H
Öğrencilerin konularla ilgili olarak kendilerinin yapacakları ya da uygulama imkanı olmayan olaylar için başkası tarafından yapılmış aktiviteleri içermeli	E	H	Öğrencilerin konularla ilgili olarak kendilerinin yapacakları ya da uygulama imkanı olmayan olaylar için başkası tarafından yapılmış aktiviteleri içeriyor	E	K	H
Bilimsel ifadelerin sunumu doğru ve anlaşılabilir ifadeler içermeli	E	H	Bilimsel ifadelerin sunumu doğru ve anlaşılabilir ifadeler içeriyor	E	K	H
Öğrenciler için bilginin kullanımının ve becerilerin sergilenmesinin nasıl olacağı hakkında öneriler içermeli	E	H	Öğrenciler için bilginin kullanımının ve becerilerin sergilenmesinin nasıl olacağı hakkında öneriler içeriyor	E	K	H
Çeşitli olaylarda bilginin			Çeşitli olaylarda bilginin			

kullanımı ve becerilerin uygulanması için öğrencilere ödevler/problemler sunmalı	E	H	kullanımı ve becerilerin uygulanması için öğrencilere ödevler/problemler sunuyor	E	K	H
Devamlı olarak her bir öğrencinin fikirlerini ifade etme, açıklama, doğrulama ve sergilemeleri için öneriler içermeli	E	H	Devamlı olarak her bir öğrencinin fikirlerini ifade etme, açıklama, doğrulama ve sergilemeleri için öneriler içeriyor	E	K	H
Öğrencilerin okudukları olayların uygulamaları hakkında muhakeme ve yorum yapmalarına rehber olmak için bir dizi problem/ödev içermeli	E	H	Öğrencilerin okudukları olayların uygulamaları hakkında muhakeme ve yorum yapmalarına rehber olmak için bir dizi problem/ödev içeriyor	E	K	H
Anlama olmaksızın ezberlenen ifadeleri tekrar etme ya da bir formülü kullanmaya benzer önemsiz ifadelerden öğrenciyi uzak tutan ve fikirlerin uygulanmasını içeren değerlendirme soruları/ödevleri içermeli	E	H	Anlama olmaksızın ezberlenen ifadeleri tekrar etme ya da bir formülü kullanmaya benzer önemsiz ifadelerden öğrenciyi uzak tutan ve fikirlerin uygulanmasını içeren değerlendirme soruları/ödevleri içeriyor	E	K	H
Müfredat programı ve belirtilen bu kriterleri kapsayan bir içerik, eğitim-öğretimin faaliyetlerini amaçlarına uygun bir şekilde değerlendirmeli	E	H	Müfredat programı ve belirtilen bu kriterleri kapsayan bir içerik, eğitim-öğretimin faaliyetlerini amaçlarına uygun bir şekilde değerlendiriyor	E	K	H
Öğretmenlere öğretme konusunda gerekli olan fen, matematik ve teknoloji yönünden kendi bilgi düzeylerini geliştirmeleri için yardım edebilmeli	E	H	Öğretmenlere öğretme konusunda gerekli olan fen, matematik ve teknoloji yönünden kendi bilgi düzeylerini geliştirmeleri için yardım ediyor	E	K	H
Öğretmenlere, öğrencileri dogmatizmadan uzak, soru sormayı cesaretlendiren, yaratıcılığı ödüllendiren ve ilgiyi uyandıran bir öğretme ortamı sağlamaya yardımcı olmalı	E	H	Öğretmenlere, öğrencileri dogmatizmadan uzak, soru sormayı cesaretlendiren, yaratıcılığı ödüllendiren ve ilgiyi uyandıran bir öğretme ortamı sağlamaya yardımcıdır	E	K	H
Öğretmenlere, bütün öğrencilerin yüksek beklentileri olması noktasında teşvik eden, başarılı deneyimlere muktedir kılan ve fen ortamında sorumluluk duygusu sağlayan bir sınıf ortamı yaratmak için yardım edebilmeli	E	H	Öğretmenlere, bütün öğrencilerin yüksek beklentileri olması noktasında teşvik eden, başarılı deneyimlere muktedir kılan ve fen ortamında sorumluluk duygusu sağlayan bir sınıf ortamı yaratmak için yardım ediyor	E	K	H

