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FIELD TESTING THE COLLEGE STUDENT EXPERIENCES QUESTIONNAIRE IN TURKEY

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Abstract

The *College Student Experiences Questionnaire – 4th edition* (CSEQ) was field tested among 769 undergraduate students in Ankara, Turkey. Regarding psychometric properties, estimates of internal consistency and the factor structure of the Environment and Gains factors from the Turkish students approximated those of the U.S. based normative sample (4th edition, 2003). Regarding theory, blocked hierarchical regressions supported the *college impress* theoretical model as the instrument's foundation. Difference tests compared mean scale scores of the Turkish students to the U.S. based doctoral extensive sample reported in the CSEQ norms manual. Salient findings were that the Turkish students reported higher engagement with the library, faculty, campus facilities, and clubs; lower engagement with course learning; and fewer gains in personal development. We concluded that the psychometric properties of the instrument and the theoretical model upon which the instrument is based transferred adequately to this Turkish population of students, allowing further comparisons of the college student experience.

Key Words: CSEQ; college impress model; college student experience; student engagement; gains and estimates.

INTRODUCTION

In the past decade assessing how much students learn or improve in college has gained considerable attention (Cheng, 2001). In the U.S., higher education institutions have developed performance indicator systems to demonstrate their accountability, effectiveness, and efficiency. Frequently adopted indicators include student aptitude scores, GPA's, retention rates, persistence rates, and graduation rates. Although these indicators have

provided information about the effectiveness at the institution level, they remain limited to provide meaningful information on students' intellectual and personal development as the outcomes of their collegiate experience. Consequently, more holistic approaches to monitoring student progress have provided more comprehensive information about the outcomes and benefits of a university education (Michael, Nadson, & Michael, 1983; Upcraft & Schuh, 1996). As globalization continues, interest in cross-cultural comparisons of a variety of phenomena has increased. Additionally, higher education administrators in countries beyond the U.S. have expressed a desire to use psychometrically credible measures for this type of work. Consequently, the purpose of our project was to field test the *College Student Experiences Questionnaire* (CSEQ; Pace & Kuh, 1998) in a sample of students at a large public university in Turkey. We anticipated that our results would (a) provide estimates of the CSEQ's psychometric performance, (b) test the theoretical model underlying the CSEQ, and if the psychometric properties and theory were supported, (c) provide preliminary cross-cultural comparisons. In this introductory section, we briefly review the CSEQ and the theory upon which it is based, describe instances where it has been used in cultural comparisons, and review the current status of higher education in Turkey.

The College Student Experiences Questionnaire

The CSEQ is built on Pace's (1982) *college impress* model. The theory behind this model is that success in college depends both on responsible student behavior and responsible institutions that promote active participation of students through programs and policies (Tam, 2002). Pace claimed that the amount and depth of learning that occurs in college depends heavily upon the extent, scope, and quality of effort or initiative expended by the student in educational process. In other words, the amount of gain from college depends on student effort and involvement in both academic and social activities. Examples of involvement include using the library, interacting with teachers and peers, and participating in extracurricular activities. Pace defined the investment of time and effort in college activities as *quality of effort*. Responsible student behavior, therefore, is characterized by the quality and amount of effort expended by a student to make the most of his/her college experience (Tam). Pace's recognition of reciprocal two-way interaction between student effort and collegiate environment informed the development of the CSEQ (Pace & Kuh, 1998). This comprehensive instrument measures the quality of experience in college with reference to a number of very important dimensions of student involvement that indicate the amount and quality of students' effort.

Since the publication of its second edition, the CSEQ has been completed by about 300,000 students at more than 400 different college and universities in the United States (Gonyea, Kish, Kuh, Muthiah, & Thomas, 2003). In addition to gathering background information about students, the CSEQ is used to estimate students' engagement in learning activities; rate the characteristics of the learning environment; identify progress made toward learning goals, and measure level of satisfaction with the college.

Cross-Cultural and International Comparisons with the CSEQ

Comparative studies using the CSEQ have proven the useful in examining differences between student groups at similar types of institutions. For instance, Whitmire (1999) examined whether African-American and Caucasian students experience the academic library differently. Results revealed that both student groups measured their academic library experiences very similarly, however, African-American students used the library resources more frequently. Subsequently, Whitmire (2003) reported that engagement in writing and leisure reading was a stronger predictor of library than race/ethnicity.

