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TRANSLITERAL EQUIVALENCE AND RELIABILITY  
OF THE TURKISH FORM  
OF THE PROBLEM SOLVING SUBTEST  
OF THE CAREER MATURITY INVENTORY;  
A STUDY ON 8TH-GRADE TURKISH STUDENTS

by

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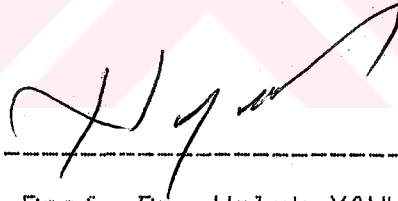
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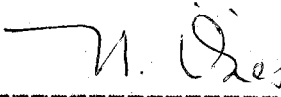
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**ABSTRACT**

Studies on Turkish university students show an increasing tendency to change their majors by taking the University Selection and University Placement Exams (ÜSS and ÜYS) for the second time. This fact underlines the strong need for career counseling to secondary and high school students.

For an effective career counseling assessment is very important; but the number of instruments available for the use of Turkish students is very few.

J. O. Crites has developed an inventory called the Career Maturity Inventory. It consists of two main parts: The Attitude Scale and the Competence Test. The present study deals with the 100-item Competence test is consisting of five 20-item subtests. The fifth subtest deals with the Decision-Making dimension of career maturity.

The specific aim of the present study is to determine the transliteral equivalence and reliability of the Problem Solving subtest of the Career Maturity Inventory. The inventory was translated by Incesulu (1983), for the use in her M.A. project, and the investigator revised the translation and then studied the transliteral equivalence and the reliability of this version.

The transliteral equivalence study is conducted in Robert College in Istanbul where the students are bilingual (English and Turkish). The sample consisted of 82 8th-grade students. Findings indicated the Turkish and English forms to be transliterally equal.

The reliability study was accomplished by administering the Turkish form to 236 8th-grade students in four different schools in Istanbul. Two of them were state schools where no counseling services existed and the other two were private schools with well-functioning counseling services.

The statistical analyses revealed an internal consistency coefficient of .45 determined by the Kuder Richardson formula 20; and a test - retest reliability of .65. These findings are considered unsatisfactory reliability and a discussion is presented.

A pilot study is conducted on the 11th-grade students of one private school. Depending on the data obtained there, an adaptation of the scale is performed. In this adapted form, the coefficient of internal consistency determined by the Kuder Richardson formula 20 is found to be .78, the same as found by Crites. However, the internal consistency coefficient of the adapted form is found to be low (.49) for the 8th-grade students.

The analysis also showed that the mean of scores of the students in schools with counseling services was significantly higher than that of students in schools with no counseling services. This is interpreted as an evidence showing the effect of counseling services on the career maturity. However, the SES of the students with lower grades were also much lower than the SES of

students with higher grades. A research to see the effect of the difference in SES on the career maturity is suggested in the discussion part.

Considering the developmental nature of the test, 8th-grade students and 11th-grade students were compared. Difference between 8th-grade students and 11th-grade students in the same school with counseling service found to be non-significant although 11th-grade students scored higher than the 8th-grades. When the situation of 8th- and 11th- grade students were compared, it was seen that they were in very similar life stages. Therefore the statistical findings supported Crites' views that the effect of life stages on career maturity is much higher than the effect of the age.

Further research is suggested to determine the grade levels at which this subtest is most reliable.

## O Z E T

Türkiye'deki üniversite öğrencileri üzerinde yapılan araştırmalar, öğrencilerde, okudukları bölümü değiştirmek ve bu amaçla Öğrenci Seçme ve Yerleştirme sınavlarına ikinci kez veya daha fazla girmek yönünde bir eğilimin geliştiğini göstermiştir. Bu durum, öğrencilere henüz ortaokul ve lise sınıflarında iken bile mesleki rehberlik götüren etkinliklere duyulan gereksinimin büyüklüğünü vurgulamaktadır.

Etkili bir mesleki rehberlik faaliyeti için ölçme ve değerlendirme çok önemli olmakla birlikte, Türkiye koşullarına uygun ölçme araçlarının son derece az sayıda olduğu görülmektedir.

J.O. Crites tarafından geliştirilen Mesleki Olgunluk Envanteri (Career Maturity Inventory) Tutum Ölçeği ve Yeterlik Testi olmak üzere iki bölümden oluşmuştur. Yeterlik Testi, her biri yirmişer maddelik beş bölümden oluşan, toplam 100 maddelik bir testtir. Beşinci bölüm mesleki olgunluğun karar verme boyutunu ölçmektedir.



Bu tezin çalışmasının amacı, sözkonusu ölçeğin beşinci bölümünün Türkçe tercümesinin, orijinali ile çeviri eşdeğerliğini ve Türkçe formun güvenilirliğini saptamaktır. Türkçe'ye çeviri Incesulu (1983) tarafından, tez projesinde kullanmak amacıyla yapılmış, ayrıca tez yazarı tarafından gözden geçirilmiş, gerekli değişikliklerden sonra çeviri eşdeğerliği ve güvenilirlik çalışmalarına geçilmiştir.

Çeviri eşdeğerliği çalışması, İstanbul'da Robert Lisesi'nin sekizinci sınıf öğrencilerinden 82'sinin katılımı ile gerçekleştirilmiştir. Sonuçlar İngilizce ve Türkçe formların çeviri eşdeğerliğine sahip olduklarını göstermiştir.

Güvenirlilik çalışması, ikisi devlet okulu, diğer ikisi özel okul olmak üzere toplam dört okulun 8. sınıflarındaki (Orta 3) toplam 236 öğrenciye Türkçe formun uygulanması ile gerçekleştirilmiştir. İlk iki okulun rehberlik servislerinin olmadığı, diğer iki okulun ise rehberlik servislerinin bulunduğu ve iyi çalıştığı görülmüştür.

Test sonuçlarının analizlerinde Kuder - Richardson 20 formülü ile hesaplanan iç tutarlık katsayısı .45 , testin iki hafta ara ile tekrarlanmasından elde edilen korelasyon katsayısı ise .65 olarak bulunmuştur. Elde edilen değerler yeterli bulunmamış ve bu konu tezin devamında tartışılmıştır.

Ayrıca özel okullardan birinin 11.sınıf öğrencilerinin katılımı ile bir pilot uygulama yapılmış, bu uygulamada elde edilen veriler, testin Türkiye koşullarına uyarlanmasına dayanak oluşturmuştur. Bu uyarlama sonucunda 11. sınıf öğrencilerinde iç tutarlık katsayısı .78 olarak bulunmuştur. Bu değer, Crites'in 11. sınıflar için bulduğu değerle aynıdır. Bu uyarlamadan sonra 8. sınıflar için iç tutarlık katsayısı .49 olarak hesaplanmıştır.

Çalışmanın sonuçlarından bazı yan bulgular da elde edilmiştir. Rehberlik servisi olan okulların öğrencileri, rehberlik servisi olmayan okulların öğrencilerine kıyasla daha yüksek puanlar almışlardır. Bu durum, rehberlik servislerinin mesleki olgunlaşmada etkili olduklarının kaniti olarak yorumlanmıştır. Ayrıca düşük puan alan öğrencilerin sosyo-ekonomik düzeylerinin de yüksek puan alan öğrencilerinkinden daha aşağı olduğu

görülmektedir. sosyo-ekonomik düzeyin mesleki olgunluk üzerindeki etkisinin araştırılması önerilmiştir.

Testin gelişimsel karakteri gözönüne alınarak, aynı okulun 11. sınıf öğrencileri ile 8. sınıf öğrencilerinin aldıkları puanlar karşılaştırılmış ve aralarındaki yaş farkına rağmen birbirlerine yakın puanlar aldıkları görülmüştür. Öğrencilerin içinde buldukları durumlar değerlendirildiğinde, 11. ve 8. sınıf öğrencilerinin benzeşik hayat aşamaları yaşamakta oldukları görülmüş ve bu durum Crites'in, mesleki olgunlukta yaşanan hayat aşamalarının kronolojik yaştan daha önemli olduğu görüşünü desteklemiştir.

Ayrıca, tezin hangi sınıf düzeylerinde en yüksek güvenilirliğe sahip olduğunun anlaşılması için çalışmalar yapılması önerilmiştir.

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## chapter I

### INTRODUCTION

#### Significance Of The Study

##### Situation In The Universities

In the higher education programs, many students who are placed through the OSS and OYS exams, express dissatisfaction with their departments (or majors) during the first months of their university education. Although there tends to be a decrease in the number of dissatisfied students towards the end of the year still, there remain a considerable number of students who decide to change their majors by taking the entrance exam by the second time. Table 1 shows the incremental percentage of ratio of the number of students who take the University Entrance Exams for the second time from 1985 to 1990 .

Table 1

Percentage of students who took the exam for the second time

| Years | % of those who took the exam for the second time |
|-------|--|
| 1985  | 8  |
| 1986  | 7  |
| 1987  | 8  |
| 1988  | 11.5   |
| 1989  | 15.4   |
| 1990  | 17   |

(Kuzgun, 1991)

As is apparent from the table, there is an increase in the percentage of university students to make a change in their choice of faculty or department. This means a loss of time for at least one year in addition to the feeling of disappointment for the student and loss of funds for the country.

#### The New System In The Turkish Education

In the 1991-92 academic year, the Ministry of Education in Turkiye, started the course and credit system, in the 9th, 10th and 11th grades. Volunteer pilot schools applied this system during 1991-92. The following (1992-93) course and credit system became compulsory for all high schools.

In this system, approximately 63% of the credits are taken from the required courses and 37% from the elective courses.

The courses are grouped in terms fields. The fields are as follows:

The Field of Natural Sciences, the Field of Social Sciences, the Field of Sports, the Field of Foreign Languages, the Field of Turkish-Maths, and the Field of Fine Arts. (Tebligler Dergisi, 12.10.1992, no:2368, p.708)

With the completion of the credits, the student is given a diploma in accordance with the group of courses through which 1/3 of the credits of the elective courses is completed. The diploma types are Natural Sciences, Turkish-Maths, Social Sciences, Foreign Languages, Sports, Fine Arts and General Knowledge of Culture. (Tebligler Dergisi, 12.10.1992, no:2368, p.708)

This system brings forth the fact that, the students have to make a decision about their future career as early as the eighth grade.

There are two arising questions :

1) Are the 8th-grade students mature enough to make decision on their future career ?

2) Will any intervention on career decision-making help students; and how will a change due to such intervention be assessed and evaluated ?

The facts mentioned above indicate the strong need for (1) vocational counselling for students in grades 8 thru 12, and (2) an instrument to measure (a) vocational maturity, (b) change due to counseling activities and (c) to assess the effectiveness of these activities.

#### The Career Maturity Inventory

J.O. Crites has developed an inventory in 1978, to measure the career maturity of the adolescents from 6th grade to 12th grade. The inventory has two parts, Attitude and Competence.



The Competence Test part is a 100-item test consisting of five subtests each having 20 questions. The fifth part (item 81 thru 100) is the Problem Solving part titled "What Should They Do ?" and deals with the vocational decision-making maturity of the students.

The entire test is developed on the basis of Super's theory of Career Maturity (Crites, 1978) .

Super talks about five dimensions of career maturity. These are orientation to vocational choice, information & planning, consistency of vocational choice, crystallization of traits, wisdom of vocational preference; and maturity defined with respect to the standing point of an individual along these dimensions in relation to the chronological age and expected life stage or, others' behavior coping with the same developmental task. (Super, Crites, Hummel, Moser, Overstreet & Warnath, 1957 in Crites 1978, p.4)

Crites used these dimensions to construct the CMI. The inventory is explained in the review of literature section of this thesis.

Being a short test with a clear language and having satisfactory coefficients of internal consistency for grades 8 thru 12 (.72 to .82) it scored worthwhile to adapt into Turkish.

**PURPOSE OF THE STUDY :**

The study aimed to answer the following two questions :

1) Is the Turkish translation of the Problem Solving Part (What Should They Do ?) transliterally equivalent to the English Form ?

2) Is the Turkish translation of "What Should They Do ?" reliable for 8th-grade Turkish students ?

## CHAPTER II

### CONCEPTUAL BACKGROUND AND REVIEW OF LITERATURE

#### Theoretical Background About Career Maturity And Vocational Decision - Making

Vocational maturity is a complex dynamic process. It has dimensions along which maturation proceeds. As process goes on, information from the environment is taken as input into the system and outputs are produced by the system. In this process, decision-making plays an important role. These outputs sometimes are taken as input again to produce better outputs. Results obtained by trials are checked, evaluated, re-processed and this procedure repeats until the terminal decision is made.

Various theories explain different parts of the process. There are four theories explained in this thesis. Super's theory explains dimensions along which career maturation proceeds. Making a wise choice requires a mature decision - making skill.

Gelatt, in his theory, explains the dynamics of the decision - making process. The data is processed, a decision is produced, it is tested and new data is created. This cyclic process produces investigatory or terminal decisions. Investigatory decisions lead the individual to search for further data to make finer decisions.

Herhenson and Roth also emphasize the continuity of the process. They state that vocational development takes place along the repeated process of decision - making. Each decision narrows the range of possibilities and the remaining ones become stronger.

Hilton explains the cognitive aspect of vocational decision - making by the concept of cognitive dissonance.

#### Super's Theory

Super emphasized the dimension of vocational development and hypothesized that there are five dimensions along which career maturation proceeds. These dimensions can be listed as :

- 1) Orientation to Vocational Choice
- 2) Information and Planning
- 3) Consistency of Vocational Choice
- 4) Crystallization of Traits
- 5) Wisdom of Vocational Preference

The career maturity of an individual can be defined by his/her standing along these dimensions in relation to either chronological age and expected life stage or the behavior of others coping with the same developmental tasks. (Super, Crites, Hummel, Moser, Overstreet, & Warnath, 1957 in Crites 1978)

Crites has proposed a model for career maturity in adolescence based on these dimensions and made some additions. Figure 1 shows Crites' model. The Career Maturity Inventory is constructed to measure Career Choice Competencies and Career Choice Attitudes.