17) Kitaptaki resim, grafik, şema gibi görsel materyaller nasıl olmalıdır?			18) Yazdığınız ders kitabının resim, şema, grafik gibi görsel materyallerinin özellikleri nasıldır?		
Güncel olmalıdır	E	H	Günceldir	E	K H
Net ve iyi kalitede olmalıdır	E	H	Net ve iyi kalitededir	E	K H
Yazılı metnin içeriği ile ilişkili olup uygun biçimde yerleştirilmelidir	E	H	Yazılı metnin içeriği ile ilişkili olup uygun biçimde yerleştirilmiştir	E	K H
Öğretim için yararlı olmalıdır	E	H	Öğretim için yararlıdır	E	K H
Şekil, grafik ve şemalar öğrenci seviyesine uygun, açık ve net olmalıdır	E	H	Şekil, grafik ve şemalar öğrenci seviyesine uygun, açık ve nettir	E	K H
Şekil, grafik ve şemalara ilişkin açıklamalar yapılmalıdır	E	H	Şekil, grafik ve şemalara ilişkin açıklamalar yapılmıştır	E	K H
19) Ünite sonu öğrenci etkinliklerinin özellikleri sizce neler olmalıdır?			20) Yazdığınız ders kitabının ünite sonu öğrenci etkinlikleri nasıldır?		
Sorular iyi hazırlanmış ve ders tekrarı için uygun olmalıdır	E	H	Sorular iyi hazırlanmış ve ders tekrarı için uygundur	E	K H
Kelimeler listesi uygun ve yararlı olmalıdır	E	H	Kelimeler listesi uygun ve yararlıdır	E	K H
Önerilen etkinlik ve projeler düşünmeye sevk etmeli ve cesaretlendirmelidir	E	H	Önerilen etkinlik ve projeler düşünmeye sevk ediyor ve cesaretlendiriyor	E	K H
Önerilen etkinlikler kolay bulunabilecek ve tehlikesiz maddeler içermelidir	E	H	Önerilen etkinlikler kolay bulunabilecek ve tehlikesiz maddeler içeriyor	E	K H
Ünite testleri bulunmalıdır	E	H	Ünite testleri bulunuyor	E	K H
Laboratuvar programı için araç-gereç listesi bulunmalıdır	E	H	Laboratuvar programı için araç-gereç listesi bulunuyor	E	K H
Kütüphane kaynak materyalleri önerilmelidir	E	H	Kütüphane kaynak materyalleri öneriyor	E	K H
Konu başında verilen hedef davranışlar ile ünite sonunda verilen değerlendirme soruları içerik ve seviye yönünden birbirlerine uygun olmalıdır	E	H	Konu başında verilen hedef davranışlar ile ünite sonunda verilen değerlendirme soruları içerik ve seviye yönünden birbirlerine uygundur	E	K H
Ders kitabı öğrencinin birçok bilişsel yeteneğini geliştirmek üzere çözümlü örnekler içermelidir	E	H	Ders kitabı öğrencinin birçok bilişsel yeteneğini geliştirmek üzere çözümlü örnekler içeriyor	E	K H
Ders kitabında sorulan soruların seviyeleri ile üniversite sınavında sorulan soruların seviyeleri uygun olmalıdır	E	H	Ders kitabında sorulan soruların seviyeleri ile üniversite sınavında sorulan soruların seviyeleri uygundur	E	K H
Kitaptaki sorular matematiksel çözüm yanında öğrencileri düşünmeye,	E	H	Kitaptaki sorular matematiksel çözüm yanında öğrencileri düşünmeye,	E	K H