Swigart and Murrell (2001) asserted that students' unique cultural backgrounds provide them with a map of appropriate and inappropriate behaviors that may hinder or facilitate student involvement for certain social activities, therefore, "…when conceptualizing the influence of student involvement on college outcomes, students should not be treated as homogenous" (p. 298). Obviously, using samples of students of diverse backgrounds in a variety of college and university settings is needed to substantiate the degree of validity and reliability of the CSEQ.

To date, little research has been published to evaluate the reliability and validity of the CSEQ in languages other than English, or in other countries. Lin's study (1997) with 631 Taiwanese college students provided evidence that student involvement theory can be applied to college students outside the United States. The data were collected by the five-year CSEQ, which was adapted from the 3rd edition of the CSEQ and Community CSQ.

Results supported the theory that the more effort students devoted to their college experience, the higher the gains they reported. In a recent cross-sectional study, Tam (2004) investigated the influence of university education on students' academic, social, and personal growth in a local university in Hong Kong. The modified and shorter version of the original CSEQ was administered to 998 students in March 2000 and 912 students in April 2002. The comparison of two sets of data indicated an overall improvement in student progress as a function of time. The results also demonstrated that students reported significant growth in the intellectual and personal development dimensions rather than the vocational aspect. Additionally, students' involvement in the university and interaction with the institutional environment were the most important predictors of student outcomes on a range of cognitive and affective attributes. Demographic characteristics contributed less to the prediction of the outcomes of the student's university experience.

As we designed this project, we sought not only to provide an international comparison of students at a Turkish university with American students, but we sought to provide a psychometric evaluation of this widely-used U.S. instrument and a test of the *college impress* model that serves as its theoretical foundation.

Field Testing the CSEQ in Turkey

In recent years, the number of universities, and consequently the number of undergraduate students in Turkey, has dramatically increased. In 2007, there were 1,566,653 undergraduate students in 115 universities (85 state and 30 private) in Turkey *(The Higher Education General Directorate,* n.d.). Higher education institutions in Turkey are under pressure to select the best students and increase student learning productivity. For this reason a need exists for a standardized tool such as CSEQ to provide in-depth descriptions of the processes most likely to result in students gaining the knowledge, values, attitudes, and competencies appropriate to university education. Thus, the purpose of this study was to field test the CSEQ with Turkish undergraduate students attending Middle East Technical University (METU). Initial analyses focused on the psychometric properties of the instrument with this new population of students. Second, the theoretical model underlying the CSEQ was evaluated. Given a demonstrated adequacy of the instrument and theoretical model, cross-national comparisons were planned between the Turkish students and a sample of U.S. based students whose data were recorded in the CSEQ norms manual (Gonyea et al., 2003).

METHOD

Instrument

With permission granted from its authors, the CSEQ was translated from English into Turkish, then back-translated (by someone other than the original translating team) into English. The resulting instrument contained 172 items. Consistent with the English-version CSEQ, 22 of the items gathered demographic information. This included such in-depth information as parents' educational history, financial resources, current grades, and current employment status. The majority (115) of items assessed the students' experiences with the institution in college activities. Grouped into categories (including experiences with libraries, computers/computer sciences, lessons, writing, instructors, the arts, campus facilities, clubs/organizations, personal lives, peer relationships, sciences, talking with others, and topics of conversations), these items were assessed on a four-point scale. Ten items assessed the psychological climate for learning on campus and 25 items asked students to estimate student gains on 25 higher education goals.

As noted in the CSEQ test manual (Gonyea, et al., 2003 [hereafter referenced as "CSEQ norms" with no citation]) the CSEQ has been long recognized a survey instrument with strong psychometric properties. Empirical studies involving the use of factor analysis of subscales and items within the CSEQ have provided dimensions consistent with logical groupings of scales or items within given sections of the measure (Michael, et al., 1983). In addition, data obtained from 127 undergraduates at a major state university demonstrated that the quality of effort scales display modest concurrent validity with the criterion measures regarding self perceptions of grades earned to date and of estimated gains in cognitive attainments (Michael, et al.). Boger (1986) replicated Pace's work involving the quality of effort of college students with a sample from student teachers at Ohio University. The results indicated that the CSEQ has demonstrated test-retest reliability and construct validity when assessing the population of student teachers. The test manual (Gonyea, et al.) provides a comprehensive review of the instrument's reliability, content validity, and construct validity. Additionally, the

test manual provides descriptive statistics and frequencies of responses for individual items, scale, and factor scores. The manual disaggregates these by year in college, age of student, and institutional type (doctoral extensive, doctoral intensive, masters, selective liberal arts, and general liberal arts). Because of METUs institutional characteristics, we used the composite of *all-years-in-college/all-age-groups* in the doctoral extensive category as the basis for comparing our results.