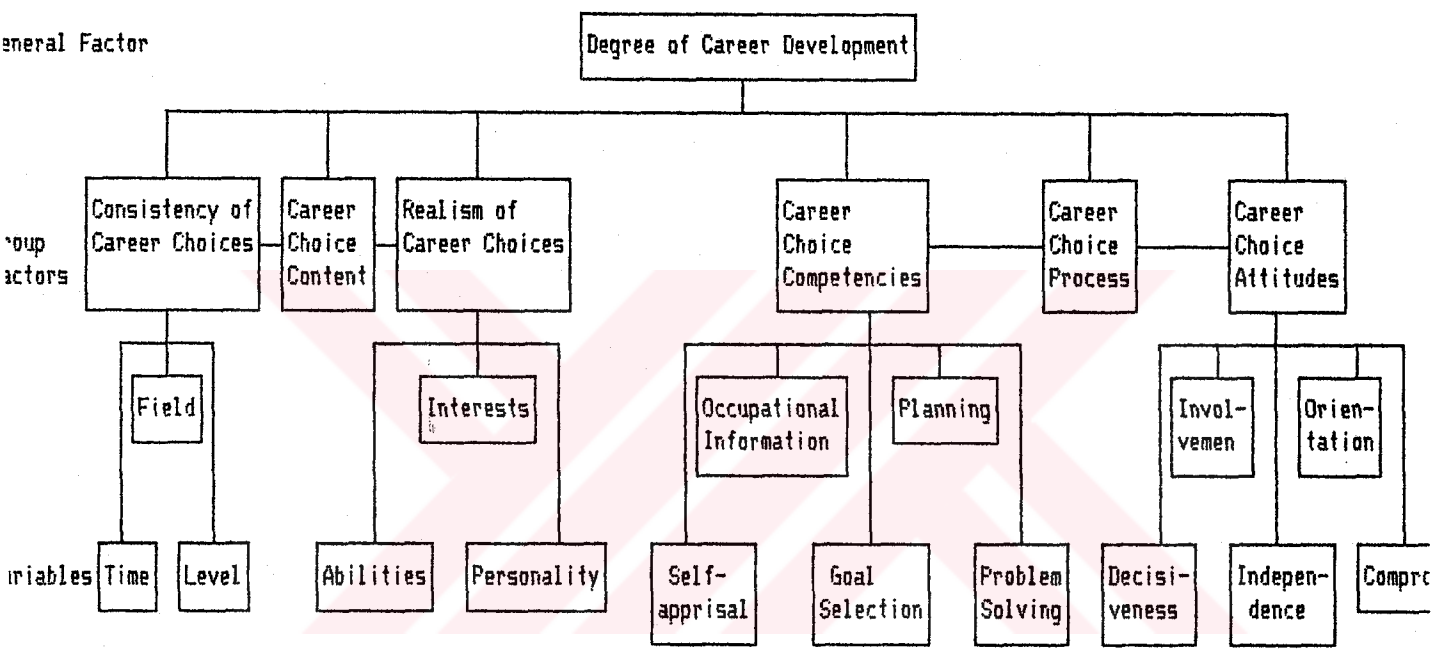


Figure 1 A model of career maturity in adolescence developed by Crites.

Taken from Crites, J.O. (1978) Career maturity inventory theory and research handbook. California : McGraw-Hill. p.4

### Gelatt's Theory

Gelatt mainly talks about the complex dynamics of decision - making process and his theory is designed as a basis for an approach to counseling. It also shows the cyclical process of decision making in the vocational choice and development, the effect of past experiences and the relationship of immediate, intermediate and distant decisions.

The theory also includes other concepts such as weighing the value of alternative goals, using data to estimate the possibility of achieving each goal, assessing the value and the utility of the goal. Figure 2 shows the process. Decision making begins with a purpose or objective. The individual is aware of the following needs :

i) need to make a decision

ii) need for information

(Gelatt, 1962 in Tolbert, 1974)

For example, if he is about to decide to enroll in a vocational training program, he has to know his own aptitudes, interests and abilities, and a description of the program under discussion.

Utilization of the data is the core of the process. In the utilization of the data, there are four main steps :

- i) identifying different choices
- ii) predicting possible outcomes of selecting each choice
- iii) estimating the probable results
- iv) evaluating the desirability of each outcome

(Gelatt, 1962 in Tolbert, 1974)

The individual compares the goals with his hierarchy of values. The comparison of outcomes with values is not a discrete step, but it is emphasized as success in various options beginning to appear possible.

The decision made at the end may be "terminal" or "investigatory". In both types, there is a feedback into the decision - making system. Either the decision is tested by application, or further investigation is planned. Both of these courses of action provide new data for decision - making process. This cyclical process is more or less continuous. Each decision changes or adds to the available data for future decisions. (Gelatt, 1962 in Tolbert, 1974)

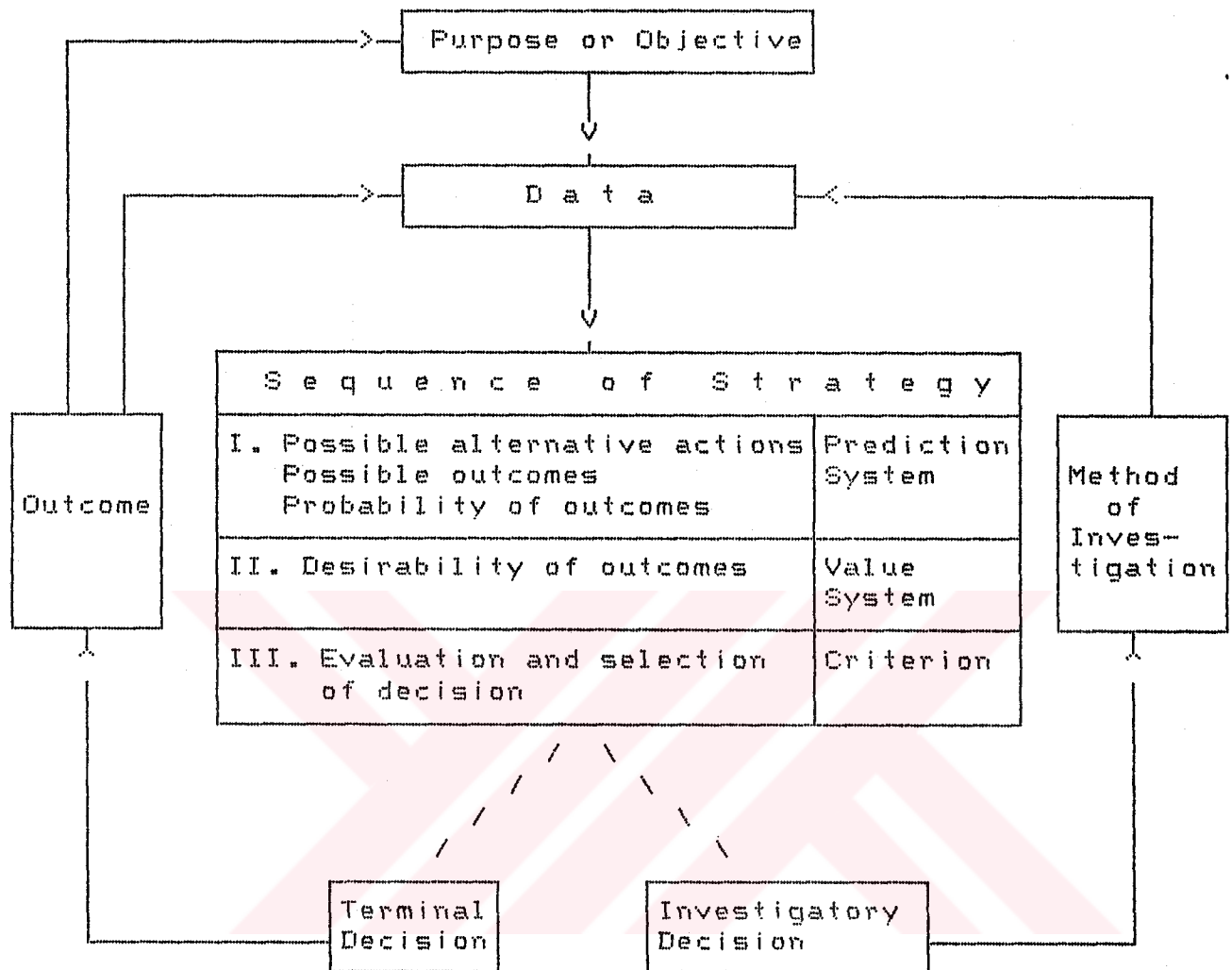


Figure 2 Gelatt's decision-making frame of reference

Taken from E. L. Tolbert, **Counseling for Career Development**, 1974 Houghton Mifflin Comany - Boston p.66



### Hershenson and Roth's Theory

Hershenson and Roth (1966) also tried to explain the dynamics of the process of decision - making. They conceptualized vocational development as a decision - making process in which the range of possibilities is narrowed, and the strength of the remaining possibilities is increased. As a result of a series of decision making actions, the individual is led in a specific direction, and the result becomes more and more inevitable (Hershenson & Roth, 1966 in Tolbert, 1974).

### Hilton's Theory

Hilton (1962) underlines the cognitive aspect of vocational decision-making. Hilton's theory is based on the concept of cognitive dissonance. The decision making process begins with input from the environment which raises the level of dissonance. The individual feels a need to reduce the level of dissonance. "Dissonance" is a lack of balance or problem in the individual's understanding of his situation (Hilton, 1962 in Tolbert, 1974).

### Tolbert's Views On Career Development

Tolbert, (1974) after discussing various theories, approaches and research projects, he presents his own point of view as follows :

- Career development begins with earliest experiences, and is lifelong.

- There are stages in the career development process due to psychological, physiological, social and economic factors.

- Career development takes factors related to the individual's life stage into account in an increasing manner while involving succession of choices.

- Choices in career development are functions of

- a) values

- b) opportunities

- c) individuals' anticipations about being accepted in the new setting.

- The direction and level of choice is substantially guided by the family and cultural factors.

- Career maturity involves making choices and willingness to take responsibility for them. (Tolbert, 1974 p.75)

#### Tolbert's Implications About Theories

1. Career development is part of general development.

2. Career development is a process and needs continuous emphasis.

3. Career development is shaped by home and school.

4. The theme of career maturity organizes most of the educational activities, and motivates the relation between in-school and post-school life of the individual.

5. A variety of approaches and media are needed for vocational choice and development.

6. Students need a system to provide feedback for evaluation and improvement.

7. Career development is based on the comprehension of students about their values, abilities, interests and needs. Therefore, self-understanding should be promoted.

8. School must recognize the development of an identity in terms of life work in students as a major task.

9. Decision-making practices should be provided at all levels. Students need to learn how to make decisions and should develop an effective personal style, since career decisions are made throughout life.

10. Students need to know and understand the world of work for their career development to proceed.

11. General information about the world of work, occupational descriptions and local trends and placement should be provided and this information should be regularly and continuously updated.

12. Special attention on transition points is necessary. Before choice-points, realistic exploratory activities should take place. Assistance during and after the transition periods should be provided. Follow-up should be done to understand the need for additional help.

13. Disadvantaged students need extra help and special remedial programs to gain necessary skills to make choices. New approaches may be required to provide assistance for such students.

14. Career values, together with other aspects of career development are learned from a variety of relationships and experiences such as in class, textbooks, school activities, home, and the community. Therefore, the schools, starting in the primary grades, need to be aware of concepts which are reinforced.

(Tolbert, 1974 p.76)

Among these implications, some items underline the importance of guidance counseling in schools. As stated in items 3, 4, 8 and 14, schools are important centers to assist the adolescent in his/her career development.

In items 11, 12, 13 point out in what courses guidance should be given. The importance of providing information about the world of work and helping the individual to have self-understanding is obvious and these activities are major parts of vocational counseling.

As easily seen, when these implications are looked through, they support the parts of the Career Maturity Inventory - Competence Test, which is discussed later.

The rationale of the present research is supported by item 9 which emphasizes the importance of decision-making, the need to teach students how to make decisions. Thus, the need to an instrument to measure the decision-making dimension of the career maturity is obvious.

## The Career Maturity Inventory

### Crites' Project

The construct of vocational maturity was developed by the team of Career Pattern Study, and Crites was a member of the team whose leader was Donald E. Super. They also started the work on an instrument to assess career maturity. The concepts currently used are related to those developed by Super and his associates. Thus, the "Vocational Development Project" is related to Super's theory of Career Development (Tolbert, 1974 ; Zytowski, 1970).

The CMI is based on two criteria :

- 1) Beginning and end points of career behavioral change is statistically different
- 2) The curve of this change is systematically related to time.

The procedure of creating items was as follows:

- 1) Write items that are theoretically relevant to career maturity and also representative of verbal vocational behavior of adolescents
- 2) Select items as indices of career maturity that differentiate among age & grade levels in adolescence in a systematic way

- 3) Construct research in psychometric characteristics of selected items including internal consistency, response bias and validity. (Crites, 1978 p.6)

Crites selected items generated from a number of dimensions of vocational development for which he found a consistent and systematic relationship with indices of development. He found that maturity was more closely related to grade rather than age and vocational maturation measured by Crites' instrument is more dependent upon external factors. (Zytowski, 1970)

The CMI has a combination of cross-sectional and longitudinal designs as proposed by Schaie (1965, 1970 in Crites, 1978). Samples from grade 5 to 12 are tested and retested one year later. The mean of the second test of the grade n of this year is compared to the mean of the grade n of the year before. If the means are not significantly different, then it can be assumed that the samples are from the same population. When they are combined, a composite longitudinal gradient is formed. (Crites, 1978)

The design is shown in Figure 3.