yorumlamaya ve araştırmaya yönlendirmelidir			yorumlamaya ve araştırmaya yönlendiriyor			
Kitapta her öğrenci seviyesine uygun sorular bulunmalıdır	E	H	Kitapta her öğrenci seviyesine uygun sorular bulunuyor	E	K	H
Sorular kolaydan zora doğru sıralanmalıdır	E	H	Sorular kolaydan zora doğru sıralanmıştır	E	K	H
Sorular öğrencilerin konuyu tekrarlayabileceği ve bilgilerini pekiştirebileceği özellikte olmalıdır	E	H	Sorular öğrencilerin konuyu tekrarlayabileceği ve bilgilerini pekiştirebileceği özelliktedir	E	K	H
Test maddeleri ölçme tekniklerine göre hazırlanmalıdır	E	H	Test maddeleri ölçme tekniklerine göre hazırlanmıştır	E	K	H
Testlerle ilgili cevap anahtarları verilmelidir	E	H	Testlerle ilgili cevap anahtarları veriliyor	E	K	H
21) Ders kitabı veya kullanılan el kitabındaki laboratuvar etkinlikleri nasıl olmalıdır?			22) Yazdığınız ders kitabındaki veya kullanılan el kitabındaki laboratuvar etkinlikleri nasıldır?			
Öğrencilerin bilişsel kabiliyetlerinin düzeylerine uygun olmalıdır	E	H	Öğrencilerin bilişsel kabiliyetlerinin düzeylerine uygundur	E	K	H
Öğrencilerin sınıf düzeyine uygun el becerileri içermelidir	E	H	Öğrencilerin sınıf düzeyine uygun el becerileri içeriyor	E	K	H
Laboratuvar etkinlikleri araştırmaya sevk etmelidir	E	H	Laboratuvar etkinlikleri araştırmaya sevk ediyor	E	K	H
Öğrenci aktiviteleri açısından tehlikesiz olmalıdır	E	H	Öğrenci aktiviteleri açısından tehlikesizdir	E	K	H
Önerilen malzeme ve cihazlar mevcut olmalıdır	E	H	Önerilen malzeme ve cihazlar mevcuttur	E	K	H
Sunulan içerik ile ilişkili olmalıdır	E	H	Sunulan içerik ile ilişkilidir	E	K	H
Ders kitabı içerisinde yer almalıdır	E	H	Ders kitabı içerisinde yer alıyor	E	K	H
Ayrı bir laboratuvar el kitabı içerisinde yer almalıdır	E	H	Ayrı bir laboratuvar el kitabı içerisinde yer alıyor	E	K	H
Öğretmenlerin tercihi göre dersin herhangi bir aşamasında uygulanabilir nitelikte olmalıdır	E	H	Öğretmenlerin tercihi göre dersin herhangi bir aşamasında uygulanabilir niteliktedir	E	K	H
Gerekli ön bilgiler deneyin içerisinde yer almalıdır	E	H	Gerekli ön bilgiler deneyin içerisinde yer alıyor	E	K	H
23) İndeks ve ek sözlükler nasıl olmalıdır?			24) Yazdığınız ders kitabındaki indeks ve ek sözlükler nasıldır?			
Eksözlükler doğru ve eksiksiz olmalıdır	E	H	Eksözlükler doğru ve eksiksizdir	E	K	H
İndeks doğru ve eksiksiz olmalıdır	E	H	İndeks doğru ve eksiksizdir	E	K	H
İçindekiler tablosu doğru ve eksiksiz olmalıdır	E	H	İçindekiler tablosu doğru ve eksiksizdir	E	K	H

Kitabın sonunda kaynaklar belirtilmelidir	E	H	Kitabın sonunda kaynaklar belirtilmiştir	E	K	H
25) Ders kitabının fiziksel görünümü nasıl olmalıdır?			26) Yazdığınız ders kitabı fiziksel görünüm bakımından nasıldır?			
Kapağı çekici olmalıdır	E	H	Kapağı çekicidir	E	K	H
İyi tasarlanmış ve dayanıklı olmalıdır	E	H	İyi tasarlanmış ve dayanıklıdır	E	K	H
Büyük boyutlu ve hantal olmamalıdır	E	H	Büyük boyutlu ve hantal değildir	E	K	H
Yazımı çekici ve ölçüsü okumada kolaylık için uygun olmalıdır	E	H	Yazımı çekici ve ölçüsü okumada kolaylık için uygundur	E	K	H
İyi kağıda basılmış olmalıdır	E	H	İyi kağıda basılmıştır	E	K	H

APPENDIX E

ÖĞRETİM GÖREVLİLERİNİN FİZİK DERS KİTAPLARINI DEĞERLENDİRME ANKETİ

Bu anketin amacı KKTC'deki 9. sınıf öğrencilerine okutulan fizik ders kitaplarında fen bilgisi eğitimi öğretim görevlilerine göre bulunması gereken özellikleri, bu özelliklerin okutulan fizik ders kitaplarında bulunup bulunmadığını ve fizik ders kitaplarının nasıl kullanılması gerektiğini araştırmaktadır.