Procedures

Stratified random sampling from the five colleges and 37 departments at METU in Ankara, Turkey, was used to select a representative sample (1,200), out of 12,000 enrolled undergraduate students. The resulting list of student names along with questionnaire packets (including an informed consent form) were sent to each department's administrative office. In the announcement, the purpose of the study and sample selection procedure was explained. Students were asked to contact their departments' secretary to receive the CSEQ. Sixty-four percent of the solicited students completed the questionnaire and returned them to their departments' secretary's office.

Participants

Participants were 769 undergraduate students at METU. Students were asked to identify their age in the same categories as on the CSEQ. The majority were 19 or younger (56%) and 20 to 23 years old (39%). Nearly all of the students (97%) were unmarried. The majority lived with other students (73%) or alone (16%); either in on-campus housing (69%) or within walking (14%) or driving (17%) distance from the university. Students from 34 of METU's academic programs completed the instrument. Each of the academic classifications was well-represented (i.e., 20% freshman, 27% sophomores, 29% juniors, and 23% seniors).

As one of the most highly ranked universities in Turkey, METU attracts many students with different cultural background from different regions of the country (Köse, Balcı, & Engin, 1995). Founded in 1956, the U.S. government and U.S. partner universities supported METU's early development and METU continues to follow Western/American Standards in education (METU, 2009). Instruction at METU is conducted in English and most textbooks are from the U.S.-based publishers. Entrance into this state-sponsored university is dependent upon achieving top scores on a national entrance exam. Thus, while the sample is large, it does not represent the undergraduate experience throughout the country.

RESULTS

Psychometric Properties

Preliminary analyses focused on the psychometric qualities of the CSEQ with the sample of Turkish students.

Internal consistency. Internal consistency estimates (i.e., alpha coefficients) provide an indication of the homogeneity of the specified scale (i.e., the degree to which individual items measure similar characteristics). For well-established scales, estimates above .70 are desirable. Table 5 lists individual alpha coefficients for each of the scale in our sample as well as from the CSEQ norms. We summarize only the highlights in this section of text. For the Quality of Effort Scales, alpha coefficients (reported in Table 5) ranged from .66 (Information in Conversations) to .85 (Computer and IT). This compares to ranges between .74 (Campus Facilities) and .92 (Science and Quantitative Experiences) for the CSEQ normative sample. Of the three Environment Factors, alphas were .45 (Personal Relations), .70 (Practical Factor), and .80 (Scholarly Factor) for the Turkish students. This compares to a range from .70 to .75 for the normative sample. Finally, for the Estimates of Gains factors, alphas for the Turkish students ranged from .75 (General Education) to .81 (Science and Technology). This compares to ranges of .78 (Vocational Preparation) to .87 (Science and Technology) in the norms group. Alphas for the Additional Indices ranged from .74 (Cooperation Among Students) to .86 (Capacity for Life-long Learning) for the Turkish students; no alphas for the normative sample were located in the CSEQ norms.

Factor structure of Environment and Gains scales. In a manner recommended (2001) and modeled (1993) by Byrne, both confirmatory (CFA) and exploratory (EFA) factor analytic techniques were used to explore CSEQ fit and dimensionality. Specifically, CFA procedures were first used to evaluate the fit of the items to the Environment and Gains portions of the CSEQ. *A priori* we hypothesized that (a) responses could be explained by