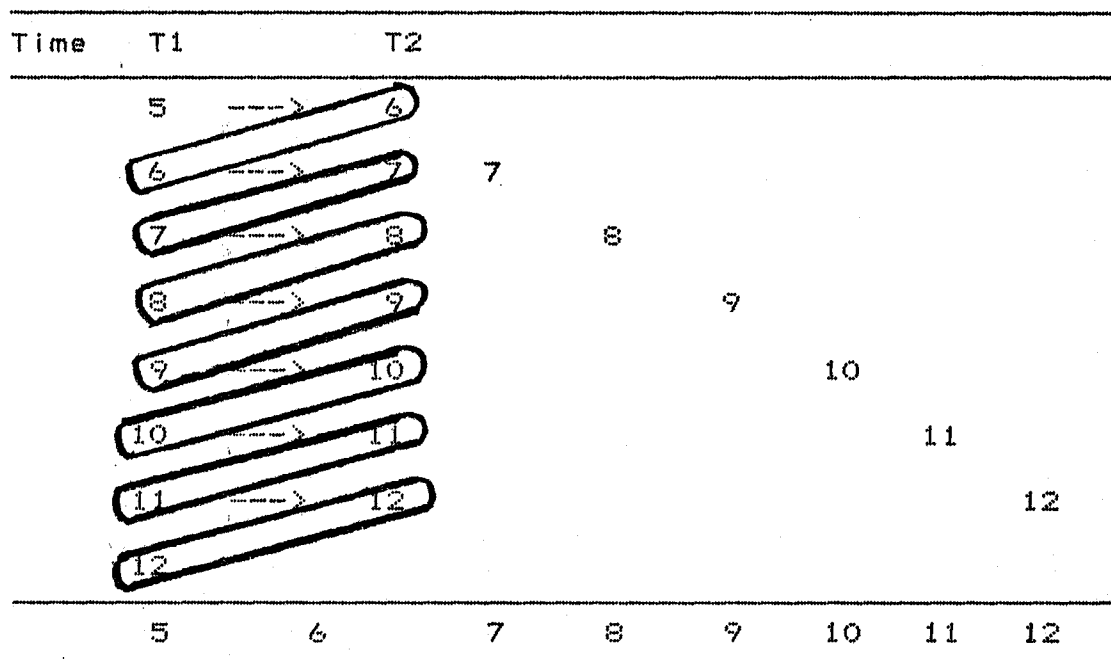


Figure 3 The Composite Longitudinal Design

Taken from Crites, J.O. (1978) **Career maturity inventory theory and research handbook**. California : McGraw-Hill.

#### The Attitude Scale

The Attitude Scale covers the following areas :

1. Involvement in the process of vocational choice
2. Orientation toward the problem of vocational choice
3. Independence in decision making
4. Preference for factors in vocational choice

Five thousand students from grades 5 to 12 were used in the standardization of the scale (Tolbert, 1974).

The content of items were taken from everyday-life situations. A pool of 1000 items were accumulated from the statements of clients in vocational counseling, over a period of five years.

The attitude scale is made of two forms. One is the Attitude Scale - Screening Form and the other is the Attitude Scale - Counseling Form. The Screening Form consists of 50 items. Attitudes were expressed in both first and second person to make the items more valid.

There were two experimental forms of the Screening Form. One was a five-point Likert type scale, and the other was an equivalent form with a true-false option to have better differentiation age/grade grouping. The results of item study showed that :

i) Fifty of the 100 items were related to grade level. This variable was found to yield greater differentiation than age.

ii) There were no significant differences between items written in first person and second person.

iii) The true-false option produced better differentiation in both age and grade, so this form is used as the Attitude Scale .

iv) Differences in sex and school were negligible.

v) The means were increasing as the grade increased

The Counseling Form is constructed after the completion of the Screening Form. It contains 75 items of true / false response type. Fifty of the items came from the screening form whereas 25 are new items. (Crites, 1978 p.9-22).

#### The Competence Test

The multiple-choice items were developed in two ways :

i) Item stems were written to describe a realistic case such as a problem, a plan, or a job of a hypothetical person. Subject matter was drawn from counseling case records, personal experiences, biographies and other real life sources.

ii) The item alternatives were based upon the responses of students to open-ended forms of the item stems. The students were in grades 7 through 12 in Cedar Rapids, Iowa school system. The average of numbers of students in each group was 30. (Crites, 1978)

The Competence Test consists of five subtests each containing 20 multiple-choice items. These subtests are :

- Knowing Yourself (Self-Appraisal)
- Knowing About Jobs (Occupational Information)
- Choosing A Job (Goal Selection)
- Looking Ahead (Planning)
- What Should They Do ? (Problem Solving)

The intercorrelations of the parts is given in the Table 2.

The fifth response alternative in each item in all subtests is "don't know". This is put deliberately to reduce score variances which may be attributed to response bias. In the selection of item stems, an effort has been made to represent different ethnic groups and counteract sexual stereotypes often associated with certain occupations. (Crites, 1978)

Table 2

Intercorrelations of the parts of the competence test

| Grade | Competence Test Parts <sup>a</sup> |     |     |     |     |     |     |     |     |     |
|-------|------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|       | 1-2                                | 1-3 | 1-4 | 1-5 | 2-3 | 2-4 | 2-5 | 3-4 | 3-5 | 4-5 |
| 6     | .60                                | .57 | .52 | .48 | .63 | .57 | .47 | .53 | .45 | .45 |
| 7     | .63                                | .60 | .56 | .53 | .66 | .60 | .53 | .59 | .53 | .52 |
| 8     | .65                                | .61 | .59 | .56 | .67 | .62 | .56 | .59 | .55 | .54 |
| 9     | .65                                | .61 | .58 | .58 | .69 | .62 | .58 | .62 | .58 | .57 |
| 10    | .67                                | .63 | .60 | .59 | .71 | .66 | .60 | .65 | .61 | .60 |
| 11    | .64                                | .60 | .55 | .55 | .69 | .62 | .57 | .63 | .58 | .58 |
| 12    | .52                                | .59 | .55 | .55 | .68 | .63 | .56 | .62 | .56 | .58 |

Note : The values are significant at or beyond .01 level

a: 1 - Knowing Yourself (Self-appraisal)

2 - Knowing About Jobs (Occupational Information)

3 - Choosing A Job (Goal Selection)

4 - Looking Ahead (Planning)

5 - What Should They Do ? (Problem Solving)

(Crites, 1978)

The Problem Solving Subtest (What Shoul They Do ?)

The problems in career development, arise in the process of decision making. The adolescent must decide under the pressure of :

- i) insufficient aptitude for a preferred occupation
- ii) conflict with parents over career goals
- iii) limitations imposed by emotional & physical handicaps
- iv) indecision and unrealism in making a career choice

An indicator of career maturity is the level of ability on decision-making. Therefore this subtest is constructed and included in the CMI (Crites, 1978).

Crites conceptualizes problem solving as :

" In the course of career development during adolescence, problems arise in the process of decision making with which the young person must learn to cope. The more career mature, the more able the adolescent is to solve these problems in a creative and integrative way - one which is personally satisfying as well as socially acceptable." (Crites, 1978 p. 28)

The stem of the items is a case which summarizes a career decision-making problem that an adolescent is expected to face. The response alternatives indicate compensation, consultation, compliance and a possible expression of confusion and or indecisiveness. The keyed response is the one which is supposed to be the most effective one. The term "effectiveness" is defined by Goldfried & D'Zurilla (1969, p.179 in Crites 1978 p. 29) as :

"In any given situation where a solution to a problem or some decision is required, the most effective response would be the one which would best resolve the problematic nature of the situation, and also tend to maximize other positive consequences - long-term as well term consequences, and social as well as personal consequences - and minimize negative ones. "

So an effective response is the one which minimizes denial & distortion of reality, trial-and-error and escape from the field and maximizes the formulation of alternatives or the utilization of consultive expertise and resources. (Crites, 1978)

## Reliability

For the measure of reliability, internal consistency was calculated using the Kuder-Richardson formula 20, for each grade level in the 1972 sample (N's ranged from 120 to 475). The values are given in Table 3 .

Table 3

The Kuder - Richardson 20 coefficients of internal consistency for each grade level.

| Grade | K-R 20 values |
|-------|---------------|
| 6     | .58           |
| 7     | .63           |
| 8     | .72           |
| 9     | .73           |
| 10    | .82           |
| 11    | .78           |
| 12    | .80           |

Crites explains the low K-R 20 values for the sixth and the seventh grades as "students are learning how to cope with decisional problems but they have not developed consistent decision making strategies." (Crites, 1978)

## Validity

content validity.

Items were written on the basis of verbal behavior of children, adolescents and young adults. The choice alternatives were based on the model of career maturity. These items are theoretically meaningful and related to grade as an index of time . (Crites, 1978)



criterion - related validity.

A necessary criterion for any measure of a developmental variable is that, it has a systematic relation to time. The items were selected only if they were related to grade level, therefore a systematic relation between test scores and grade level is achieved; and this supports the criterion-related validity. (Crites, 1978)

construct validity.

The parts of the competence test were designed according to the Career Choice Competencies in the model developed by Crites which asserts that the parts of the are theoretically interrelated. Empirical data obtained in the form of correlation coefficients range between .40s and .60s support this. (see Table 2).

The test is compared to the Cognitive Vocational Maturity Test (CVMT). The correlations found range between .62 and .77 .

## Studies Using Career Maturity Inventory

In order to have better comprehension on the CMI and its utility value some studies in which the CMI was used, are presented below. Most of the studies using the CMI were conducted on disadvantaged youth. In some other studies the CMI was used to assess the effects of particular guidance programs on the career maturity of students. Another group of studies was about juvenile and minority youth. The last group of studies is formed by those conducted to see relationships between career maturity and SES, academic achievement etc.

### Studies On Disadvantaged Youth

Several investigations have been conducted on the career maturity of the disadvantaged youth and the CMI was used in these studies. Some of the findings are as follows :

- The results of WAIS and CMI subtests show that there is some similarity in the content of what they are testing. The constructs of intelligence and career maturity are significantly related in the disadvantaged populations. (Palmo, Lutz, 1983)

- The work attitudes of disadvantaged and non-disadvantaged students of 11th- and 12th-grades are not significantly different from each other but they differ in the work values (Smith, 1976).

- The membership in a College Bound program doesn't have an effect on the vocational maturity and occupational realism of the disadvantaged youth. (Boyd, 1975)

- The level of motivation and aspiration for career oriented programs of the non-disadvantaged group of middle school age students (males and females) was significantly higher than the disadvantaged group. (Adams, 1974)

- Work Experience Career Exploration Program had a significant effect on the maturity of career attitudes, on self-appraisal, on the occupational information and career choice competencies of 14- and 15-year-old disadvantaged students. (Coogan, 1975)

- Tinney (1973) made a research on mentally retarded students and found no significant difference in the CMI Attitude Scale scores with respect to sex, grade, vocational training, mental age and ethnic group. Intelligence quotient and chronological age, on the other hand, were related to the CMI Attitude Scale total scores.

- In a study done among the disadvantaged 8th- and 12th-grade students in a rural eastern Kentucky area, there no significant difference was found on the CMI Attitude Scale scores. In the same study, the difference was significant however between the 8th- and 12th-grade students on CMI - Attitude Scale scores (Whiteman, 1972).

- Karayanni (1976), in his research on the emotionally maladjusted highschool students, found a significant difference between the career maturity scores of well-adjusted and maladjusted students, and between different grades. No significant sex differences were found.

- Bingham (1974) found a significant difference in career attitude score of normal and learning disability groups.

Studies On The Relationship Between Educational,  
Vocational, Counseling Programs And The Career Maturity  
Of Adolescents

Many researches were conducted to test the effectiveness of various existing programs, or to construct new programs on vocational development. The present investigator had the opportunity to look through eleven of such studies.

In eight of these studies (Sawyer, 1972; Johnson, 1974; Wingett, 1974; New, 1974; Devine, 1975; Olsen 1975; Burson, 1976; Hamby, 1977) the program tested or developed had no significant effect on the career maturity of the students. Olsen, in his study, compared the decision-making skills course with the regular guidance curriculum and recommended the regular curriculum of the guidance program.

Only in three studies (Miller, 1974; Kerr, 1974; Cross, 1975) significant effect of the special programs was found on the career development of students. The study conducted by Miller was applied to students whereas Kerr carried the program with teachers of 6th-, 7th-, and

8th-grade students and obtained a difference in the students' scores on the Attitude Scale and the Competence Test Part II, Knowing About The Jobs.

Cross states that, the difference he found is statistically, but not practically significant.

Flake (1975) studied the effects of counseling by the same and opposite sex counselors. The results showed a significant effect of counseling activities but no effect of the sex of the counselor.

#### Studies On Juvenile And Minority Youth

In a study conducted by Williams (1975) among black high school students, no significant sex difference was found on the CMI scores but the difference between grade levels were significant.

The nondelinquent youth scored significantly higher than the delinquents on all scales of CMI. (Sutton, 1976)

Martenis (1976) compared the CMI scores of a group of 11th and 12th-grade adolescents under the supervision of the court and a Comparison Group of 100 volunteer students in Psychology classes at Acton-Boxborough Regional High School (Massachusetts). He found no

significant difference between the scores of the groups on the Competence Test part 1: Knowing Yourself, (self-appraisal) part 5: What Should They Do ? (Problem Solving). The significant difference were on part 2: Knowing About Jobs (Occupational Information), part 3: Choosing A Job (Goal Selection), and part 4: Looking Ahead (Planning). Martenis concluded that the results of his study will form a basis for formation of more effective treatment procedures for juvenile youth under the supervision of the court.

#### Studies On Students Of Grades Six Through Ten

Franklin (1975) found very significant differences on the CMI scores Junior High School students as a function of age, grade level, race, intelligence and achievement in terms of final cumulative grade average; but no significant difference as a function of socio-economic status.

There are more than 500 more studies in which some parts or the total CMI is used and this number is increasing by time. (Crites, 1978).

## CHAPTER III

## METHOD

## The Transliterated Equivalence Study

The purpose of this part of the research is to see if the original English form and its Turkish translation were equivalent in terms of what they measure and if both were comprehended and interpreted in the same way or not. In order to accomplish the purpose four groups of students are formed and two operational hypotheses were put forward.

Hypothesis 1 : The difference between the means of scores of each group on the two forms will not be significantly different.

Hypothesis 2 : The difference between the means of scores of the groups on the same form will not be significantly different.

Sample

The subjects were bilingual 8th-grade students of Robert College. There were four groups each with about 20 students. Gender was equally distributed and their ages



were between 14 and 16. All subjects were coming from high SES families.

Detailed information on the subjects is given in Appendix C.

### Instruments

In the Transliterated Equivalence Study there were two main instruments :

- i) The Demographic Data Questionnaire;
- ii) The Career Maturity Inventory (CMI);

For the purposes of the transliterated equivalence of the CMI, besides the original English version, three experimental forms were prepared as described below :

- i) Form A : The English Form (The original)
- ii) Form B : The Turkish Form (The translation)
- iii) Form C : The Turkish-English Mixed Form - I
- iv) Form D : The Turkish-English Mixed Form - II-

The translation of the original form was done by Aysim Incesulu and a revision on the translation was accomplished by the investigator and his thesis supervisor.

In the Form C, the items 1,2,4,6,7,12,13,14,16,18 were in English and the items 3,5,8,9,10,11,15,17,19,20 were in Turkish. The items to be in English or in Turkish were decided randomly.

For the Form D, Turkish items in Form C were given in English in Form D and English items in Form C were given in Turkish in Form D.