Anketin verileri Orta Doğu Teknik Üniversitesinde yürütülmekte olan bir yüksek lisans tezinde kullanılacak. Çalışmanın sonuçları ileride basılacak olan fizik ders kitaplarının ideal özelliklere sahip olması için kullanılacaktır. Bu nedenle anketi dikkatlice cevaplamanız rica olunur.

Katılımınız için teşekkürler.

Sevim Kavaz

ODTÜ OFMAE Bölümü Yüksek Lisans Öğrencisi

Bu anket 16 sorudan oluşmaktadır. Uygun gördüğünüz sorularda birden fazla seçeneği işaretleyebilirsiniz.

1) Kaç yıldır öğretim görevlisi olarak çalışıyorsunuz?	☐ 0-5 ☐ 6-10 ☐ 11-15 ☐ 16-20 ☐ 21 ve üzeri
2) Orta öğretim kurumlarında öğretmenlik deneyiminiz oldu mu?	☐ Evet ☐ Hayır
3) Olduysa, kaç yıl öğretmenlik yaptınız veya yapıyorsunuz?	☐ 0-5 ☐ 6-10 ☐ 11-15 ☐ 16-20 ☐ 21 ve üzeri
4) Liselerde okutulan fizik ders kitaplarıyla ilgili hangisi veya sizin düşüncenizi yansıtıyor?	☐ Kullanılmasa da olur ☐ Ders kitabına yüzde yüz bağlı kalmak önemlidir ☐ Farklı materyallerle desteklemek gerekir ☐ Gerekli durumlarda kullanılmalı ☐ Diğer:.....

5) Sizce seçilen fizik ders kitabı hangi durumlarda kullanılmalı?	☐ Derse hazırlanırken ☐ Ders işlerken ☐ Soru çözerken ☐ Hiç kullanılmamalı ☐ Diğer:.....	
6) Sizce ders kitabı ne kadar sıklıkta kullanılmalı?	☐ Ders saati boyunca ☐ Sadece konuyla ilgili soruları çözerken ☐ Konudan konuya değişmeli ☐ Diğer:.....	
7) Fizik ders kitaplarının incelenmesinde sizce kitabın hangi özellikleri değerlendirilmelidir?		
İçerik	E	H
Organizasyon	E	H
Fiziksel özellikler	E	H
Resim ve grafikler	E	H
Okunabilirlik	E	H
Öğretim yaklaşımı	E	H
Ünite sonu öğrenci etkinlikleri	E	H
İndeks ve ek sözlükler	E	H
Laboratuar etkinlikleri	E	H
Diğer:		
8) Sizce kitabın içeriğinde bulunması gereken özellikler nelerdir?		
Güncel olmalı	E	H
Bilimsel açıdan hatasız olmalı	E	H
Kavram ve prensiplerin gelişimini içermelidir	E	H
Fen bilimleri, toplum ve teknolojinin birbirine etkilerini vurgulamalıdır	E	H
Tüm öğrenciler için uygun olmalıdır	E	H
Müfredata paralel olarak hazırlanmalıdır	E	H
Öğrenciyi gelecekteki yaşama hazırlamalıdır	E	H
Metinler öğrencilerin yaş ve sınıf düzeyine uygun olmalıdır	E	H
Metinler öğrencilerin ilgilerine ve yaşantılarına uygun olmalıdır	E	H
Metinler ilgili ünite ile ilişkili olmalıdır	E	H
Metinle açık, anlaşılır ve akıcı biçimde yazılmalıdır	E	H
Günlük hayattan örnekler içermelidir	E	H
Diğer:		
9) Fizik ders kitaplarının organizasyonunda dikkat edilmesi gereken şeyler nelerdir?		
Ders için MEB'nce öngörülen zaman konuların verilmesi için yeterli olmalıdır	E	H
Sıralamada öngörülen değişiklikler için esnek olmalıdır	E	H
Konu başlıkları anlaşılır olmalıdır	E	H
Konular bir önceki sınıf programını tamamlayıcı ve bir sonrakine hazırlayıcı olmalıdır	E	H
Konuların diğer derslerle olan ilişkisi belirtilmelidir	E	H
Konular ile ÖSS sınavındaki sorular birbirine paralel	E	H