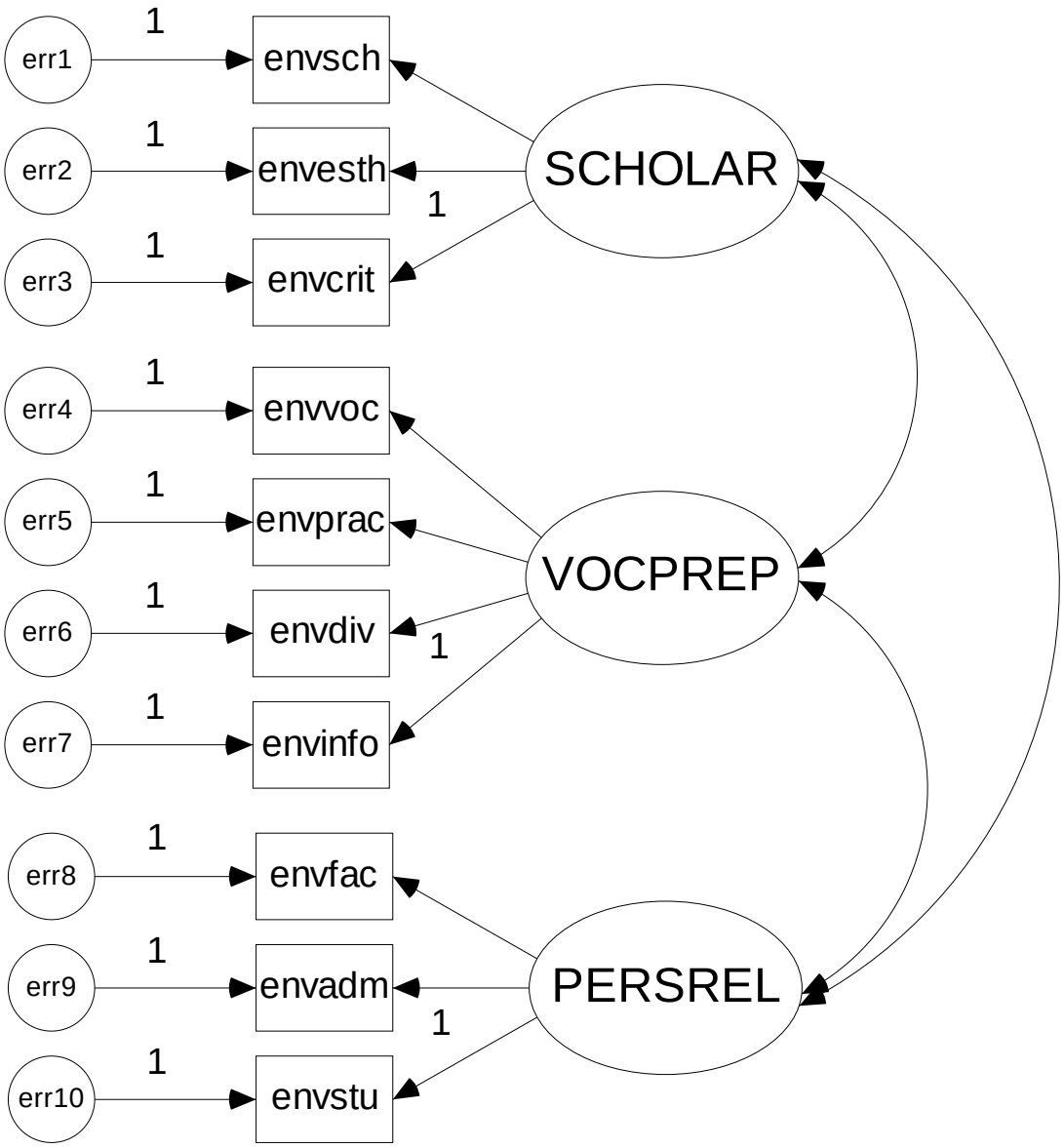
the three-factor (Environment; Figure 1) and five-factor (Gains; Figure 2) scales in the CSEQ norms; (b) each item would have non-zero loadings on the theorized factor and zero loadings on all other factors; (c) the theorized factors would be correlated; and (d) measurement terms would be uncorrelated. We used multiple criteria to evaluate model fit. These included (a) the χ^2 likelihood ratio; (b) the Bentler revised norm fit indices (CFI); (c) the goodness-of-fit index (GFI); and (d) the parsimonious normed comparative fit index (PCFI). For both the CFI and GFI, values of .90 indicates a psychometrically acceptable fit to the data. For the PCFI, acceptable fit is often lower; in fact values in the .50s are not atypical (Byrne). Anticipating model misfit, we used modification indices (MIs; the expected decrease in χ^2 when imposed constraints are relaxed), results from a follow-up EFA, and *a priori* theory determined from the CSEQ norms, in allowing additional covariances. We used the Byrne references in guiding our structural modeling decisions.