#### Procedure

The procedure of the Transliterated Equivalence part research consists of the following steps :

A revision on the translation done by the investigator and the thesis supervisor was subject to back translation. This was done by three English teachers who were considered to be experts in teaching English. The back translation was carried out to see how well the Turkish translation had preserved the meanings, ideas and points made in the original English form.

Following the back translation process, the four forms are formed as explained above.

These forms were administered to the students according to the following design :

First, the subjects were divided in four groups each with 20 or 21 students. In the first administration, each form is given to one group. Two weeks later, the forms were administered to the four groups so that the first two groups exchanged the forms and the second two groups exchanged the forms. The process is shown in the Figure 4.

|                       |  | G R O U P S |           |           |           |
|-----------------------|--|-------------|-----------|-----------|-----------|
|                       |  | I           | II        | III       | IV        |
| FIRST ADMINISTRATION  |  | Form<br>A   | Form<br>B | Form<br>C | Form<br>D |
| SECOND ADMINISTRATION |  | Form<br>B   | Form<br>A | Form<br>D | Form<br>C |

Figure 4 The design of administration of the forms .

The items have been re-evaluated and necessary changes and adaptations have been done.

### Statistical Analyses

The following statistical analyses have been made:

- t-test
- Anova
- Pearson Product Moment Correlations
- Kuder - Richardson 20 coefficient
- Item - total correlations



### Results Of The Transliterated Equivalence Study

The data obtained from the administration of the forms to the groups in the transliterated equivalence part of the research is presented below. Following the presentation of the data, the results of Analysis of Variance takes place. After the interpretation of the results some further analyses take place and their results are also presented together with the interpretation of them.

The data obtained from the administration of the instruments in the transliterated equivalence study is given in Table 4. As seen in the table, the mean scores of the four groups in two administrations ranged between 6.00 and 8.24 with standard deviations ranging between 2.03 and 3.43. The Kuder Richardson formula 20 coefficients were also calculated for each group and for each administration. The values were between .09 and .71.

Table 4

Statistical values obtained from English and Turkish forms administered to Groups I, II, III & IV

| Forms                                 | Groups |      |       |       |      |      |      |      |
|---------------------------------------|--------|------|-------|-------|------|------|------|------|
|                                       | I      |      | II    |       | III  |      | IV   |      |
|                                       | A      | B    | B     | A     | C    | D    | D    | C    |
| N                                     | 20     | 20   | 21    | 21    | 20   | 20   | 21   | 21   |
| greatest possible score               | 20     | 20   | 20    | 20    | 20   | 20   | 20   | 20   |
| least possible score                  | 0      | 0    | 0     | 0     | 0    | 0    | 0    | 0    |
| max. score                            | 10     | 11   | 12    | 12    | 11   | 11   | 10   | 11   |
| min. score                            | 2      | 2    | 1     | 1     | 4    | 2    | 3    | 3    |
| range                                 | 8      | 9    | 11    | 11    | 7    | 9    | 7    | 8    |
| mean                                  | 6.00   | 6.10 | 8.24  | 7.10  | 7.16 | 5.90 | 7.06 | 7.29 |
| mode                                  | 6      | 2    | 11    | 4     | 7    | 8    | 7    | 8    |
| median                                | 6.00   | 6.50 | 6.50  | 6.50  | 7.50 | 6.50 | 6.50 | 7.00 |
| variance                              | 6.42   | 7.78 | 11.79 | 11.69 | 4.14 | 5.46 | 4.76 | 7.41 |
| standard deviation                    | 2.53   | 2.79 | 3.43  | 3.42  | 2.03 | 2.34 | 2.18 | 2.72 |
| K-R 20 coeff. of internal consistency | .47    | .55  | .71   | .67   | .09  | .37  | .21  | .50  |

Analysis of variance is used to compare the group means and to see the effect of language difference on the test scores. The results are shown in the Table 5 .

Table 5

Analysis of variance of CMI by groups, by forms of different languages

| Source of Variation | Sum of Squares | DF  | Mean Square | F     | Signif of F |
|---------------------|----------------|-----|-------------|-------|-------------|
| Main Effects        | 80.389         | 4   | 20.097      | 2.613 | .037        |
| GROUP               | 68.584         | 3   | 22.861      | 2.972 | .034        |
| FORMS               | 11.805         | 1   | 11.805      | 1.535 | .217        |
| 2-way Interactions  | 19.873         | 3   | 6.624       | .861  | .463        |
| GROUP      FORM     | 19.873         | 3   | 6.624       | .861  | .463        |
| Explained           | 100.262        | 7   | 14.323      | 1.862 | .079        |
| Residual            | 1199.836       | 156 | 7.691       |       |             |
| Total               | 1300.098       | 163 | 7.976       |       |             |

As seen in the ANOVA table, there is a significant difference between groups, specifically the classes that were administered the test. In order to see if this difference is due to the instrument or due to the sample the analysis is carried on, and scheffe test is performed. As a result, Groups I and II are found significantly different in the first administration. The comparison of the mean scores showed that only the mean score of Group II in the administration of the Turkish form was significantly higher than the mean scores of Group I in both the Turkish and the English forms ( $p < .05$ ). The difference between all the other mean scores found non-significant ( $p > .10$ ).

To have a better idea about the effect of the language, the scores of Group I and Group II were combined together as if they form a single group. The scores of Group I obtained from the Form A in the first administration and the scores of Group II obtained from the Form A in the second administration were put together. The same was done for scores obtained from Form B. The scores of Group I obtained from Form B in the second administration and the scores of Group II obtained from Form B in the first administration are put together. In this way, there have been two sets of scores of the same sample.



Groups III and IV had mixed forms C and D. The responses of the students to the Turkish items in both forms and their responses to English items in both forms are collected together and two language scores for each sample is computed. Hence for Groups III and IV we again have two sets of scores, English and Turkish. The statistical values computed are given in Table 6 and Table 7 .

Table 6

Statistical values obtained from English and Turkish forms administered to Groups I & II

| N=41  | English<br>Items<br>Form A | Turkish<br>Items<br>Form B |
|---|----------------------------|----------------------------|
| greatest possible score                       | 20                         | 20                         |
| least possible score                          | 0                          | 0                          |
| maximum score                                 | 12                         | 12                         |
| minimum score                                 | 1                          | 1                          |
| range   | 11                         | 11                         |
| mean  | 6.56                       | 7.20                       |
| mode  | 8.00                       | 11.00                      |
| median  | 6.50                       | 6.50                       |
| variance                                      | 9.20                       | 10.76                      |
| standard deviation                            | 3.03                       | 3.28                       |
| K-R 20 coefficient<br>of internal consistency | .59                        | .67                        |

The mean obtained from the administration of the Form A to the Groups I and II was 6.56 with a standard deviation 3.03 and the mean of the same groups on Form B was 7.20 with a standard deviation 3.28. The Kuder Richardson 20 coefficients for Forms A and B were .59 and .67 respectively.

The correlation between the scores of Form A and the scores of Form B is .71 ( $p < .001$ ).

The means in Table 6 were compared using  $t$ -test, and the difference between the means is found not to be statistically significant ( $t=1.70$ , and  $p = .10$ ).

The mean scores of Group III and IV on English and Turkish items of the mixed forms were found 6.59 and 7.07 with standard deviations 2.39 and 2.51, and Kuder Richardson coefficients .59 and .67 respectively. The statistical values are presented in the Table 7.

Table 7

Statistical values obtained from English and Turkish items administered to Groups III & IV

| N=41                    | English Items<br>of mixed forms | Turkish Items<br>of mixed forms |
|-------------------------|---------------------------------|---------------------------------|
| greatest possible score | 20                              | 20                              |
| least possible score    | 0                               | 0                               |
| maximum score           | 11                              | 12                              |
| minimum score           | 3                               | 3                               |
| range                   | 8                               | 9                               |
| mean                    | 6.59                            | 7.07                            |
| mode                    | 5.00                            | 10.00                           |
| median                  | 7.00                            | 7.50                            |
| variance                | 5.70                            | 6.32                            |
| standard deviation      | 2.39                            | 2.51                            |
| K-R 20 coefficient      | .59                             | .67                             |

The correlation between the scores obtained from Turkish items and scores obtained from English items is .67 ( $p < .001$ ).

The means are compared using t-test, and the difference between the means is found not to be statistically significant ( $t=1.56$ , and  $p= .25$ ).

When all the scores obtained from English pure forms and English items in the mixed forms, and when the same thing is done for the Turkish forms and items for all of the groups, the values obtained are as in Table 8.

The correlation between the scores of English forms and items and the scores of Turkish forms and items is .68 ( $p < .001$ ). This coefficient is also higher than that obtained in the test-retest reliability of the Turkish form.

Table 8

Statistical values obtained from English and Turkish forms and items administered to all groups.

| N=82                    | English Items<br>and pure forms | Turkish Items<br>and pure forms |
|-------------------------|---------------------------------|---------------------------------|
| greatest possible score | 20                              | 20                              |
| least possible score    | 0                               | 0                               |
| maximum score           | 12                              | 12                              |
| minimum score           | 1                               | 1                               |
| range                   | 11                              | 11                              |
| mean                    | 6.82                            | 6.89                            |
| mode                    | 6.00                            | 8.00                            |
| median                  | 6.50                            | 6.50                            |
| variance                | 7.73                            | 8.22                            |
| standard deviation      | 2.78                            | 2.87                            |
| K-R 20 coefficient      | .50                             | .54                             |

The mean obtained from the English items and pure forms to all subjects was 6.82 with a standard deviation 2.78 and the mean of all subjects from the Turkish items and pure forms was 6.89 with a standard deviation 2.87. The Kuder Richardson 20 coefficients were .50 and .54 respectively.

The means are compared using t-test, and the difference between the means is found not to be statistically significant (  $t=0.29$ , and  $p> .40$  ) .

The item-total correlations for each item in each test for each group of samples is calculated. The coefficients are shown in the Table 9 .

For Groups I & II, each item had similar item-total correlations in English and Turkish forms. The cut-off point is taken as .20 (Gable, 1986 p.158) The items were both above .20 or both under .20 . Only the items 14, 15, and 20 were out of the situation. Item 14 had an item-total correlation .21 in the English form (above the cut-off point) and .17 in the Turkish form (below the cut-off point). But, apparently, although they are at opposite sides of the cut-off pint, they are close enough to conclude that the translation doesn't have a significant effect on the comprehension of the item.

The same argument can be done for the item 15 with the item-total correlations .15 in the English form and .22 in the Turkish form.

Table 9

Item Total Correlation Coefficients obtained from the administration of Forms A, B, C, D

| Item No. | Group I-II Form A (English) | Group I-II Form B (Turkish) | Grp. III-IV Mixed Forms (English) | Grp. III-IV Mixed Forms (Turkish) |
|----------|-----------------------------|-----------------------------|-----------------------------------|-----------------------------------|
| 1        | .35 #                       | .28                         | .26                               | .41 ##                            |
| 2        | .11 *                       | -.03 *                      | -.09 *                            | -.04 *                            |
| 3        | .34 #                       | .34 #                       | .19 *                             | .37 #                             |
| 4        | .02 *                       | -.20 *                      | .44 ##                            | .14 *                             |
| 5        | .40 ##                      | .42 ##                      | .18 *                             | .22                               |
| 6        | -.08 *                      | .06 *                       | .17 *                             | .02 *                             |
| 7        | .52 ##                      | .28                         | .13 *                             | .35 #                             |
| 8        | .15 *                       | .16 *                       | -.03 *                            | -.13 *                            |
| 9        | -.14 *                      | -.19 *                      | -.40 *                            | -.20 *                            |
| 10       | .42 ##                      | .58 ##                      | .46 ##                            | .48 ##                            |
| 11       | .44 ##                      | .29                         | .27                               | .08 *                             |
| 12       | .69 ##                      | .78 ##                      | .54 ##                            | .57 ##                            |
| 13       | .40 ##                      | .40 ##                      | .17 *                             | .25                               |
| 14       | .21                         | .17 *                       | .32 #                             | .24                               |
| 15       | .15 *                       | .22                         | .16 *                             | .17 *                             |
| 16       | .21                         | .47 ##                      | .50 ##                            | .44 ##                            |
| 17       | .63 ##                      | .66 ##                      | .61 ##                            | .62 ##                            |
| 18       | .65 ##                      | .65 ##                      | .57 ##                            | .52 ##                            |
| 19       | .44 ##                      | .71 ##                      | .35 #                             | .48 ##                            |
| 20       | .40 ##                      | -.10 *                      | .04 *                             | .15 *                             |
| mean     | .32 #                       | .30                         | .24                               | .26                               |
| median   | .375 #                      | .285                        | .225                              | .245                              |
| maximum  | .69 ##                      | .71 ##                      | .61 ##                            | .62 ##                            |
| minimum  | -.14                        | -.20                        | -.40                              | -.20                              |
| range    | .83                         | .91                         | 1.01                              | .82                               |

\* : The items with item-total correlations below .20

# :  $p < .05$

## :  $p < .01$

On the other hand, item 20 has an item-total correlation .40 in the English form but  $-.10$  in the Turkish form. This implies that item 20 must be re-examined some changes may have to be done. To understand to what extend the difference between item-total correlations of item 20 in English and Turkish form is important, the item-total correlation table for all the responses to English form and items, and Turkish form and items is prepared. (see Table 10)

In the Table 10, each item had similar item-total correlations in English and Turkish forms. The cut-off point is taken as  $.20$  (Gable, 1986 p.158) The items were both above  $.20$  or both under  $.20$  . Only the item 15 is out of the situation. It has an item-total correlation  $.16$  in the English form (below the cut-off point) and  $.22$  in the Turkish form (above the cut-off point). But, apparently, although they are at opposite sides of the cut-off pint, they are close enough to conclude that the translation doesn't have a significant effect on the comprehension of the item.

On the other hand, item 20 got rid of its problematic nature when all the responses were put together.



