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E-GUIDANCE AND STUDENT'S FILE FOLLOW-UP SYSTEM: A WEB-BASED INTERACTIVE GUIDANCE AND STUDENT'S FILE FOLLOW-UP INTERFACE FOR TURKEY

ABSTRACT

The main purpose of this study is to realize a web-based interactive guidance and student's file follow-up system for Turkey. Thanks to this system, the student's files and guidance tests are applicable to the internet environment in order to follow student's developments in the central system management for Turkey. In that way, the target is to keep development processes of students that are followed during student's education lives in electronics environment. The aim of this project is to reach information fast and effectively by decreasing time, labour, cost, pile of documents that are needed for guidance services. Furthermore, data related to questionnaires and inventories that can be needed when students pass higher education would be seen intra vires by association. Especially, in the vocational guidance services, e-guidance system is developed as an effective and quick solution in order to make a right choice. In this study ASP.NET 2.0 technology and Microsoft Access database are used.

Keywords: Human-Computer Interface, E-Guidance,
Vocational Guidance, Student's File

E-REHBERLİK VE ÖĞRENCİ DOSYASI TAKİP SİSTEMİ: TÜRKİYE İÇİN BİR WEB TABANLI ETKİLEŞİMLİ REHBERLİK VE ÖĞRENCİ DOSYASI TAKİP ARAYÜZÜ

ÖZET

Bu çalışmanın temel amacı Türkiye için merkezi bir sistem idaresinde kurumlarda öğrencilerin gelişimlerini takip etmek amacıyla uygulanan rehberlik testlerinin, değerlendirmelerinin ve öğrenci dosyalarının internet ortamında gerçekleştirilmesidir. Bu sayede Türkiye için öğrencilerin eğitim hayatları boyunca takip edilen gelişim süreçlerinin elektronik ortamda tutulması hedeflenmektedir. Bu proje ile rehberlik hizmetleri için gerekli işgücü, zaman, maliyet ve evrak yükünün azaltılarak, bilgiye hızlı ve etkin ulaşım hedeflenmektedir. Aynı zamanda öğrenci yüksek eğitime geçiş yaptığında gerekli olabilecek anket ve envanterler ilgili kurum tarafından yetkileri dâhilinde görülebilecektir. Özellikle mesleki yönlendirme hizmetlerinde doğru seçim yapılabilmesi için etkili ve hızlı bir çözüm olarak e-rehberlik sistemi geliştirilmiştir.Bu çalışmada Microsoft ASP.NET 2.0 teknolojisi ve Microsoft Access veritabanı kullanılmıştır.

Anahtar Kelimeler: İnsan-Bilgisayar Arayüzü, E-Rehberlik,
Mesleki Rehberlik, Öğrenci Dosyası

1. INTRODUCTION (GİRİŞ)

In the 21st century, the wealth of countries has been not only measured by money affluence or richness of natural resources but also by information and human resources affluence. In this context, one of the targets of our state is to reach to the information around the world in fastest and most accurate manner and by processing this information and to enable it to be shared by the society as widely as possible. This development and change have caused the need of restructuring arise in public sector.

Taking this thought into consideration, within the framework of those developments, a project called Guidance Test and Research Module has been realized by our group in order to follow the personal development of the students and to provide the guidance practices to be utilized in a healthy and effective way during their educational process that will be completed. At the information technology classrooms connected to Internet which is available at the schools, it is a web application based on filling the questionnaires and inventories on the activity calendar of the students by logging into the system with the student identification number and test key during the guidance hour accompanied by the guidance teacher. This module has functions which show the results instantaneously to the student, parents and guidance teacher by calculating the evaluation of the questionnaire result and statistics.

In this study ASP.NET 2.0 technology and Microsoft Access database are used.

2. RESEARCH SIGNIFICANCE (ÇALIŞMANIN ÖNEMİ)

In this section some background material presented to emphasize research significance.

2.1. Traditional Guiding System in Education
(Eğitimde Geleneksel Rehberlik Sistemi)

The literature search indicated that traditionally there has been a tri-partite division of guidance into educational, vocational and personal guidance [1]. Psychological counseling and guidance are systematic and professional help process services provided to students as a group or individually in the fields of success and academic progress, individual and social relations, personal, educational and vocational development at school in order to help them meet their needs and overcome their problems [2].

It is also clear that the provision of effective school-based pupil support has implications for a number of Government initiatives which aim to raise attainment, reduce absence from school, improve social inclusion, mainstream pupils/young people with additional learning needs, provide individualized learning plans, ease the transition from school to employment, reduce youth crime, and improve the urban environment. There are also implications for other professions as schools develop increasing links with educational psychologists, social and community workers, the Careers Service, health workers, community police, and parents to help them support young people with complex needs [2].