Environment factors. CFA fit for the three-factor environment scales was psychometrically acceptable with Model 1 (see Table 1 and Figure 1).

Table 1: Summary confirmatory factor analytic results related to fitting Environment and Gains factor structures

Competing model		χ^2	*df*	Model comparison	$\Delta\chi^2$	Δdf	GFI	CFI	PCFI
Environment (*N* = 758)									
1	Initial	230.76	32	---	---	---	.94	.91	.65
Gains (*N* = 699)									
1	Initial	1384.84	265	---	---	---	.86	.83	.74
2	M2 with correlated error between items 20 and 24 (M.I. 114.33)	1260.60	264	2 vs. 1	124.24	1	.87	.85	.75
3	M3 with correlated error between items 10 and 23 (M.I. 90.43)	1160.40	263	3 vs. 2	100.20	1	.88	.87	.76
4	M4 with correlated error between items 5 and 3 (M.I. 63.42)	1087.90	262	4 vs. 3	72.50	1	.89	.88	.77
5	M5 GNQUANT xload with INTELSK	1062.50	261	5 vs. 4	25.40	1	.89	.88	.77
6	M6 GNGENED xload INTELSK & PERSDEV	992.70	259	6 vs. 5	69.80	2	.90	.89	.716

Note. All $\Delta\chi^2$ values statistically significant at $p < .001$.



CSEQ Environment Factors
Model 1
Model Specification

Figure 1

To follow-up the CFA, the dimensionality of the 10 Environment items was analyzed using maximum likelihood factor analysis. Prior to interpreting the EFA results we screened data by looking at standard indices that indicate the suitability of our dataset for EFA. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy represents the ratio of the squared correlation between variables to the squared partial correlation between variables (Field, 2005). KMO values range between 0 and 1. In general, the higher the value of the KMO, the more suitable it is for EFA. Minimally, a value of .5 is required. Our KMO value was .83. Barlett's test of sphericity tests the null hypothesis that the original correlation matrix is an identity matrix. A statistically significant test indicates that the matrix is not an identity matrix and is suitable for analysis; our Bartlett's $p <$ .001. We performed an additional check of the data by evaluating the determinant of the *R*-matrix.; this value should be greater than .00001. The determinant for our Environment items was .05.

Given these positive indicators of sampling adequacy, we proceeded with the EFA. Similar to the procedures reported in the CSEQ test manual, factors were extracted using principal components factoring with a direct oblimin (oblique) rotation. The scree plot suggested one interpretable solution; however, more consistent with the original solution, there were three eigenvalues greater-than-one (accounting for 61% of the variance). The rotated factor matrix is presented in Table 2. Oblique rotations produce two types of information on factor loadings. The pattern matrix provides the regression coefficients for each variable on each factor; the structure matrix provides the correlation coefficient between each variable and each factors. In our data (for both Environment and Gains items), both matrices were parallel to each other. For efficiency of space, and because we thought it easier to interpret, we present the structure matrix. To interpret the strength of the factor loading, we followed the guidelines presented in Stevens' (1992) table of critical values against which factor loadings can be compared. Given that our sample size is larger than 600, factor loadings greater than .21 can be considered statistically meaningful.

Table 2: Factor Loadings of Environmental Factors (Structure Matrix)

Items		Factors		
		1	2	3
ENVSCH	Emphasizes the development of academic, intellectual and scientific qualities.	†**.69**	.43	.28
ENVESTH	Emphasizes the development of creative and assertive qualities.	†**.77**	.27	.30
ENVCRIT	Emphasizes critical thinking, evaluation and analysis.	†**.82**	.35	.32
ENVDIV	Emphasizes respecting individual differences and the development of this notion.	**.64**	‡.32	.41
ENVINFO	Emphasizes the development of skills related to technology use (using computers or other information technologies).	.46	‡**.48**	.23
ENVVOC	Emphasizes the development of professional competency.	.39	‡**.99**	.29
ENVPRAC	Emphasizes that the lessons are directed towards individual interests and practice.	**.55**	‡.48	.39
ENVSTU	Relationships with other students.	**.14**	.06	#.11
ENVADM	Relationships with administrative stuff or other units.	.31	.21	#**.85**
	Relationships with lectures, instructors. ENVFAC	.42	.30	#**.61**

Note. Items listed are from the backtranslation from Turkish to English. Items in bold indicate the highest loading for the factor rotation with METU data. The following symbols denote the item membership from the CSEQ norms: †Scholarly & Intellectual Emphasis, ‡Vocational & Practical Emphasis, #Quality of Personal Relations.