Table 10

Item Total Correlation Coefficients obtained from all the responses given to English Forms and items, Turkish forms and items (N=82)

| Item No | English | Turkish |
|---------|---------|---------|
| 1       | .37 ##  | .28 #   |
| 2       | .05 *   | -.07 *  |
| 3       | .35 ##  | .28 #   |
| 4       | .08 *   | .08 *   |
| 5       | .31 ##  | .33 ##  |
| 6       | -.06 *  | .09 *   |
| 7       | .44 ##  | .21     |
| 8       | .03 *   | .04 *   |
| 9       | -.16 *  | -.24 *  |
| 10      | .45 ##  | .53 ##  |
| 11      | .27 #   | .27 #   |
| 12      | .63 ##  | .67 ##  |
| 13      | .33 ##  | .32 ##  |
| 14      | .22 #   | .21     |
| 15      | .16 *   | .22 #   |
| 16      | .32 ##  | .47 ##  |
| 17      | .62 ##  | .63 ##  |
| 18      | .55 ##  | .61 ##  |
| 19      | .46 ##  | .55 ##  |
| 20      | .29 ##  | .36 ##  |
| mean    | .29 ##  | .29 ##  |
| median  | .315 ## | .280 #  |
| maximum | .63 ##  | .67 ##  |
| minimum | -.16    | -.24    |
| range   | .79     | .91     |

\* : The items with item-total correlations below .20

# :  $p < .05$

## :  $p < .01$

### Reliability Of The Turkish Form

The purpose of this part of the study was to see if the adapted Turkish translation of CMI was reliable in terms of internal consistency and stability.

Hypothesis 1: The internal consistency coefficient computed using Kuder Richardson 20 formula is greater than or equal to .72 as the original form.

Hypothesis 2: The test-retest reliability coefficient is greater than or equal to 0.72

#### Sample

The subjects were 8th grade students of private and state high schools with various family background and SES. The number of subjects in this part of the study was 236. Gender was almost equally distributed (45% female, 55% male). These subjects were used in calculating the Kuder Richardson 20 coefficient of internal consistency and 129 of them were given the test for the second time to calculate the test-retest correlation for the subtest stability. Detailed information about the subjects is given in Appendix D.

### Instrument

There were two instruments used in this part of the study. The first one was a Demographic Data Questionnaire and the second instrument was the revised version of the Turkish form of the What Should They Do ? part of the Career Maturity Inventory. (CMI-WSTD?)

After the transliteral equivalence study, a questionnaire was given to the faculty members and their opinion was asked about the adaptation of the items which are not meaningful under the conditions in Turkiye. Their views were synthesized and those items (items numbered 4, 5, 17) were adapted into conditions of Turkiye.

The instrument has 20 items. Each item gives a case about a student who faces a problem in giving decision to choose a vocation or to make career on a field. After the statement of the case, 5 choices are given. One of the choices is "don't know", and the others are alternatives to cope up the problem. Only one of the alternative is the best answer. All the others are considered to be "false choice".

The best choice is the one which leads the most effective action. The word "effectiveness" is defined by Goldfried and D'Zurilla (1969,p.179) as: resolving problematic nature of the situation, tending to maximize other positive consequences (long-term or short-term , social as well as personal consequences) and minimizing negative ones.(Crites,1978 p.29)

The instrument is given in the Appendix A and the questionnaire is given in Appendix B.

#### Procedure

The test was administered to 236 students, and two weeks later, 135 of the subjects were given the Turkish form of CMI-WSTD? . 129 of them were in the group who took the test two weeks ago and this time they took it for the second time. Six of the students were excluded from test-retest reliability analysis since they didn't take the test before. Using the data obtained from the 129 subjects, the test-retest reliability was calculated.

In addition to the calculation of the Kuder Richardson 20 values, item analysis was performed for each administration of the inventory. For low item-total coefficients, some adaptations are performed to increase the internal consistency.

Statistical Analysis

- Kuder - Richardson 20 coefficient
  - Test - retest correlations
  - Item - total correlations
- have been computed.

The results are discussed in the chapter VI DISCUSSION  
ON THE RESULTS.

## CHAPTER IV

## RESULTS OF THE RELIABILITY STUDY

The following statistical values are calculated and the following analyses have been made:

- Number of the subjects in the first administration of the subscale was 236, in the second administration 135. The 129 of the subjects were included in the 236 in the first administration of the subscale and 6 of them took the test for the first time.

Some values obtained from the statistical analysis is given in Table 11. In the first administration of the test, the statistical values are computed for each school separately and the results are shown in the Table 12. Distribution of the statistical values with respect to the existence of guidance counseling office is shown in Table 13. The means are compared using t-test, and the difference between the means is found to be statistically significant with a t-value  $t=4.07$ , and level of significance  $p < .001$ .

Table 11

Statistical Values in the two administrations of the test

|   | First Adminis.<br>of the test | Second Adminis.<br>of the test |
|---|-------------------------------|--------------------------------|
| N   | 236                           | 135                            |
| greatest possible score                       | 20                            | 20                             |
| least possible score                          | 0                             | 0                              |
| maximum score                                 | 13                            | 14                             |
| minimum score                                 | 1                             | 2                              |
| range   | 12                            | 12                             |
| mean  | 6.76                          | 6.74                           |
| mode  | 5.00                          | 5.00                           |
| median  | 7.00                          | 8.00                           |
| variance                                      | 6.64                          | 6.84                           |
| standard deviation                            | 2.58                          | 2.61                           |
| K-R 20 coefficient<br>of internal consistency | .45                           | .45                            |

Test-retest reliability coefficient is calculated as 0.65 (N=129,  $p < .001$ )

Table 12

Statistical Values for each school in the first administration

|                                  | First<br>State<br>School | First<br>Private<br>School | Second<br>State<br>School | Second<br>Private<br>School |
|----------------------------------|--------------------------|----------------------------|---------------------------|-----------------------------|
| N                                | 78                       | 55                         | 42                        | 61                          |
| greatest possible score          | 20                       | 20                         | 20                        | 20                          |
| least possible score             | 0                        | 0                          | 0                         | 0                           |
| max. score                       | 13                       | 13                         | 11                        | 13                          |
| min. score                       | 1                        | 3                          | 1                         | 3                           |
| range                            | 12                       | 10                         | 10                        | 10                          |
| mean                             | 5.83                     | 7.58                       | 6.62                      | 7.30                        |
| mode                             | 5                        | 6                          | 5                         | 8                           |
| median                           | 7                        | 8                          | 6                         | 8                           |
| variance                         | 5.88                     | 6.88                       | 5.41                      | 6.51                        |
| stdrt. devi.                     | 2.43                     | 2.62                       | 2.33                      | 2.55                        |
| K-R 20<br>coef. of<br>int. cons. | .43                      | .50                        | .33                       | .44                         |



Table 13

Distribution of the statistical values with respect to the existence of guidance counseling office.

|                         | Schools With<br>Couns. Office | Schools Without<br>Couns. Office |
|-------------------------|-------------------------------|----------------------------------|
| N                       | 116                           | 120                              |
| greatest possible score | 20                            | 20                               |
| least possible score    | 0                             | 0                                |
| maximum score           | 13                            | 13                               |
| minimum score           | 3                             | 1                                |
| range                   | 10                            | 12                               |
| mean                    | 7.43                          | 6.11                             |
| mode                    | 8                             | 5                                |
| median                  | 8                             | 7                                |
| variance                | 6.65                          | 5.81                             |
| standard deviation      | 2.58                          | 2.41                             |
| K-R 20 coefficient      | .46                           | .40                              |
|                         | $t = 4.07$                    | $p < .001$                       |

All of the above analyses are on the first administration of the test.

For both the first and the second administrations of the test, item-total correlations are calculated.

The coefficients are given in the Tables 14 and 15 . Table 14 belongs to the first administration (N=236); Table 15 belongs to the second administration (N=135).

As seen in the Table 11, the Kuder Richardson 20 coefficients of internal consistency are far below what was hypothesized. Therefore, the research is expanded and some further studies are designed.

Considering the developmental nature of the test, in order to have a better comprehension about, and to see the effect of grade difference on the instrument, a comparative reliability study is designed. This study is explained in chapter V **COMPARATIVE RELIABILITY STUDY.**

Table 14

Item-Total correlations in the first administration of the test.

| Item No. | Item-Total Correlation Coefficient |
|----------|------------------------------------|
| 1        | .14 * #                            |
| 2        | .19 * ##                           |
| 3        | .42 ##                             |
| 4        | .02 *                              |
| 5        | .37 ##                             |
| 6        | .18 * ##                           |
| 7        | .21 ##                             |
| 8        | .11 *                              |
| 9        | .19 * ##                           |
| 10       | .38 ##                             |
| 11       | .31 ##                             |
| 12       | .35 ##                             |
| 13       | .42 ##                             |
| 14       | .22 ##                             |
| 15       | .18 * ##                           |
| 16       | .37 ##                             |
| 17       | .52 ##                             |
| 18       | .33 ##                             |
| 19       | .35 ##                             |
| 20       | .35 ##                             |
| mean     | .28 ##                             |
| median   | .320 ##                            |
| maximum  | .52 ##                             |
| minimum  | .02                                |
| range    | .50                                |

\* : The items with item-total correlations below .20 .

# :  $p < .05$

## :  $p < .01$

Table 15

Item-Total coefficients in the second administration of the test.

| Item No. | Item-Total Correlation Coefficient |    |
|----------|------------------------------------|----|
| 1        | .23                                | ## |
| 2        | .14                                | *  |
| 3        | .35                                | ## |
| 4        | .05                                | *  |
| 5        | .26                                | ## |
| 6        | .03                                | *  |
| 7        | .26                                | ## |
| 8        | .09                                | *  |
| 9        | .01                                | *  |
| 10       | .43                                | ## |
| 11       | .38                                | ## |
| 12       | .39                                | ## |
| 13       | .47                                | ## |
| 14       | .28                                | ## |
| 15       | .25                                | ## |
| 16       | .38                                | ## |
| 17       | .39                                | ## |
| 18       | .48                                | ## |
| 19       | .36                                | ## |
| 20       | .39                                | ## |
| mean     | .28                                | ## |
| median   | .315                               | ## |
| maximum  | .48                                | ## |
| minimum  | .01                                |    |
| range    | .47                                |    |

\* : The items have item-total correlations below .20

# :  $p < .05$

## :  $p < .01$

## CHAPTER V

### COMPARATIVE RELIABILITY STUDY

The reliability study showed that the instrument is not reliable in the 8th-grade level. In order to understand whether this is because the instrument is not valid under the conditions in Turkiye or because the adolescents haven't developed decision-making strategies, a comparative reliability study on 11th-grade students is conducted.

If the instrument is valid under the conditions in Turkiye, then the Kuder - Richardson 20 coefficient for the 11th grade is supposed to be the same as found by Crites in his research.

Therefore, the following hypothesis is put forward.

#### Statement Of The Hypothesis

Hypothesis 1: The internal consistency coefficient computed using Kuder Richardson 20 formula is greater than or equal to .78 as the original form for 11th grade

#### Sample

In the comparative reliability study, the instrument is administered to 49 11th-grade students in one of the private schools.

Detailed information is given in Appendix E.

### **Instrument**

The instruments were the same as used in the reliability study explained in chapter III.

### **Procedure**

The instrument was administered to 49 11th-grade students in one session for about one hour of time period.

### **Statistical Analyses**

- Kuder - Richardson 20 coefficient of internal consistency;
- Item - total correlation coefficients have been computed.

### **Results Of The Study**

The mode, mean, median, maximum and minimum scores, coefficient of internal consistency variance, standard deviation, item-total correlation coefficients are computed for the 11th-grade students and Kuder - Richardson 20 coefficient is found as .64 . The values are given in the Tables 16 and 17.

Table 16

Statistical Values in the administrations of the test to 11th-grade students.

---

|                         |      |
|-------------------------|------|
| N                       | 49   |
| greatest possible score | 20   |
| least possible score    | 0    |
| maximum score           | 14   |
| minimum score           | 0    |
| range                   | 14   |
| mean                    | 7.27 |
| mode                    | 8    |
| median                  | 7    |
| variance                | 9.28 |
| standard deviation      | 3.05 |
| K-R 20 coefficient      | .64  |

---

Table 17

Item-total coefficients in the administration of the test to the 11th-grade students.

| Item No. | Item-Total Correlation Coefficient |
|----------|------------------------------------|
| 1        | - .05 *                            |
| 2        | .09 *                              |
| 3        | .61 ##                             |
| 4        | - .11 *                            |
| 5        | .26                                |
| 6        | .29                                |
| 7        | .23                                |
| 8        | .12 *                              |
| 9        | - .12 *                            |
| 10       | .62 ##                             |
| 11       | .31 #                              |
| 12       | .57 ##                             |
| 13       | .48 ##                             |
| 14       | - .14 *                            |
| 15       | .52 ##                             |
| 16       | .43 ##                             |
| 17       | .50 ##                             |
| 18       | .48 ##                             |
| 19       | .59 ##                             |
| 20       | .67 ##                             |
| mean     | .32 #                              |
| median   | .370 #                             |
| maximum  | .67 ##                             |
| minimum  | - .14                              |
| range    | .81                                |

\* : The items with item-total correlations below .20 .

# :  $p < .05$

## :  $p < .01$



In order to improve the reliability of the test, the items with an item - total correlation less than .20 are examined closely. The data collected from 8th-grade students didn't help much for the improvement of the internal consistency. However, the data collected from the 49 11th-grade student formed a good basis to make some improvements. This is in accordance to what Crites implies, the 11th-grade students are supposed to have developed better decision-making patterns and he produced the items in relation with grade development assuming the solution found by higher grades is more efficient than that found by the lower grades.

Special effort is put to prevent any loss of the validity of the items.

As a result of statistical analyses performed on the basis of the data available, items 1, 8 and 14 are excluded from the test, and the answer key for the items 2, 4 and 9 are changed. This change is based on two criteria :

- i) the alternative which was chosen by the group formed by the best 27% of the sample, and not chosen by the lowest 27% of the sample was taken the key for that items;

ii) the new key was checked for validity by the investigator by means of comparing to the other alternatives, the definition of effectiveness and the real life conditions in Turkiye.

Items 1 and 8 were excluded from the test since there weren't any alternatives found in accordance to the criterion (i), and item 14 was put out of the test since the key suggested by the first criterion wasn't found valid by the investigator, depending on the second criterion.

After this process of adaptation of the test, the statistical values for the data collected before are re-computed and the internal consistency of the adapted form, calculated using Kuder-Richardson formula 20, is found to be .78 in the 11th grade; which is the same as found by Crites for the 11th grade in his research. (Crites, 1978)

The internal consistency of the test for eighth grade was found to be .49, and the test - retest reliability obtained from the scores of 8th-grade students was .67 with  $N=129$ ,  $t=10.15$ ,  $p<.001$ .

The statistical values computed after the adaptation are given in Tables 18,19,20 and 21.

The possible reasons for low internal consistency in the eighth grade are discussed in the **chapter VI** .