2.1.1. Role and Importance of Guidance and Psychological
Counseling in Education System (Eğitim Sisteminde
Rehberlik ve Pisikolojik Danışmanlığın Rolü ve Önemi)

In the developed and democratic societies, the importance of activities relating to education-teaching, expectations from education and the field that these expectations are spreading have been increasingly growing. Although expectations from education have been

expanded and generalized, taking still "teaching" in educational activities as a base is seen in the contemporary education as an insufficient approach and attitude. In order to improve the abilities and skills of the student at the highest level, the achievements of only teaching is limited and another kind of service and activity at schools are needed as well.

In our age, one of the effective and significant developments in education is the provision of the "Psychological Counseling and Guidance" services at the schools. These services have enabled the development of the student (in all fields of the development) to be dealt with an integrated approach. And this has leaded the increase of the effectiveness of school and teaching.

In education, activities in terms of psychological counseling and guidance are generally handled as practices to enable the student to;

- Acquire the knowledge and skills necessary for problem solution, decision making and adaptation,
- Recognize his/her characteristics (e.g. interests, skills, desires and personal characteristics) and potential capacities, be aware of and improve them to the highest level.
- Evaluate the personal characteristics and potential capacities at the social platform.
- Plan his/her life and future,
- Take the responsibility of his/her decisions [2].

2.1.2. General Principles Of Guidance Services
(Rehberlik Servislerinin Genel Prensipleri)

- Every individual has right to choose: Despite all the limited opportunities in the society, the individual can have a lot of options; thanks to the guidance works, the options are introduced to the individual and help her/him make the appropriate choice.
- Respect for human in guidance services is the essence: Respect is to accept that all human life irrespective of race, religion, gender, social, economic and cultural differences is valuable.
- Willingness for utilizing guidance services is the essence: In addition to being willing as the essence of utilizing this service, all of the students are required to participate in the activities while performing group guidance in classroom. In such cases, it is tried to make the student willing for the subjects.
- Guidance is a service to be utilized lifelong: The development of the individual is a process which goes on lifelong. Therefore the guidance services are provided continuously.
- Confidentiality is the essence at the individual dimension of the guidance services. The guidance teacher (psychological consultant) does not tell the secrets of the counseling person (student) to the other people. In order not to lose the sense of confidence between them, the consultant does not transmit to anyone or any institution what the counseling person tells without permission of him/her. Moreover, the class teacher cannot use the private information about the student with any aims other than guidance.
- Guidance services should be conducted in cooperation with the persons concerned: The guidance services are conducted under the leadership of the guidance teacher (psychological consultant) and in cooperation with administrators, teachers, other school personnel and parents.

- Guidance is a service open to all students: The core of these services is to prevent the potential problems and to develop the individual with all aspects. The guidance works are services provided not for the problematic and inadaptable individuals but for all students.
- Respect for individual differences in guidance services is the essence: It is to accept that all human beings have their own characteristics and to accept the existing differences in interest, skill and values.
- The guidance services are responsible both to the individual and to the society: These services help the individual establish a balance between his/her desires and the expectations of the society.
- The guidance services are the inseparable part of the education: In order to attain a common target during the education, the guidance, administration and teaching services are run in conformity with each other [2].

2.1.3. The Problems of the Guidance Services at the Existing System (Varolan Sistemde Rehberlik Sisteminin Problemleri)

Some difficulties are coming out in implementing the guidance services targeted as a result of examination and evaluation of the present guidance services. It should be known that the healthy working of the guidance services depends on combination of a lot of elements. First of all, the functioning of these services in an effective and healthy manner is the problem of an academic base, experience, knowledge, support and system [3].

As the guidance service is a dimension which helps the personal and social development of the students, because of the quantitative insufficiency of the teachers who can provide service in this field at our schools, great liabilities lie upon all the teachers and especially upon the class teachers. In addition to this, as the guidance services are a group work, collaboration and cooperation among administrators, teachers, workers and guidance teacher at the school for the efficient and healthy working of the services are critically important.

Being very different in practice the guidance services which is conducted in real life from that of the functioning of the services on the paper. When examined the explanations of the teacher and administrator about this subject, the practical services have been seen as very low in quality and quantity when compared with the services seen on paper [3].

Limiting the guidance hour as 1 hour in a week and insufficiency of this hour affect the working of the service negatively.

Not implementing the measurement tools such as test, questionnaire etc. used for the guidance services in a healthy way and in due time and not using the results in due time and appropriately make the services immeasurable.