As is illustrated in the table, factor loadings approximated those of the normative sample. While items tended to cluster according to the a priori structure, an item inquiring about respecting individual differences (ENVDIV) loaded more highly on the SCHOLAR factor than on the VOCPREP factor. In reverse, a VOCPREP item (ENVPRAC; inquiring about lessons directed toward individual interests and practices) loaded more highly on the SCHOLAR factor. We noticed, however, that for this item, factor loadings were strong on both factors. Finally, an item

inquiring about relationships with other students (ENVSTU) loaded highest with the items loading on the SCHOLAR factor. In this case, however, all of its loadings were quite low; the highest was .14.

Gains factors. CFA results for the initial five-factor model fell below psychometrically acceptable levels. Consequently, we used statistical information from the MIs and the EFA (complete EFA findings are listed below) to see if adequate fit might be obtained. Because relaxing constrains will inevitably improve fit, we limited the number and type of additional covariances to balance our competing goals for consistency with *a priori* theory and adequate fit. MIs suggested that allowing correlation between three sets of errors would improve fit. Results from our EFA indicated that allowing individual items to cross-load with multiple factors would improve the fit. As detailed in Table 1, we implemented these changes sequentially, evaluating fit at each step. Our sixth change (M6, illustrated in Figure 2) resulted in a GFI at .90. Acknowledging potentially problematic interpretations of correlated errors and cross-loaded items, we did not pursue additional model fit.

We conducted the EFA of the Gains items using the previously described procedures. With a KMO value of .90, a statistically significant Bartlett's test ($p < .001$), and an *R*-matrix determinant of .00004, our data was deemed suitable for EFA. We requested a five-factor solution using principal components factoring with a direct oblimin (oblique) rotation. The scree plot for the items of the Gains Factors indicated a two-factor solution; however, five components met the eigenvalue-greater-than-one criteria (accounting for 57% of the variance). The structure matrix is presented in Table 3.

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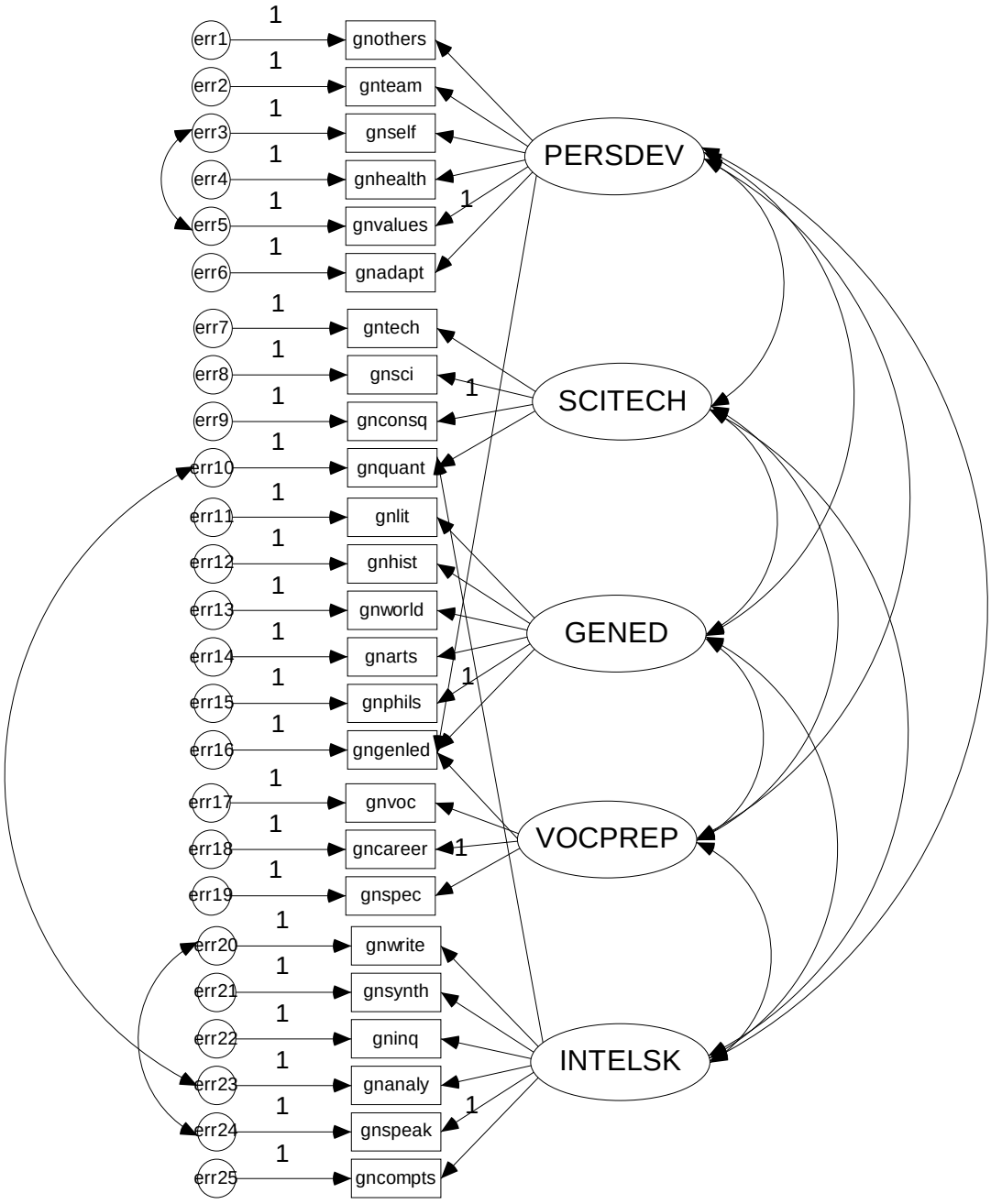