Table 18

Statistical Values in the administrations of the test to 11th-grade students (after item adaptations)

---

|   |       |
|---|-------|
| N   | 49    |
| greatest possible score                       | 17    |
| least possible score                          | 0     |
| maximum score                                 | 14    |
| minimum score                                 | 1     |
| range   | 13    |
| mean  | 8.20  |
| mode  | 10.00 |
| median  | 7.50  |
| variance                                      | 13.54 |
| standard deviation                            | 3.68  |
| K-R 20 coefficient<br>of internal consistency | .78   |

---

Table 19

Item-Total Coefficients in the administration of the test to the 11th-grade students (after item adaptations)

| Item No. | Item-Total Correlation Coefficient |
|----------|------------------------------------|
| 1        | Deleted from the test              |
| 2        | .45 ##                             |
| 3        | .66 ##                             |
| 4        | .45 ##                             |
| 5        | .26                                |
| 6        | .25                                |
| 7        | .26                                |
| 8        | Deleted from the test              |
| 9        | .31                                |
| 10       | .61 ##                             |
| 11       | .38 #                              |
| 12       | .67 ##                             |
| 13       | .41 ##                             |
| 14       | Deleted from the test              |
| 15       | .44 ##                             |
| 16       | .41 #                              |
| 17       | .57 ##                             |
| 18       | .48 ##                             |
| 19       | .54 ##                             |
| 20       | .68 ##                             |
| mean     | .46 ##                             |
| median   | .45 ##                             |
| maximum  | .68 ##                             |
| minimum  | .25                                |
| range    | .43                                |

# :  $p < .05$

## :  $p < .01$

Table 20

Statistical Values in the first administration of the test to the 8th-grade students (after item adaptations)

|   | First Adminis.<br>of the test |
|---|-------------------------------|
| N   | 236                           |
| greatest possible score                       | 17                            |
| least possible score                          | 0                             |
| maximum score                                 | 15                            |
| minimum score                                 | 1                             |
| range   | 14                            |
| mean  | 7.51                          |
| mode  | 7.00                          |
| median  | 8.00                          |
| variance                                      | 7.10                          |
| standard deviation                            | 2.66                          |
| K-R 20 coefficient<br>of internal consistency | .49                           |

Table 21

Item-total Coefficients in the administration of the test to the 8th-grade students (after item adaptations) (N=236)

| Item No. | Item-Total Correlation Coefficient |
|----------|------------------------------------|
| 1        | Deleted from the test              |
| 2        | .32                                |
| 3        | .39 #                              |
| 4        | .39 #                              |
| 5        | .36 #                              |
| 6        | .14 *                              |
| 7        | .16 *                              |
| 8        | Deleted from the test              |
| 9        | .11 *                              |
| 10       | .38 #                              |
| 11       | .29                                |
| 12       | .38 #                              |
| 13       | .43 ##                             |
| 14       | Deleted from the test              |
| 15       | .21                                |
| 16       | .37 #                              |
| 17       | .55 ##                             |
| 18       | .36 #                              |
| 19       | .35 #                              |
| 20       | .34 #                              |
| mean     | .33 #                              |
| median   | .36 #                              |
| maximum  | .55 ##                             |
| minimum  | .11 *                              |
| range    | .44                                |

\* : The items with item-total correlations below .20 .

# :  $p < .05$

## :  $p < .01$

### Additional Findings From The Analysis Of The Collected Data

The mean scores of the 8th-grade students on the adapted form ranged between 6.23 and 8.98 among the four schools. Kuder Richardson 20 coefficients were all below .50. The details are given in Table 22.

The statistical values on scores obtained from schools having a counseling office and from those not having are computed and given in Table 23.

When the statistical values obtained from 11th-grade students was compared to that obtained from 8th-grade students in the same school, the following are summerized.

i) the mean of scores of 8th-grade students in Atanur Oguz Lisesi was compared with the mean of scores of 11th-grade students in the same school using t-test, and the difference between the means was found not to be statistically significant ( $t=1.27$ , and  $p < .40$ ).

ii) the variance of scores of the 11th-grade students is higher than that of the 8th-grade students ;

iii) the Kuder-Richardson 20 coefficient of internal consistency was much higher than that computed from the scores of the 8th-grade students of the same school.

In addition, the K-R 20 coefficient obtained from 49 11th-grade students was much higher than that obtained from 236 8th-grade students.

Table 22

Statistical values for each school in the first administration (after item adaptations)

|                                  | First<br>State<br>School | First<br>Private<br>School | Second<br>State<br>School | Second<br>Private<br>School |
|----------------------------------|--------------------------|----------------------------|---------------------------|-----------------------------|
| N                                | 78                       | 55                         | 42                        | 61                          |
| greatest possible score          | 17                       | 17                         | 17                        | 17                          |
| least possible score             | 0                        | 0                          | 0                         | 0                           |
| max. score                       | 15                       | 15                         | 11                        | 14                          |
| min. score                       | 1                        | 4                          | 2                         | 3                           |
| range                            | 14                       | 11                         | 9                         | 11                          |
| mean                             | 6.23                     | 8.98                       | 6.83                      | 8.30                        |
| mode                             | 7                        | 9                          | 7                         | 9                           |
| median                           | 8.00                     | 9.50                       | 6.50                      | 8.50                        |
| variance                         | 5.97                     | 6.24                       | 5.36                      | 5.81                        |
| stdrt. devi.                     | 2.44                     | 2.50                       | 2.32                      | 2.41                        |
| K-R 20<br>coef. of<br>int. cons. | .43                      | .46                        | .33                       | .38                         |



Table 23

Distribution of the statistical values with respect to the existence of guidance counseling office (after item adaptations)

|   | Schools With<br>Couns. Office | Schools Without<br>Couns. Office |
|---|-------------------------------|----------------------------------|
| N   | 116                           | 120                              |
| greatest possible score                                       | 17                            | 17                               |
| least possible score  | 0                             | 0                                |
| maximum score   | 15                            | 15                               |
| minimum score   | 3                             | 1                                |
| range   | 12                            | 14                               |
| mean  | 8.62                          | 6.44                             |
| mode  | 9                             | 7                                |
| median  | 9.00                          | 8.00                             |
| variance  | 6.08                          | 5.79                             |
| standard deviation  | 2.47                          | 2.41                             |
| Kuder-Richardson 20<br>coefficient of internal<br>consistency | .42                           | .39                              |

## CHAPTER VI

### DISCUSSION ON THE RESULTS

Career Maturity Inventory is criticized by various writers and editors. The point that most of them make is that the instrument is not experimented much enough to have an idea on the limits of area where the test is reliably utilizable.. We hope to have contributed to the accumulation of experiences about the instrument and to have gained an instrument utilizable in Turkiye. Here is some discussion on the results of the research.

(The Eighth Mental Measurement Yearbook p.1562 - 1565, Moore, 1976)

#### The Transliterated Equivalence Study

In the transliterated equivalence study, the forms are found to be transliteratedly equivalent. The test meant the same thing to, and interpreted in the same way by the students both in English and in Turkish.

#### The Reliability Study

In the reliability study the Kuder Richardson 20 coefficient computed on 236 8th-grade students was found as .45 which is low. To answer the question if this is because the instrument is not valid in Turkiye or the 8th-grade students haven't developed decision-making strategies, a comparative reliability study is conducted.

### The Comparative Reliability Study

The results of the reliability study have two faces. For the 11th grade, Kuder - Richardson 20 coefficient of internal consistency is found to be 78 , which is equal to that found by Crites in grade 11. On the other hand, in grade eight, the Kuder - Richardson 20 coefficient of internal consistency is found to be .49 which is well below .72 found by Crites for eighth grades.

Crites reports K-R 20 coefficients as .58 for sixth grade and .63 for seventh grade students. He explains these low coefficients as a result of the students not having developed any decision-making strategies yet. We may conclude that in Turkiye, students don't develop such patterns in eighth grade as well.

The results are indicative of the immaturity of the 8th-grade students in Turkiye in terms of career-decision-making skills. They must be aided by school counselors to develop some decision-making strategies. Gilrain (1974) states that some assistance must be provided to students in the seventh grade to help develop their career-decision-making skills. Otherwise, he says, this variable of decision making skills may or may not mature at a later time without assistance.

The reliability study was conducted in four Turkish schools. Two of them were private schools with counseling offices and high SES students. Here the 9th, 10th and 11th grades were at the same building as the 8th-graders.

The other two schools were state schools with low SES students, and without counseling offices. Eighth grade was the highest grade level in the school. This secondary level students were in the same school together with primary school students ("Ilkogretim Okulu" )

When the mean scores obtained in the private schools and in the state schools are compared, it is seen that the means in the private schools were significantly higher than that in state schools (  $t=6.87$   $p < .001$  ) .

On the other hand, in the Atanur Oguz Ozel Deneme Lisesi, which is a private school, the 11th-grade students were administered the same test, and their mean was not significantly different from the mean of the 8th-grade students in the same school (  $t=1.27$  ,  $p < .40$  )

Taking all these data into account, we can draw the following conclusions :

i) The results support the views stated by Flake (1975) and Olsen (1975) on the effectiveness of regular guidance counseling programs cited in the **chapter II : CONCEPTUAL BACKGROUND AND REVIEW OF LITERATURE**. The difference between private and state schools in study seems to be due to the existence or non existence of counseling services. The difference in the means doesn't seem to be connected to the difference in SES, because in a study by Franklin (1975) no effect of SES on career-maturity was found. (see **chapter II : CONCEPTUAL BACKGROUND AND REVIEW OF LITERATURE**.) On the other hand, Turkish students form a population different from that on which Franklin has studied. Therefore it is worthwhile to conduct a research to see the effect of SES on the career maturity of Turkish students.

ii) The students in the private schools are preparing themselves to the next year for the Course and Credit System in which they are expected to choose a course of education which will lead them to a career. In other words, they are in a stage of career-decision-making. The students in the state school didn't know much about the system that will be applied next year, and some of them even do not plan to go to a high school. So practically, they seem to be in different life stages, although they are about the same age.

The 11th-grade students in the comparative reliability study didn't pass through the Course and Credit System and they are preparing themselves for the next year for university entrance. In addition, they receive similar guidance services from the school counselors. Apparently, 11th- and 8th-grade students in the first private school are in very similar life stages although their ages are different.

When we compare the means of students in the 8th-grade grade in private and state schools, we found a significant difference as their life stages are different. The means of 11th- and 8th-grade students are found not to differ significantly as their life stages are similar. These results support Crites' views that career maturity is related to the life stages rather than the age.

iii) Another difference between the state school 8th-grade students and private school 8th-grade students is that the private school students have models about what they will do the future whereas the state schools don't have such models. The effect of such models is also worthwhile to study on.

## CHAPTER VII

## LIMITATIONS OF THE STUDY AND SUGGESTIONS

A necessary research is to find out the grade limits where it is possible to use the instrument reliably and validly among Turkish students. Crites, in his research administered the test to grades six thru 12. In grades six and seven he found insufficient internal consistency whereas in grades eight thru 12 the Kuder - Richardson 20 coefficients of internal consistency were above .70 .

Among Turkish students, the investigator found the opportunity to work only with 8th- and 11th-grade students. The internal consistency of the test in the grade 11 is the same as found by Crites, but in the grade eight is much lower than .70 . Further research is needed to see what the situation is in grades 6, 7, 9, 10 and 12 in Turkiye.

## REFERENCES

- Adams, W.G. (1974). Influence of career education on motivation and aspiration of middle school age educationally disadvantaged youth. Dissertation Abstracts International, 35, 7641A
- Bingham, G.D. (1974). Career attitudes and self-esteem among boys with and without specific learning disabilities. Dissertation Abstracts International, 35, 815A
- Biscoglio, J.J. (1975). The effect of a decision-making program on vocational maturity. Dissertation Abstracts International, 36, 5033A
- Boyd, C. (1975). Vocational maturity and occupational realism among inner-city disadvantaged College Bound high school students. Dissertation Abstracts International, 36, 1298A
- Burson, L.S. (1976). Career maturity : a comparison of affective and cognitive programs with college freshmen women. Dissertation Abstracts International, 37, 1397A



Coogan, J.P. (1975). Work experience career exploration program effect on 14- and 15-year-old disadvantaged New Jersey students as measured by the Career Maturity Inventory. Dissertation Abstracts International, 36, 6638A

Crites, J. O. (1978). Theory & research handbook of CMI. California : McGraw-Hill

Cross, E.G. (1975). The effects of a vocational exploration group program with middle and high school students. Dissertation Abstracts International, 36, 7863A

Devine, H.F. (1975). The effect of a computer based career counseling program on the vocational maturity of community college students. Dissertation Abstracts International, 36, 7865A

Flake, M.H. (1975). The effects of counseling by the same and opposite sex counselors on career maturity of tenth grade students. Dissertation Abstracts International, 36, 5041A

- Franklin, H. (1975). A study of junior high school students in grades seven through nine. Dissertation Abstracts International, 36, 4439A
- Gable, R.K. (1986). Instrument development in the affective domain. Boston : Kluwer - Nijhoff Publishing.
- Gelatt, H. (1962). Decision-making : a conceptual frame of reference for counseling. Journal of Counseling Psychology, 9, 240-245.
- Gilrain, J.B. (1974). A study of the facilitation of seventh grade students' vocational maturity through the integration of vocational development material into existing curricula, utilizing regular teachers and required subjects in lieu of special courses, special programs, and special personnel. Dissertation Abstracts International, 35, 5812A
- Goldfried, M. R. & D'Zurilla T.J. (1960) A behavioral-analytic model for assessing competence. in C.D. Spielberger (Ed.) Current topics in clinical and community psychology (Vol. 1) New York : Academic Press

- Graves, L.J.S. (1975). The effectiveness of a junior high career information system for increasing career knowledge and maturity. Dissertation Abstracts International, 36, 5242A
- Hamby, J.K.J. (1977). An analysis of the effectiveness of a career education cluster curriculum as reflected by student growth in career maturity. Dissertation Abstracts International, 37, 4316A
- Harbaugh, J.F. (1974). A comparison of career maturity attitudes of industrial arts curriculum project students, conventionally-taught industrial arts students and non-industrial arts students. Dissertation Abstracts International, 35, 164A
- Herhenson, D.B., & Roth, R.M. (1966). A decisional process model of vocational development. Journal of Counseling Psychology, 13, 367-370.
- Hilton, T.L. (1962). Career decision-making. Journal of Counseling Psychology, 9, 291-298.