The significant problems such as outdated and insufficient collective files information of the students from elementary schools diminish the due importance of the guidance system [3].

3. E-GUIDANCE AND STUDENT'S FILE FOLLOW-UP SYSTEM (E-REHBERLİK VE ÖĞRENCİ DOSYASI TAKİP SİSTEMİ)

At the information technology classrooms connected to internet which is available at the schools, it is a web application based on filling the questionnaires and inventories on the activity calendar of

the students by logging into the system with the student identification number and test key during the guidance hour accompanied by the guidance teacher. This module has functions which show the results instantaneously to the student, parents and guidance teacher by calculating the evaluation of the test result and statistics.

The centralization, evaluation and availability of the information files showing the students' characteristics are quite challenging and costly for the existing system. On the other hand, thanks to the e-guidance system to be set up, access to information will be possible instantaneously by using the internet so the costs for access will be reduced to zero. Confidentiality and security at hierarchic structure will be provided by the authorizations of the users at parents, guidance teacher, and district, provincial and ministerial level.

With the E-guidance test and research system, it will be possible for the authorized users to display the results and comments of the tests at country, province or district level. Moreover, it is also possible to list the number of people who have given answers to the questions measuring social, cultural and economic situation; so the measures, regional needs and problems in that region can be detected. The necessary preventive guidance services can be determined. For all these questioning and reporting, the private information about the students is protected according to the essence of confidentiality of the guidance. Main screen-shot of E-guidance and student's file follow-up system is shown in Figure 1 and general working scheme of e-guidance system is shown in Figure 2.

Figure 1. Main screen-shot of e-guidance and student's file follow-up system
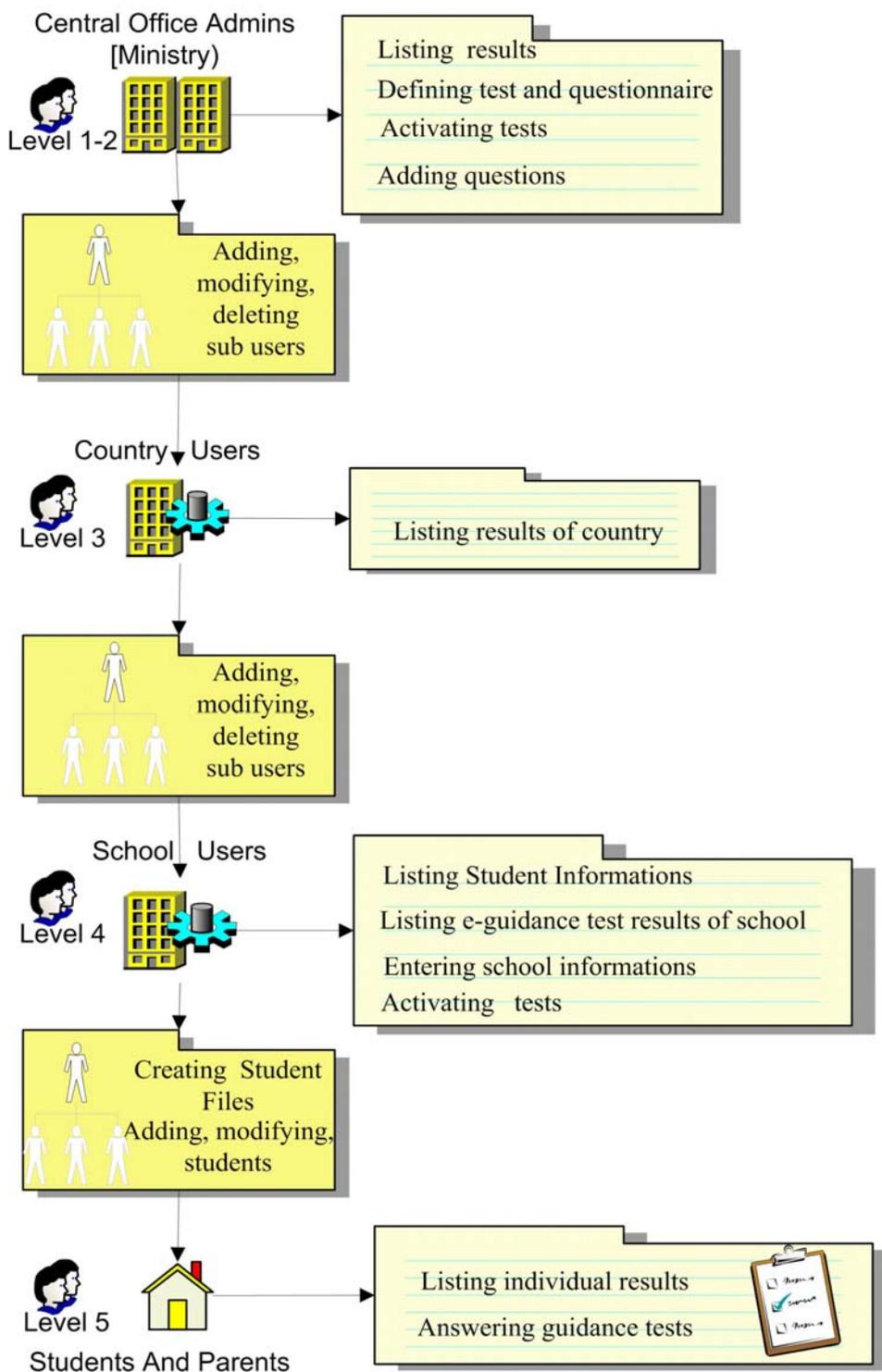(Şekil 1. E-rehberlik ve öğrenci dosyası takip sisteminin ana ekran görüntüsü)