olmalıdır		
Metinlerin içerisinde konu ile ilgili karikatürler bulunmalıdır	E	H
Metin içerisinde konu ile ilgili kavram ve birimlere ilişkin bulmacalar bulunmalıdır	E	H
Konular yeterince alt başlık taşınmalıdır	E	H
Diğer:		
10) Kitabın okuma düzeyi nasıl olmalıdır?		
Öğrencilerin sınıf düzeyine uygun olmalıdır	E	H
Teknik kelimeler en az seviyede olmalıdır	E	H
Açık, sade ve yaşayan bir dilde yazılmalıdır	E	H
Cümleler sınıf düzeyine uygun uzunlukta olmalıdır	E	H
Yabancı kelimelerin türkçe okunuşları yanında gösterilmelidir	E	H
Cümleler somuttan soyuta doğru sıralanmalıdır	E	H
Metinler görsel imgelerle (resim, grafik, şema) desteklenmelidir	E	H
Gereksiz bilgi yoğunluğu olmamalıdır	E	H
Diğer:		
11) Kitap öğretim yaklaşımı bakımından nasıl olmalıdır?		
Fen bilimlerini sorgulama-araştırma olarak tanımlanmalıdır	E	H
Öğrenci yeteneklerini ortaya çıkarmaya yönelik olmalıdır	E	H
Ders kitabı öğrencileri motive etmek ve anlamalarını sağlamak için genel amaçlar ve talimatlar içermelidir	E	H
Dersin amacını ve diğer derslerle olan ilişkisini içermelidir	E	H
Öğrencilere konuların sunumunda hiçbir amacı olmayan aktiviteler yığını haline dönüştürmeden, mantıksal ve stratejik aktiviteler sunulmalıdır	E	H
Konunun öğrenilmesi için gerekli, ön şart niteliğindeki bilgi ve becerileri ifade etmeli	E	H
Öğrencilerin sahip olduğu yaygın fikirler konusunda öğretmeni uyarmalı	E	H
Bilimsel ifadeler verilmeden önce benzer olaylar hakkında öğrencilerin düşüncelerini ortaya çıkarma da öneriler içermeli	E	H
Öğrencilerin sahip olduğu yaygın görüşlere yer vermeli	E	H
Öğrenmeyi desteklemek için çoklu ve değişken olaylar sağlamalı	E	H
Öğrencilerin konularla ilgili olarak kendilerinin yapacakları ya da uygulama imkanı olmayan olaylar için başkası tarafından yapılmış aktiviteleri içermeli	E	H
Bilimsel ifadelerin sunumu doğru ve anlaşılabilir ifadeler içermeli	E	H
Öğrenciler için bilginin kullanımının ve becerilerin		

sergilenmesinin nasıl olacağı hakkında öneriler içermeli	E	H
Çeşitli olaylarda bilginin kullanımı ve becerilerin uygulanması için öğrencilere ödevler/problemler sunmalı	E	H
Devamlı olarak her bir öğrencinin fikirlerini ifade etme, açıklama, doğrulama ve sergilemeleri için öneriler içermeli	E	H
Öğrencilerin okudukları olayların uygulamaları hakkında muhakeme ve yorum yapmalarına rehber olmak için bir dizi problem/ödev içermeli	E	H
Anlama olmaksızın ezberlenen ifadeleri tekrar etme ya da bir formülü kullanmaya benzer önemsiz ifadelerden öğrenciyi uzak tutan ve fikirlerin uygulanmasını içeren değerlendirme soruları/ödevleri içermeli	E	H
Müfredat programı ve belirtilen bu kriterleri kapsayan bir içerik, eğitim-öğretimin faaliyetlerini amaçlarına uygun bir şekilde değerlendirmeli	E	H
Öğretmenlere öğretme konusunda gerekli olan fen, matematik ve teknoloji yönünden kendi bilgi düzeylerini geliştirmeleri için yardım edebilmeli	E	H
Öğretmenlere, öğrencileri dogmatizmadan uzak, soru sormayı cesaretlendiren, yaratıcılığı ödüllendiren ve ilgiyi uyandıran bir öğretme ortamı sağlamaya yardımcı olmalı	E	H
Öğretmenlere, bütün öğrencilerin yüksek beklentileri olması noktasında teşvik eden, başarılı deneyimlere muktedir kılan ve fen ortamında sorumluluk duygusu sağlayan bir sınıf ortamı yaratmak için yardım edebilmeli	E	H
Diğer:		
12) Kitaptaki resim, grafik, şema gibi görsel materyaller nasıl olmalıdır?		
Güncel olmalıdır	E	H
Net ve iyi kalitede olmalıdır	E	H
Yazılı metnin içeriği ile ilişkili olup uygun biçimde yerleştirilmelidir	E	H
Öğretim için yararlı olmalıdır	E	H
Şekil, grafik ve şemalar öğrenci seviyesine uygun, açık ve net olmalıdır	E	H
Şekil, grafik ve şemalara ilişkin açıklamalar yapılmalıdır	E	H
Diğer:		
13) Ünite sonu öğrenci etkinliklerinin özellikleri sizce neler olmalıdır?		
Sorular iyi hazırlanmış ve ders tekrarı için uygun olmalıdır	E	H
Kelimeler listesi uygun ve yararlı olmalıdır	E	H
Önerilen etkinlik ve projeler düşünmeye sevk etmeli		