Incesulu, A. (1983). A career decision making program for Lycee Students. Unpublished master's thesis. Bogazici University, Istanbul.

Johnson, D.G. (1974). The effects of a career guidance component of a career education program on some aspects of career maturity of ninth grade students. Dissertation Abstracts International, 35, 5025A

Karayanni, M. (1976). Career maturity of emotionally maladjusted high school students. Dissertation Abstracts International, 37, 6276A

Kerr, S.W. (1974). The effects of career education inservice classes on the career maturity of sixth, seventh and eighth grade students. Dissertation Abstracts International, 35, 960A

Kuzgun, Y. (1991, October). Turkiye'de yuksekogrenimde meslege yönelme. [Vocational direction in higher education in Turkey]. Yuksekköğretimde Mesleki Rehberlik ve Danışma Symposium conducted at the meeting of Bogazici University

- Martenis, F.B. (1976). The career maturity of eleventh and twelve grade adolescents who are under the supervision of the court. Dissertation Abstracts International, 37, 811A
- Miller, E.J.C. (1974). A comparative study of the impact of curriculum interventions on the career development of high school students. Dissertation Abstracts International, 35, 7655A
- Moore, T.L. (1976). Measuring vocational maturity in a college population: a construct validation study of the Career Maturity Inventory Attitude Scale. Dissertation Abstracts International, 37, 7546A
- New, R.H. (1974). Relationship of enrollment and non-enrollment in home economics courses to self-concept, and career maturity of senior highschool students. Dissertation Abstracts International, 35, 7190A
- Olsen, R.E. (1975). The effect of a career decision making skills course of study on junior high school students. Dissertation Abstracts International, 36, 5054A

Palmo, A.J. & Lutz, J.G. (1983). The relationship of performance on the CMI to intelligence with disadvantaged youngsters. Measurement and evaluation in guidance, 16, 139-148

Rathburn, C. (1973). Career maturity inventory - attitude scale: analyses of longitudinal data. Unpublished manuscript

Sawyer, D.E. (1972). Differences in vocational maturity and selected behavioral tendencies between part-time cooperative education participants and non-participants in selected Texas secondary schools. Dissertation Abstracts International, 33, 4147A

Schaie, K.W. (1965). A general model for the study of developmental problems. Psychological Bulletin, 64, 92-107

Schaie, K.W. (1970). A reinterpretation of age related changes in cognitive structure and functioning. In L.R. Goulet, & P.B. Baltes (Eds.), Life-span developmental psychology. New York : Academic Press.

Smith, K.W. (1976). Differences in work attitudes and work values of disadvantaged and non-disadvantaged eleventh grade and twelfth grade disadvantaged and non-disadvantaged work experience students. Dissertation Abstracts International, 37, 5784A

Super D.E., Crites, J.O., Hummel, R.C., Moser, H.P., Overstreet, P.L. & Warnath, C.F. (1957) Vocational development: A framework for research. New York : Teachers College Bureau of Publications.

Sutton, R.A. (1976). Vocational maturity as a predictor of delinquency proneness in male juveniles: a discriminant analysis. Dissertation Abstracts International, 37, 1999A

Tiedeman D. V. (1961). Decision and vocational development : a paradigm and its implications. Personal Guidance Journal, 40, 15-20.

Tinney, G.R.F. (1973). Occupational maturity of educable mentally retarded students. Dissertation Abstracts International, 35, 333A

Tolbert, E.L. (1974). Counseling for career development.  
Boston : Houghton Mifflin Company.

Tyler, L. (1959). Distinctive patterns of likes and dislikes over a twenty-two year period. Journal of Counseling Psychology, 6, 234-237.

Tyler, L. (1961). Research explorations of in the realm of choice. Journal of Counseling Psychology, 8, 195-201.

Whitman, R.L. (1972). The vocational attitude maturity of disadvantaged eighth and twelfth grade students in rural eastern Kentucky. Dissertation Abstracts International, 33, 6812A

Williams, V.H. (1975). A survey of the career maturity of a select group of black high school students. Dissertation Abstracts International, 36, 5066A

Wingett, T.J.H. (1974). Career attitude maturity self concept of eighth grade girls after a career education experience. Dissertation Abstracts International, 35, 4175A



Ziller, R.C. (1957). Vocational choice and utility for risk. Journal of Counseling Psychology, 4, 61-64.

Zytowski, Donald G. (1970). Psychological influences on vocational development. Boston : Houghton Mifflin Company.





APPENDIX A

TURKISH FORM  
OF THE PROBLEM SOLVING SUBTEST  
OF THE CAREER MATURITY INVENTORY  
AND THE  
ANSWER KEY

E Y A P M A L A R I G E R E K İ R ?

YÖNERGE:

Bu formda, her maddede, bir kişinin okulda veya meslek seçiminde karşılaşılabileceği bir sorun ortaya konmuştur. Bu tanımlamayı, her durum için önerilen değişik çözümler izlemektedir. Tanımlamayı okuyun ve o kişi için en iyi olan çözümü seçin. Eğer bir fikriniz yoksa "bilmediğinizi" belirtin.

\*\*\*\*\*  
\* D İ K K A T ! ! ! \*  
\* L Ü T F E N B U K İ T A P Ç I K Ü Z E R İ N D E H İ Ç B İ R Ş E Y \*  
\* İ Ş A R E T L E M E Y İ N İ Z . \*  
\* T Ü M C E V A P L A R I N I Z I C E V A P K A Ğ I D I N A Y A Z I N I Z . \*  
\*  
\*\*\*\*\*

- NE YAPMALARI GEREKİR ? -

1. Hande mühendis olmak istiyor ve bunu yapacak yeteneği var. Fakat notları zayıf olduğu için üniversiteye giremeyeceğini düşünüyor.

Ne yapmalı ?

- a) Daha çok çalışmalı ve daha iyi notlar almalı.
- b) Öğretmeniyle veya rehberleriyle konuşmalı.
- c) Notlarına rağmen girebilmeyi bekleyebilir, çünkü yeteneği var.
- d) Mesleki seçimini değiştirip, üniversite eğitimi gerektirmeyen bir şey seçsin.
- e) Bilmiyorum.

2. Sami'nin babası doktor ve Sami'nin de doktor olmasını istiyor. Fakat Sami meslek olarak işletmeciliği daha ilginç buluyor.

Ne yapmalı ?

- a) Doktor olmalı.
- b) Tıpla işletmeciliği birleştiresin ve hastane yöneticisi olsun.
- c) Babasının fikrini değiştirmeye çalışsın.
- d) Bir arkadaşına ne yapması gerektiğini sorsun.
- e) Bilmiyorum.

3. Salih hayatta başarılı olmayı ve işinden de tatmin duymayı istiyor. Fakat mesleği hakkında karar veremiyor.

Ne yapmalı ?

- a) Rehberleriyle konuşsun.
- b) Değişik meslekleri denesin.
- c) Konu üzerinde hiç düşünmesin.
- d) Önüne birşey çıkıncaya kadar karar vermeyi ertelesin.
- e) Bilmiyorum.

4. Nilgün'ün okuldaki notları iyi ve üniversiteye gitmek istiyor. Fakat burslu bile okusa üniversite için yeterli parası yok.

Ne yapmalı ?

- Evde oturup bir süre annesine yardım etsin.
- Ödünç para alsın.
- Daha az para gerektiren bir üniversiteye gitsin.
- Yarı-zaman (part-time) çalışıp yarı-zaman üniversiteye gitsin.
- Bilmiyorum.

5. Tahsin'in notları orta ve iki sene içinde de mezun olabilir. Fakat okuldan bıkmış ve tam günlük bir işe girmek istiyor.

Ne yapmalı ?

- Askere gitsin.
- Öğrenimine devam etsin.
- Başkalarıyla (okulu bırakanlar, işverenler, vb.) konuşarak ne yapması gerektiğini sorsun.
- Okulu bıraksın, tam gün çalışsın, okula gece gitsin.
- Bilmiyorum.

6. Haluk'un arkadaşları liseden sonra üniversiteye gitmek istiyor. Onun da istediği bu. Fakat o ve kız arkadaşı evlenmek de istiyorlar.

Ne yapmalı ?

- Çekip gitmeli.
- Bu konuyu kız arkadaşıyla konuşmalı.
- Evlenip üniversiteye gitsin.
- Evliliği ertelleyip üniversiteye gitsin.
- Bilmiyorum.

7. Serap her zaman pilot olmayı arzulamıştı. Fakat sağlık muayenesi sonunda gözlerinin uçabilmesi için yeterli olmadığını öğrenmişti.

Ne yapmalı ?

- Rehber danışmanlarına danışsın.
- Havacılıkla ilgili başka bir iş bulsun.
- Görüşünü kuvvetlendirici alıştırılmalar yapsın.
- Geçinceye kadar göz testine girsin.
- Bilmiyorum.

8. Murat avukat olmak istiyor. Fakat rehberlik testleri ona yeterli derecede yetenekli olmadığını gösterdi.

Ne yapmalı ?

- a) Başka bir alana girsin.
- b) Test yanlış olabilir, hukuka girsin.
- c) Avukat olmak için yeteneğini geliştirsin.
- d) Hukukla ilgili daha düşük düzeyde işlere girsin.
- e) Bilmiyorum.

9. Yorgo, ağabeyi gibi hesap uzmanı olmak istiyor. Fakat notları üniversite için yeterli değil.

Ne yapmalı ?

- a) Aynı alanda, muhasebe yardımcılığı veya defter tutmak gibi daha düşük seviyede bir iş için hazırlansın.
- b) Ne yapması gerektiğini ağabeyi ile konuşsun.
- c) Üniversite için ne olursa olsun hazırlanmalı, notları zayıf bile olsa üniversiteye girebilir.
- d) Daha iyi notlar almak için çalışsın.
- e) Bilmiyorum.

10. Ali saat tamiri yapmak istiyor. Fakat gazetede okuduğuna göre, bunun eğitimini veren son okul da kapanmış.

Ne yapmalı ?

- a) Başka meslek seçsin.
- b) Saat tamir etmeyi kendi kendine öğrensin.
- c) Gazetede okuduğunun doğru olmadığını farzetsin.
- d) Kendini nasıl eğitebileceğini bir danışman rehberle sorsun.
- e) Bilmiyorum.

11. Dilek oyuncu olmanın hayallerini kuruyor ve lisede iki oyunda başrol oynamış. Fakat başarılı bir oyuncu olmak için gereken "kendine güvenme" Dilek'te yok.

Ne yapmalı ?

- a) Oyuncululuğu bırakıp başka bir şeyler denesin.
- b) Gerçek bir oyuncu olabileceğine kendini inandırsın.
- c) Kendine niye güveni olmadığını bulmaya çalışsın.
- d) Biraz daha tecrübe kazansın, kendine güveni artacaktır.
- e) Bilmiyorum.

12. Sedef emlakçı olmak istiyor. Fakat ne yapması gerektiğini ve bu işe nasıl girileceğini bilmiyor.

Ne yapmalı ?

- a) Bildiği bir mesleği seçmek üzere kararını değiştirsin.
- b) Önce üniversite diplomasını alsın, sonra komisyoncu olmayı düşünsün.
- c) Bir emlak bürosunda işe girsin ve çalışarak yükselsin.
- d) Bazı emlakçılarla konuşup meslekleri için nasıl bir eğitim gördüklerini öğrensin.
- e) Bilmiyorum.

13. Cüneyt'in birçok hobileri ve ilgileri var. Fakat onları sınırlayıp bir meslek seçimi yapamıyor.

Ne yapmalı ?

- a) Problemini bir danışman rehber ile beraber düşünsün.
- b) Birçok işi deneyip en çok sevdiği birini seçsin.
- c) Herhangi bir mesleği seçsin, seçtiği büyük bir ihtimalle ilgilendiği bir şeye uyacaktır.
- d) Kararını ertelesin. Er ya da geç mesleklerden biri diğerinden ağır basacaktır.
- e) Bilmiyorum.

14. Bahar okul orkestrasıyla birlikte şarkı söylüyor ve ileride profesyonel bir şarkıcı olmak istiyor. Fakat gerçek hayatta başarıp başaramayacağını merak ediyor.

Ne yapmalı ?

- a) Başarılı şarkıcıların fikirlerini alsın.
- b) Daha büyük bir kararlılık gösterebilir, başaracaktır.
- c) Başka bir mesleğe yönelsin, şarkıcılık çok rekabeti gerektiriyor.
- d) Başka bir işe girsin ve bu arada başarılı olup olmayacağını anlayıncaya kadar ikinci bir iş (part time) olarak şarkıcılık yapsın.
- e) Bilmiyorum.

15. İzak, gezici satış elemanı olmak ve çok para kazanmak istiyor. Fakat seyahat etmeyi sevmiyor.

Ne yapmalı ?

- Başka bir meslek seçsin.
- Kendi işini kursun ve seyahat etmesi için başka birisini bulsun.
- Biraz para biriktirinceye kadar, bir müddet seyahat etsin. Belki sonra satış müdürü olabilir.
- Satış işinde, seyahati gerektirmeyen, daha az paralı bir işte, örneğin bir mağazada çalışsın.
- Bilmiyorum.

16. Serpil Üniversiteye gidebilecek ve bir meslekte başarılı olabilecek yetenekte. Fakat liseyi bitirir bitirmez bir işte çalışmak istiyor.

Ne Yapmalı ?

- İşe girmeli ve üniversiteyi boşvermeli.
- İki yıllık bir Meslek Yüksek Okuluna devam edip bitiş saatinden sonra bir işte çalışmalı.
- Yarı-zamanlı (Part-time) bir işe girip kalan zamanda Üniversiteye gitsin.
- Üniversiteye gitmeli, sonradan bundan mutluluk duyacaktır.
- Bilmiyorum.

17. Fulya sınıfın en üstün talebesi. Fakat herhangi bir işe yeterince ilgi duymuyor.

Ne yapmalı ?

- Evde oturup bir süre annesine yardım etsin.
- Birçok işi denemeli, biri onun ilgisini çekecektir.
- Birgün birşeyle ilgileceğini ümit ederek Üniversiteye devam etsin.
- Testler alarak ve bir danışman rehberle konuşarak, ilgilendiği şeyleri açığa çıkartmaya çalışsın.
- Bilmiyorum.



8. Cengiz çok iyi bir öğrenci ve sporcu. Üniversitede mimarlık öğrenimi görmeyi ve futbol oynamayı istiyor. Fakat ona spor bursu veren üniversitede mimarlık bölümü yok.