Figure 2. General working scheme of e-guidance system
(Şekil 2. E-rehberlik sisteminin genel çalışma şeması)

3.1. The Main Functions and Sub-Components of the System
(Sistemin Ana Fonksiyonları ve Alt Bileşenleri)
3.1.1. Administrative Module (Yönetim Modülü)

- Adding sub-user to the system (Figure 3)
- Arrangement of the user information (Figure 4)

Figure 3. Adding sub-user to the system screen-shot
(Şekil 3. Sisteme alt kullanıcı ekleme ekranı)

Figure 4. Arrangement of the user's information screen-shot
(Şekil 4. Kullanıcı bilgileri düzenleme ekranı)

3.1.2. Test and Student's File Module
(Test ve Öğrenci Dosyası Modülü)

- Defining test and questionnaire.
- Processing the questions and the scoring information of the defined tests into the system.
- Student's file Transactions.

3.1.3. Results Module (Sonuçlar Modülü)
- Analyzing the test results according to different measures.

3.1.4. Institutional Transactions Module (Kurum Rapor Modülü)
- Determining an application calendar about the tests.
- Making the formed tests ready to use and unuse.
- Entering fixed data such as physical and educational opportunities and number of the teachers of the institution.

3.2. System Users and Their Authorities
(Sistem Kullanıcıları ve Yetkileri)

There are three kinds of users in the system. These are as follows:

Central and Provincial Administrators (hierarchic administrator order at 1st, 2nd, and 3rd level)
School Guidance Teachers (4th level)
Students and Parents (5th level)

Figure 5. User login screen-shot
(Şekil 5. Kullanıcı giriş ekranı)

3.2.1. Central and Provincial Administrators
(Merkez ve İl Yöneticileri)

It is a user level which is authorized to conduct every kind of transactions in the system. This user level has the highest authority that is in charge of the system at the central organization. The main task of this user level is to form 2nd level users who manage the system at the center. The first two characters of the user code which is composed of 8 digits represent the province code; the subsequent 6 characters represent the code of the institution. User login screen-shot is shown in Figure 5 and user's level chart is shown in Figure 6. The screen authorities are;

Adding the low-level users (2. 3. 4. level) into the system and arranging the information of these users,
Determining the test calendar,
Forming test,
Adding and deleting questions,
Seeing the test results.

3.2.2. School Guidance Teachers (Okul Rehberlik Öğretmenleri)

What composes the provincial organization of the system is the user level which applies the formed tests to the students. This level enables the application of the tests by activating the tests in the system for use and can monitor the results of the applied tests. The screen authorities are;

Adding the information about the institution in to the system and updating.

Activating the tests for application.

Seeing the particular test results and question details.

Access to student's files and data entry.

3.2.3. Students and Parents (Öğrenciler ve Aileler)

The students are at a level which constitutes the aim of the system and applies the tests. This level which has no authority on the system logs into the system and applies the tests. The result of the applied system is displayed on the screen for the user after the test is completed.

If the student wants to apply a test which is active in the system, he/she has to enter the data formed by the institution authority that activates the test and his/her number while logging on the main page.

- **Test Key:** The numbers composed of user name and test number while activating the test.
- **Test Password:** The access password defined by the administrator who activates the test.
- **Student Number:** The identification number of the student.

3.3. Test Entry Module (Test Giriş Modülü)

The method which has a considerably important place among the applied methods relating to determining personal developments and troubles of students is the test application method. These tests which are diversified according to the needs are prepared by the experts and applied by them as well.