ve cesaretlendirmelidir	E	H
Önerilen etkinlikler kolay bulunabilecek ve tehlikesiz maddeler içermelidir	E	H
Ünite testleri bulunmalıdır	E	H
Laboratuvar programı için araç-gereç listesi bulunmalıdır	E	H
Kütüphane kaynak materyalleri önerilmelidir	E	H
Konu başında verilen hedef davranışlar ile ünite sonunda verilen değerlendirme soruları içerik ve seviye yönünden birbirlerine uygun olmalıdır	E	H
Ders kitabı öğrencinin birçok bilişsel yeteneğini geliştirmek üzere çözümlü örnekler içermelidir	E	H
Ders kitabında sorulan soruların seviyeleri ile üniversite sınavında sorulan soruların seviyeleri uygun olmalıdır	E	H
Kitaptaki sorular matematiksel çözüm yanında öğrencileri düşünmeye, yorumlamaya ve araştırmaya yönlendirmelidir	E	H
Kitapta her öğrenci seviyesine uygun sorular bulunmalıdır	E	H
Sorular kolaydan zora doğru sıralanmalıdır	E	H
Sorular öğrencilerin konuyu tekrarlayabileceği ve bilgilerini pekiştirebileceği özellikte olmalıdır	E	H
Test maddeleri ölçme tekniklerine göre hazırlanmalıdır	E	H
Testlerle ilgili cevap anahtarları verilmelidir	E	H
Diğer:		
14) Ders kitabı veya kullanılan el kitabındaki laboratuvar etkinlikleri nasıl olmalıdır?		
Öğrencilerin bilişsel kabiliyetlerinin düzeylerine uygun olmalıdır	E	H
Öğrencilerin sınıf düzeyine uygun el becerileri içermelidir	E	H
Laboratuvar etkinlikleri araştırmaya sevk etmelidir	E	H
Öğrenci aktiviteleri açısından tehlikesiz olmalıdır	E	H
Önerilen malzeme ve cihazlar mevcut olmalıdır	E	H
Sunulan içerik ile ilişkili olmalıdır	E	H
Ders kitabı içerisinde yer almalıdır	E	H
Ayrı bir laboratuvar el kitabı içerisinde yer almalıdır	E	H
Öğretmenlerin tercihi göre dersin herhangi bir aşamasında uygulanabilir nitelikte olmalıdır	E	H
Gerekli ön bilgiler deneyin içerisinde yer almalıdır	E	H
Diğer:		
15) İndeks ve ek sözlükler nasıl olmalıdır?		
Eksözlükler doğru ve eksiksiz olmalıdır	E	H
İndeks doğru ve eksiksiz olmalıdır	E	H
İçindekiler tablosu doğru ve eksiksiz olmalıdır	E	H
Kitabın sonunda kaynaklar belirtilmelidir	E	H