Ne yapmalı ?

- Mimarlık bölümü ve futbol takımı olan bir üniversitenin akademik bursunu denemeli.
- Ya futboldan ya da mimarlıktan vazgeçmeli.
- Futbol oynasın ve sonra başka bir üniversitede mimarlık eğitimi görsün.
- Her ikisini de unutup bir işe girsin.
- Bilmiyorum.

9. Şebnem'in sanat yeteneği çok ve ressam olmayı düşünüyor. Fakat ressam olarak başarılı oluncaya kadar maddi geçimini bir şekilde sağlaması gerek.

Ne yapmalı ?

- Lisede resim öğretmeni olsun.
- Onu maddi açıdan destekleyecek birisini bulsun.
- Resim yapsın ve kısa sürede satacağını ümit etsin.
- Başka bir işte çalışsın ve boş zamanlarında resim yapsın.
- Bilmiyorum.

10. Mithat, teknik liseyi bitirdikten sonra kendi makina dükkanını açmayı düşünüyor. Fakat ihtiyacı olan araç ve gereci alacak parası yok.

Ne yapmalı ?

- Başka bir mesleğe girsin.
- Araç-gereci almak için kredi alsın.
- Başkası için makinist olarak çalışsın.
- Dükkanını açsın ve istediklerini alabilecek kadar iş yapacağını umut etsin.
- Bilmiyorum.

THE ANSWER KEY OF THE PROBLEM SOLVING SUBTEST

| Item No | Original Form | Adapted Form |
|---------|---------------|--------------|
| 1       | b             | Deleted      |
| 2       | b             | c            |
| 3       | a             | a            |
| 4       | b             | d            |
| 5       | c             | c            |
| 6       | c             | c            |
| 7       | b             | b            |
| 8       | d             | Deleted      |
| 9       | a             | d            |
| 10      | d             | d            |
| 11      | c             | c            |
| 12      | d             | d            |
| 13      | a             | a            |
| 14      | d             | Deleted      |
| 15      | d             | d            |
| 16      | c             | c            |
| 17      | d             | d            |
| 18      | a             | a            |
| 19      | d             | d            |
| 20      | b             | b            |



**APPENDIX B**

**QUESTIONNAIRE  
DISTRIBUTED  
TO THE  
FACULTY  
MEMBERS**



## APPENDIX C

DETAILED DEMOGRAPHIC INFORMATION ABOUT THE SAMPLE USED  
IN THE TRANSLITERAL EQUIVALENCE STUDY

- 42 (50%) female,  
40 (50%) male
  
- 2 ( 4%) were born in 1977  
73 (89%) were born in 1978  
7 ( 7%) were born in 1979
  
- 52 (64%) were born in Istanbul  
2 ( 3%) were born in Izmir  
6 ( 7%) were born in Ankara  
11 (14%) were born in Bursa  
2 ( 2%) were born in Izmit  
2 ( 3%) were born in Samsun  
1 ( 1%) was born in Ordu  
1 ( 1%) was born in Eskisehir  
1 ( 1%) was born in Balikesir  
1 ( 1%) was born in Zonguldak  
1 ( 1%) was born in Malazgirt  
1 ( 1%) was born in Diyarbakir  
1 ( 1%) was born in New York

- All were leaving in high SES parts of the cities that they were leaving in.
  
- 17 (21%) were the only child in the family
  - 56 (68%) had 1 brother/sister
  - 8 (10%) had 2 brothers/sisters
  - 1 (1%) had 3 brothers/sisters
  
- 50 (61%) were the first child in the family
  - 27 (33%) were the second child in the family
  - 4 (5%) were the third child in the family
  - 1 (1%) was the fourth child in the family
  
- 4 (6%) subjects were living together with some relatives in addition to parents and brother/sister
  
- The parents of 60 (74%) subjects were together and the subjects were living with the parents

The parents of 17 (21%) subjects are together but the subjects are living far from the parents (most of them are boarding students)

The parents of 2 (2%) subjects were separated/divorced  
and the subjects were living with the mother

The parents of 1 (1%) subject were separated/divorced  
and the subject was living with the father

The parents of 2 (2%) subjects were separated/divorced  
and the subject was living far from both of the  
parents

- 3 ( 5%) of the students' mothers' age was between 30 & 34
- 26 (32%) of the students' mothers' age was between 35 & 39
- 41 (50%) of the students' mothers' age was between 40 & 44
- 9 (10%) of the students' mothers' age was between 45 & 49
- 2 ( 2%) of the students' mothers' age was between 50 & 54
- 1 ( 1%) of the students' mothers' age was between 55 & 59
  
- 1 ( 1%) of the students' fathers' age was between 30 & 34
- 5 ( 7%) of the students' fathers' age was between 35 & 39
- 33 (40%) of the students' fathers' age was between 40 & 44
- 29 (35%) of the students' fathers' age was between 45 & 49
- 7 ( 9%) of the students' fathers' age was between 50 & 54
- 4 ( 5%) of the students' fathers' age was between 55 & 59
- 3 ( 3%) of the students' fathers' age was 60 and over

- 1 (1%) of the students' mother was graduated from a secondary school

20 (25%) of the students' mothers were graduated from a high school

52 (63%) of the students' mothers were graduated from a university

9 (11%) of the students' mothers had post graduate study

- 1 (1%) of the students' father was graduated from a primary school

8 (10%) of the students' fathers were graduated from a high school

48 (59%) of the students' fathers were graduated from a university

25 (30%) of the students' fathers had post graduate study

- 45 (55%) of the students' mothers were working

37 (45%) of the students' mothers were not working



- 78 (95%) of the students' fathers were working
- 4 ( 5%) of the students' fathers were not working  
(retired)
  
- 38 (46%) of the students' mothers were professional
- 78 (78%) of the students' fathers were professional



## APPENDIX D

DETAILED DEMOGRAPHIC INFORMATION ABOUT THE SAMPLE USED  
IN THE RELIABILITY STUDY

- 106 (45%) female,  
130 (55%) male
  
- 1 ( %) were born in 1976  
17 ( 7%) were born in 1977  
120 (51%) were born in 1978  
92 (39%) were born in 1979  
6 ( 3%) were born in 1980
  
- 179 (76%) were born in Istanbul  
1 ( %) was born in Izmir  
6 ( 3%) were born in Ankara  
11 ( 5%) were born in Bursa  
2 ( 1%) were born in Canakkale  
1 ( %) was born in Konya  
1 ( %) was born in Samsun  
3 ( 1%) were born in Ordu  
2 ( 1%) were born in Edirne  
1 ( %) was born in Nigde  
10 ( 4%) were born in Tokat

1 ( %) was born in Ardahan  
 3 ( 1%) were born in Kars  
 3 ( 1%) were born in Sivas  
 1 ( %) was born in Diyarbakir  
 2 ( %) were born in Erzurum  
 2 ( %) were born in Yozgat  
 1 ( %) was born in Denizli  
 1 ( %) was born in Kastamonu  
 1 ( %) was born in Kayseri  
 1 ( %) was born in Nevsehir  
 1 ( %) was born in Mardin  
 1 ( %) was born in Adapazari  
 1 ( %) was born in Giresun  
 1 ( %) was born in Kirikkale  
 6 ( 3%) were born in Bulgaria  
 1 ( %) was born in Netherland  
 1 ( %) was born in Germany  
 1 ( %) was born in Riad

- 96 (41%) were leaving in high SES parts of the cities  
that they were leaving in.

140 (59%) were leaving in low SES parts of the cities  
that they were leaving in.

- 17 ( 7%) were the only child in the family.
  - 107 (46%) had 1 brother/sister
  - 75 (32%) had 2 brothers/sisters
  - 24 (10%) had 3 brothers/sisters
  - 7 ( 3%) had 4 brother/sister
  - 5 ( 2%) had 5 brothers/sisters
  - 1 ( %) had 11 brothers/sisters
- 
- 93 (39%) were the first child in the family
  - 94 (40%) were the second child in the family
  - 26 (11%) were the third child in the family
  - 12 ( 5%) was the fourth child in the family
  - 6 ( 3%) were the fifth child in the family
  - 5 ( 2%) was the sixth child in the family
- 
- 17 (7%) subjects were living together with some relatives in addition to parents and brother/sister
- 
- The parents of 216 (90%) subjects were together and the subjects were living with the parents
- 
- The parents of 2 (1%) subjects were together but the subjects were living far from the parents

The parents of 5 (2%) subjects were seperated/divorced  
and the subjects were living with the mother

The parents of 4 (2%) subjects were seperated/divorced  
and the subjects were living with the father

The parent of 1 ( %) subject was seperated/divorced  
and the subject was living far from both of the  
parents

The mother of 1 ( %) subject was dead and the subject  
was living with the father

The father of 7 (3%) subjects were dead and the  
subjects were living with the mother

- 4 ( 2%) of the students' mothers' age was between 25 & 29
- 52 (22%) of the students' mothers' age was between 30 & 34
- 84 (36%) of the students' mothers' age was between 35 & 39
- 69 (29%) of the students' mothers' age was between 40 & 44
- 21 ( 9%) of the students' mothers' age was between 45 & 49
- 5 ( 2%) of the students' mothers' age was between 50 & 54
- 1 ( %) of the students' mother was dead

- 11 ( 5%) of the students' fathers' age was between 30 & 34
- 42 (18%) of the students' fathers' age was between 35 & 39
- 88 (37%) of the students' fathers' age was between 40 & 44
- 57 (24%) of the students' fathers' age was between 45 & 49
- 19 ( 8%) of the students' fathers' age was between 50 & 54
- 5 ( 2%) of the students' fathers' age was between 55 & 59
- 7 ( 3%) of the students' fathers' age was 60 and over
- 7 ( 3%) of the students' fathers were dead
  
- 22 ( 9%) of the students' mothers were not literate
- 14 ( 6%) of the students' mothers were literate
- 72 (31%) of the students' mothers were graduated from  
a primary school
- 38 (16%) of the students' mothers were graduated from  
a secondary school
- 62 (26%) of the students' mothers were graduated from  
a high school
- 26 (11%) of the students' mothers were graduated from  
a university
- 2 ( 1%) of the students' mothers had post graduate  
study

- 4 ( 2%) of the students' fathers were not literate
- 12 ( 5%) of the students' fathers were literate
- 77 (33%) of the students' fathers were graduated from  
a primary school
- 28 (12%) of the students' fathers were graduated from  
a secondary school
- 32 (14%) of the students' fathers were graduated from  
a high school
- 69 (29%) of the students' fathers were graduated from  
a university
- 14 ( 5%) of the students' fathers had post graduate  
study
- 53 (22%) of the students' mothers were working
- 183 (78%) of the students' mothers were not working
- 215 (91%) of the students' fathers were working
- 21 ( 9%) of the students' fathers were not working  
(mostly retired)
- 17 ( 7%) of the students' mothers were professional
- 36 (15%) of the students' fathers were professional

## APPENDIX E

DETAILED DEMOGRAPHIC INFORMATION ABOUT THE 11th-GRADE  
STUDENTS PARTICIPATED IN THE COMPARATIVE RELIABILITY  
STUDY

- 34 (69%) female,  
15 (31%) male
- 1 ( 2%) was born in 1972  
4 ( 8%) were born in 1974  
39 (80%) were born in 1975  
5 (10%) were born in 1976
- 39 (80%) were born in Istanbul  
1 ( 2%) were born in Izmir  
3 ( 6%) were born in Ankara  
1 ( 2%) were born in Rize  
1 ( 2%) were born in Merzifon  
1 ( 2%) were born in Adapazari  
1 ( 2%) was born in Kirikkale  
2 ( 4%) was born in Germany
- All were leaving in high SES parts of the cities that  
they were leaving in.



- 11 (22%) were the only child in the family
- 22 (45%) had 1 brother/sister
- 10 (21%) had 2 brothers/sisters
- 2 ( 4%) had 3 brothers/sisters
- 2 ( 4%) had 4 brothers/sisters
- 1 ( 2%) had 5 brothers/sisters
- 1 ( 2%) had 6 brothers/sisters
  
- 28 (57%) were the first child in the family
- 13 (27%) were the second child in the family
- 6 (12%) were the third child in the family
- 1 ( 2%) was the sixth child in the family
- 1 ( 2%) was the seventh child in the family
  
- 4 (10%) subjects were living together with some relatives in addition to parents and brother/sister.
  
- The parents of 42 (86%) subjects were together and the subjects were living with the parents
- The parents of 1 (2%) subject was together but the subject was living far from the parents
- The parents of 2 (4%) subjects were seperated/divorced and the subjects were living with the mother
- The parents of 2 (4%) subject were seperated/divorced and the subject was living with the father

The mother of 1 (2%) subject was dead and the subject was living with the father

The father of 1 (2%) subject was dead and the subject was living with the mother

- 12 (26%) of the students' mothers' age was between 35 & 39
- 22 (43%) of the students' mothers' age was between 40 & 44
- 11 (21%) of the students' mothers' age was between 45 & 49
- 2 (4%) of the students' mothers' age was between 50 & 54
- 2 (4%) of the students' mothers' age was between 55 & 59
- 1 (2%) of the students' mother was dead

- 11 (22%) of the students' fathers' age was between 40 & 44
- 21 (42%) of the students' fathers' age was between 45 & 49
- 9 (18%) of the students' fathers' age was between 50 & 54
- 2 (4%) of the students' fathers' age was between 55 & 59
- 6 (12%) of the students' fathers' age was 60 and over
- 1 (2%) of the students' father was dead

- 1 (2%) of the students' mother was not literate

7 (14%) of the students' mothers were graduated from a primary school

4 (9%) of the students' mothers were graduated from a secondary school

- 26 (53%) of the students' mothers were graduated from a highschool
- 9 (18%) of the students' mothers were graduated from a university
- 2 ( 4%) of the students' mothers had post graduate study
- 6 (12%) of the students' fathers were graduated from a primary school
- 2 ( 4%) of the students' fathers were graduated from a secondary school
- 10 (20%) of the students' fathers were graduated from a highschool
- 27 (56%) of the students' fathers were graduated from a university
- 4 ( 8%) of the students' fathers had post graduate study
- 14 (29%) of the students' mothers were working
- 35 (71%) of the students' mothers were not working
- 43 (88%) of the students' fathers were working
- 6 (12%) of the students' fathers were not working (retired)
- 10 (20%) of the students' mothers were proffecional
- 22 (44%) of the students' fathers were proffecional