In designing Test Entry Module, this diversification has been taken into account. Also in terms of test evaluation measures, two evaluation methods which we call option counting and scoring are taken into account. The appropriate one between these two methods is determined on the test adding screen.
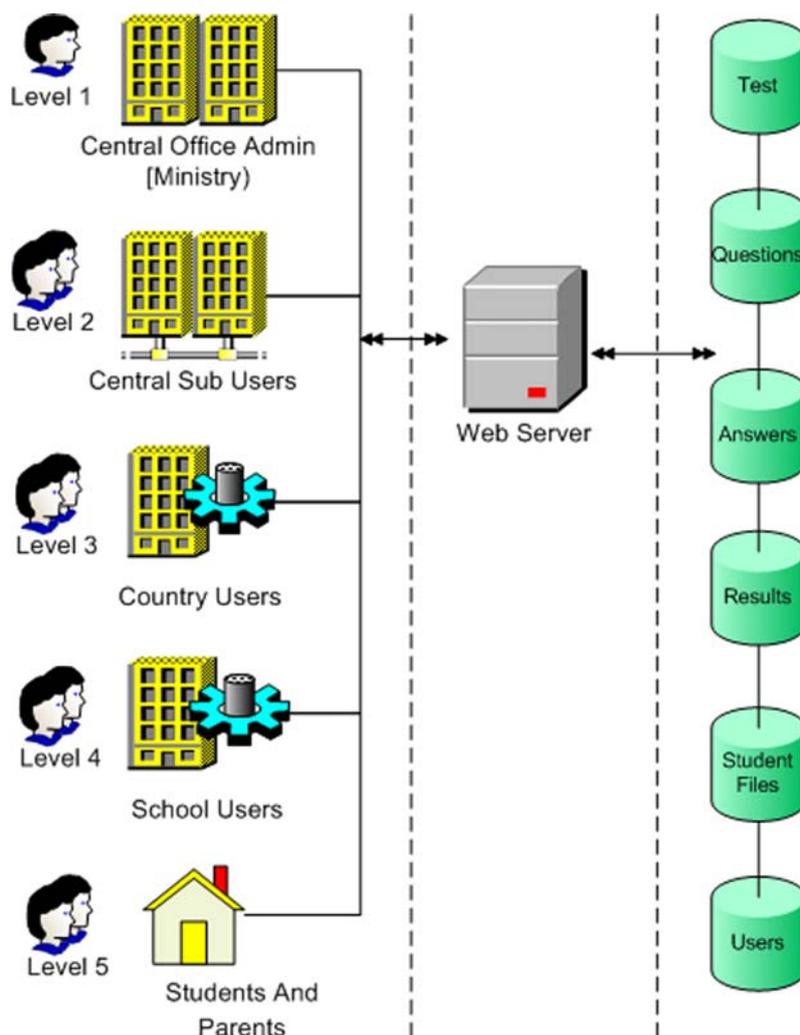
Figure 6. User's level chart
(Şekil 6. Kullanıcı düzeyi grafiği)

3.3.1. Test Adding Screen (Test Ekleme Ekranı)

The explanations about the options on the test adding screen are as follows by order.

- **Test No:** It is the test number to be entered into the system and is determined automatically by the system. This information is kept in the "testno" field of the "testmain" table.
- **Test Name:** The space into which the name of the test to be applied is entered. This information is kept in the "testname" field of the "testmain" table.
- **Explanation:** It is the space into which the explanations about the test to be applied are entered. This information is kept in the "explanation" field of the "testmain" table.
- **Level:** It is the space where the test to be entered into the system is determined to apply for classes at which education level. This information is kept in the "level" field of the "testmain" table.
- **Active:** It is the space where the test entered into the system is determined ready to use or not. This information is kept in the "active" field of the "testmain" table.
- **Comment Type:** As mentioned above, the tests are evaluated in this system by two measures which are option counting and

scoring. When the comment according to the option is chosen as the comment type, the spaces into which the comments to be displayed are entered according to the option number to be used will be active. These information are kept in the "commenttype" and "comment1", "comment2" ,…, "comment5" fields of the "testmain" table.

- When the comment type is chosen as scoring, a space into which the options of all the questions and a space into which the scoring equivalent is entered are displayed on the screen.
- This information is kept in the comment type and as1, as2, …as5, us1, us2, …us5, comment1, comment2, …comment5 fields of the "testmain" table. Here "as" means the low-limit for the scoring and "us" means the top limit for the scoring.
- **Registerer:** It is the code of the user who logs into the system. It is performed by the system using session management. And the information is kept in the "registerer" field of the "testmain" table. Adding test screen-shot according to score interval is shown in Figure 7 and Adding test screen-shot according to selections is shown in Figure 8.