Diğer:		
16) Ders kitabının fiziksel görünümü nasıl olmalıdır?		
Kapağı çekici olmalıdır	E	H
İyi tasarlanmış ve dayanıklı olmalıdır	E	H
Büyük boyutlu ve hantal olmamalıdır	E	H
Yazımı çekici ve ölçüsü okumada kolaylık için uygun olmalıdır	E	H
İyi kağıda basılmış olmalıdır	E	H
Diğer:		

APPENDIX F

TABLE OF SPECIFICATION OF STUDENTS' QUESTIONNAIRE

PROBLEMS	CONTENT	ORGANIZATION	READIBILITY	INS. APPROACH	PICTURES	ACTIVITIES	LAB. ACTIVITIES	INDEX	PHYSICAL APPAREANCE	GENERAL QUESTIONS
<u>PROBLEM 1.1.1</u>										
Sub-problem 1										
Sub-problem 2	16	18	20	22	24	26	28	30	32	15
<u>PROBLEM 1.1.2</u>	17	19	21	23	25	27	29	31	33	
<u>PROBLEM 1.1.3</u>										
Part 1	6, 8, 9, 10, 11, 13									
Part 2	4, 5, 7,									
<u>GENERAL QUESTIONS</u>	1, 2, 3, 12, 14									

APPENDIX G

TABLE OF SPECIFICATION OF TEACHERS' QUESTIONNAIRE

	CONTENT	ORGANIZATION	READIBILITY	INS. APPROACH	PICTURES	ACTIVITIES	LAB. ACTIVITIES	INDEX	PHYSICAL APPAREANCE	GENERAL QUESTIONS
<u>PROBLEM 1.1.1</u>										
Sub-problem 1										
Sub-problem 2	19	21	23	25	27	29	31	33	35	17
<u>PROBLEM 1.1.2</u>	20	22	24	26	28	30	32	34	36	18
<u>PROBLEM 1.1.3</u>										
Part 1	5, 8, 10, 11, 12, 13, 15									
Part 2	6, 7, 9									
<u>GENERAL QUESTIONS</u>	1, 2, 3, 4, 14,16									

APPENDIX H

**TABLE OF SPECIFICATION OF BOOK COMMITTEE MEMBERS'
QUESTIONNAIRE**

PROBLEMS	CONTENT	ORGANIZATION	READIBILITY	INS. APPROACH	PICTURES	ACTIVITIES	LAB. ACTIVITIES	INDEX	PHYSICAL APPAREANCE	GENERAL QUESTIONS
<u>PROBLEM 1.1.1</u>										
Sub-problem 1										
Sub-problem 2	9	11	13	15	17	19	21	23	25	7
<u>PROBLEM 1.1.2</u>	10	12	14	16	18	20	22	24	26	8
<u>PROBLEM 1.1.3</u>										
Part 1										
Part 2	4, 5, 6									
<u>GENERAL QUESTIONS</u>	1, 2, 3									

APPENDIX I

TABLE OF SPECIFICATION OF PHYSICS TEXTBOOK WRITERS' QUESTIONNAIRE

PROBLEMS	CONTENT	ORGANIZATION	READIBILITY	INS. APPROACH	PICTURES	ACTIVITIES	LAB. ACTIVITIES	INDEX	PHYSICAL APPEARANCE	GENERAL QUESTIONS
<u>PROBLEM 1.1.1</u>										
Sub-problem 1										
Sub-problem 2	9	11	13	15	17	19	21	23	25	7
<u>PROBLEM 1.1.2</u>	10	12	14	16	18	20	22	24	26	8
<u>PROBLEM 1.1.3</u>										
Part 1										
Part 2	4, 5, 6									
<u>GENERAL QUESTIONS</u>	1, 2, 3									

APPENDIX J

TABLE OF SPECIFICATION OF INSTRUCTORS' QUESTIONNAIRE

PROBLEMS	CONTENT	ORGANIZATION	READIBILITY	INS. APPROACH	PICTURES	ACTIVITIES	LAB. ACTIVITIES	INDEX	PHYSICAL APPAREANCE	GENERAL QUESTIONS
<u>PROBLEM 1.1.1</u>										
Sub-problem 1										
Sub-problem 2	8	9	10	11	12	13	14	15	16	7
<u>PROBLEM 1.1.2</u>										
<u>PROBLEM 1.1.3</u>										
Part 1										
Part 2	4, 5, 6									
<u>GENERAL QUESTIONS</u>	1, 2, 3									