Figure 7. Adding test screen-shot according to score interval
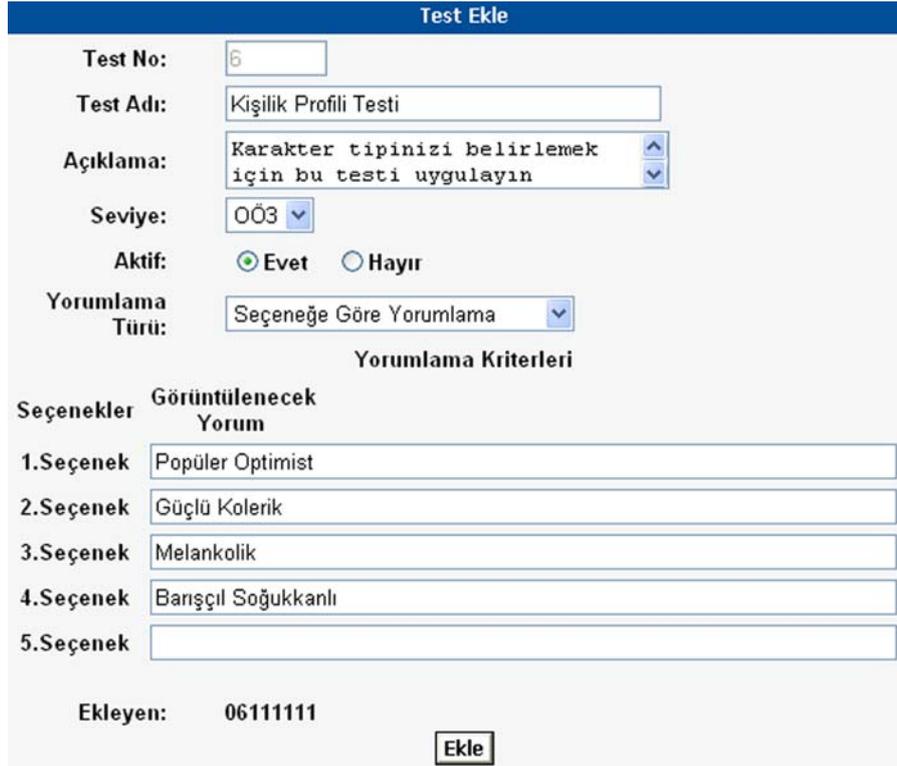(Şekil 7. Puan aralığına gore test ekleme ekranı)

Figure 8. Adding test screen-shot according to selections
(Şekil 8. Seçime gore test ekleme ekranı)

3.3.2. Question Adding Screen (Soru Ekleme Ekranı)

The question adding screen is the screen on which the questions for the tests to be applied mainly are entered and the transaction for adding into the system is conducted. This window used by the 1st and 2nd level authorized users is used by the central organization. Thus, a standard will be provided for the tests to be applied at all of the schools. The information and questions on the question adding screen are kept in the "questiontable" table at the database. Question adding screen-shot is shown in Figure 9.
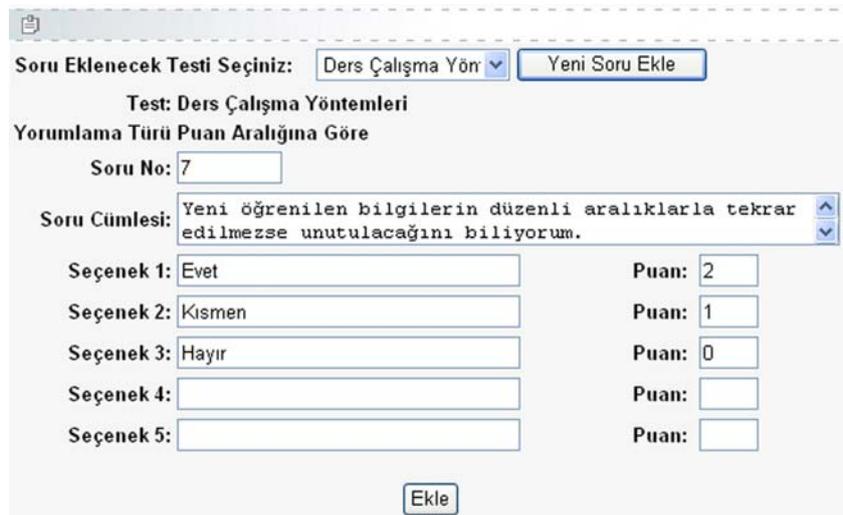
Figure 9. Question adding screen-shot
(Şekil 9. Soru ekleme ekranı)

The explanations for the options at the question adding screen are by order as follows.

- **Choose the test to which question will be added:** It is the space where the choosing is done to determine to add question to which test entered into the system before.
- **Question No:** It gives the question number which will be entered into the system. It is given automatically by the system. This information is kept in the "questionno" field of the "questiontable" table.
- **Interrogative Sentence:** It is the space into which the interrogative sentence is entered. This information is kept in the "question" field of the "questiontable" table.
- **Option 1..5:** It is the space on which the options that we want to be displayed on the screen are determined. This information is kept in the s1, s2, …, s5 fields of the "questiontable" table.

3.4. Student Test Application Module
(Öğrenci Test Uygulama Modülü)

The user who is the main component of our project is the student. The student logs (See Figure 10) into the system by using the space which is kept for him/her on the main page of the project and starts to answer the test. The questions are successively showed to the student one by one. And the answer of the student is saved into the system. Finally when the test is over, the test result is explained to the student. Now we will elaborate these transactions.
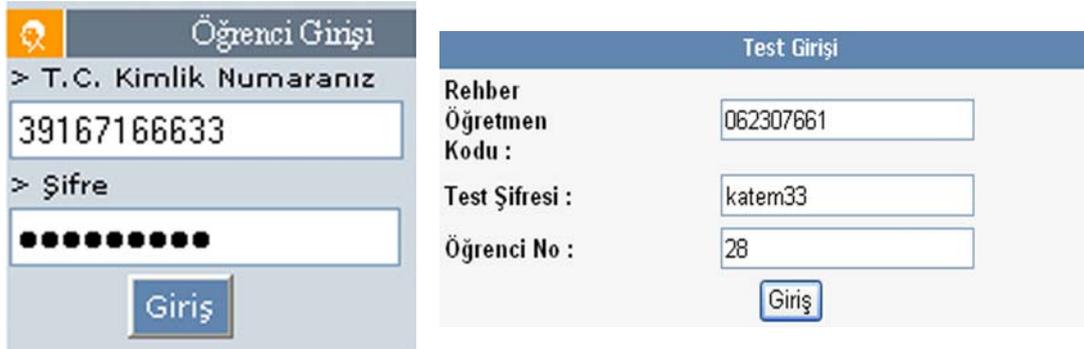

Figure 10. Student login screen-shot
(Şekil 10. Öğrenci giriş ekranı)

3.4.1. Logging into the System and Test Activation
(Sisteme Giriş ve Test Aktivasyonu)

In order to log into the system by the student, the test is to be activated by the authorized person of the school. For the activation of the test, the authorized person logs into the system and clicks on the test activation menu. Institution test activation screen-shot is shown Figure 11.

Figure 11. Institution test activation screen-shot
(Şekil 11. Okul test aktivasyon ekranı)

While the tests that are applied generally are listed on the "Guidance Tests" space, on the "Active Tests of Your Institution" the tests which are applied at the institution logging into the system are listed. To activate an inactive test of the institution, the test is chosen on the left side. At the bottom, the test name, the user name for test entry and the password space are displayed on the screen. For entry into the system, the user name is given by the system as the combination of the institution code and the test number. This is a method which prevents complexity. The reason for determining password is to prevent the outside logging into the system. The password is determined by the authorized person of the institution and this person gives this logging information to the students who will apply the test. When the "Activate" option is chosen, it means that the test is ready for the uses of the students at that institution. Similarly, if there are completed tests of the active tests at the institution, as in the below screen it is inactivated by clicking on it. Also if the password is forgotten, it can be learnt from here.

After activating the test, the student can log into the system. For logging into the system, the user name (the code formed during activating the test), password (the password provided by the authorized person of the institution) and the student number for the test are written. The reason for getting the student number is to distinguish the test answers given by the student while the authorized person of the school examines the test results. As the individual results are only seen by the authorized person of the institution, the confidentially principle of the guidance is rendered to be conformed.

3.4.2. Test Result (Test Sonucu)

When all of the test questions are completed, the student is given comment about the test. The comment is made according to the measures determined while adding test. If the measure is option counting; the answers given by the student is counted and the comment relating to the maximum option which is given by the student is written on the screen. As for the comment according to the scoring level, the comment with which the total scoring of the answers given by the student matches the comment measure is written on the screen. Student test result screen-shot is shown in Figure 12.

After the student learns the test result, he/she can proceed to other test if available or log out the system.

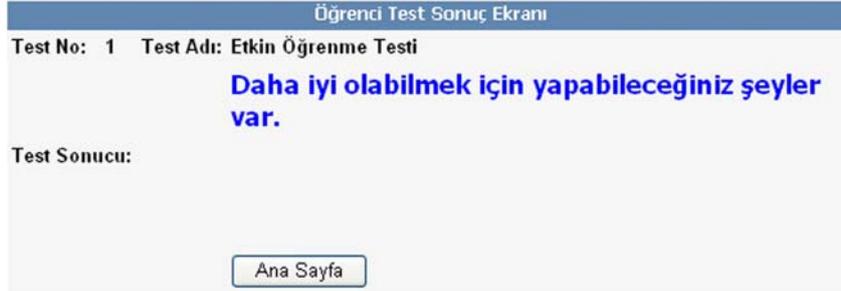After the test is applied, evaluations at institutional, provincial and around Turkey level can be made.

Figure 12. Student test result screen-shot
(Şekil 12. Öğrenci test sonuç ekranı)

3.5. Evaluation and Statistics Section
   (Değerlendirme ve İstatistik Bölümü)
The tests used for works on psychological counseling and guidance are interpreted by the persons who studied psychological counseling and guidance, psychological services in education and psychology. The aim of the E-guidance system is to combine the evaluation process with the opportunities provided by the technology.

3.5.1. The Evaluation Techniques in Use
   (Kullanılan Değerlendirme Teknikleri)
3.5.1.1. Number of the Option (Seçenek Sayısı)
The test is evaluated according to the option which is mostly chosen among the answers. The comment which belongs to the mostly marked option is saved into the database as test result and the results according to the student and test can be displayed on the screen anytime.

3.5.1.2. Score Range (Puan Aralığı)
With this evaluation measure, a result is gotten from the total of the option scores at the end of the applied test. The evaluation of the test is made according to the gap of the score gotten and the result is kept in the database. Every option in the test has one score value. During the test, the system saves into the database the given answer for the question together with the information of the person who applies the test.

3.5.2. Evaluation According to the User Levels
   (Kullanıcı Düzeyine Göre Değerlendirme)
The central and provincial administrators can display separately the general result of an applied test within their authorities and according to the all provinces or to the chosen province or to the chosen institution within the province. General evaluation screen-shot for central and provincial administrators is shown in Figure 13.

Figure 13. General evaluation screen-shot for central and provincial administrators
(Şekil 13. Merkez ve il yöneticileri için genel değerlendirme ekranı)

The number of the answering of the answer option of the questions of the chosen test can also be displayed. And this gives the opportunity to evaluate based on answer option to the evaluation experts. But at this point, right to access to the test results which belong to any student or to the details of the questions is not possible according to the confidentially principle of the guidance.

However the school and class teachers have the authorities to examine in detail the applied tests within the institution according to the details of the question and the student who answers the test. School evaluation screen-shot for school administrators and guidance teachers of school is shown in Figure 14.

Figure 14. School evaluation screen-shot for school administrators and guidance teachers of school
(Şekil 14. Okul yöneticileri ve okul rehber öğretmenleri için okul değerlendirme ekranı)

4. CONCLUSIONS (SONUÇLAR)

With the developing internet technology, a web-based interactive guidance and student's file follow-up system in order to realize guidance services applied face-to-face in Turkish schools on internet is developed. A sample application of this project is realized in project stage but it is not started to be applied country wide. The success stages of the project are seen in Table 1.

Table 1. The success stages of the project
(Tablo 1. Projenin başarım aşamaları)

Project Stages	Success
1. Designing the main module of E-Guidance service	Succeeded
2. Designing the application module of E-Guidance service	Succeeded
3. Designing the evaluation and statistics section	Succeeded
4. Designing the test entry module	Succeeded
5. Combining the modules and testing them	Succeeded
6. Sample application of system, measuring and evaluation	Succeeded
7. Wide spreading to the country	Not implemented

The potential advantages of the guidance test and student's file follow-up services provided by the E-guidance System are as follows;

- Effective and efficient service is provided.
- Time saving is enabled and rapidity of the transactions is increased.
- The decision making processes of the administrators, teachers and students are speeded up.
- Monetary acquisitions at very high levels are provided.
- Our educational and research potential is increased.
- We become an information society.
- We can turn our human resources into qualified labour force according to our national interest.

Before using the system, pilot schools must be determined and the defects must be detected. Staffs that use the system should be trained. To provide the security of this system may use the encoding algorithms and may use secure server.

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