CSEQ Gains Factors
Model 6
Model Specification

Figure 2

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Table 3: Factor Loadings of Gains Factors (Structure Matrix)

		Factors				
Items (from the backtranslation)		1	2	3	4	5
GNVOC	Gaining the knowledge and the skills required in a specific profession (professional preparation)	.21	.05	√**.89**	-.41	-.26
GNSPEC	Gaining the essential knowledge that will form the basis of further education in academic, professional or scientific fields	.21	.09	√**.68**	-.33	-.28
GNGENLED	Getting general and extensive information about different topics	**.38**	#.33	.35	-.31	-.29
GNCAREER	Getting information about your career	.27	.15	√**.68**	-.41	-.29
GNARTS	Enjoying music, art and drama and developing an attitude towards them	.44	#**.50**	.14	-.15	-.24
GNLIT	Developing an interest and familiarity in literature	.31	#**.62**	.10	-.10	-.16
GNHIST	Comprehending the importance of history in understanding the present as well as the past	.22	#**.72**	.04	-.12	-.15
GNWORLD	Gaining information about different territories of the world and their peoples (Asia, Africa, America)	.36	#**.71**	.22	-.18	-.11
GNWRITE	Writing clearly and effectively	*.**50**	.47	.36	-.27	-.26
GNSPEAK	Transmitting the knowledge and ideas effectively while talking with others	***.59**	.43	.33	-.33	-.31
GNCOMPTS	Learning to use the computer and other information technologies	***.46**	-.13	.41	-.42	-.33
GNPHILS	Realizing different philosophies, cultures and life styles	.**54**	#**.54**	.16	-.23	-.21
GNVALUES	Developing your own ethical standards and values	†**.65**	.33	.20	-.31	-.40
GNSELF	Understanding yourself, your interests, talents and personality	†**.72**	.29	.23	-.33	-.40
GNOTHERS	Learning to get along with different people	†**.65**	.24	.19	-.29	-.36
GNTEAM	Developing the skills required to be a member of a group	†**.59**	.29	.33	-.34	-.36
GNHEALTH	Developing the habit of health, living and physical dynamism	†**.44**	.29	.25	-.29	-.29
GNSCI	Understanding the essence of Science and Experimentation	.33	.09	.40	‡**-.66**	-.46
GNTECH	Understanding the innovations in science and technology	.37	.11	.42	‡**-.92**	-.49
GNCONSQ	Realizing the consequences (gains, losses, dangers) of the new applications in science and technology	.38	.26	.40	‡**-.77**	-.49
GNANALY	Learning to think analytically and logically	.43	.21	.35	-.49	*-**.77**

GNQUANT	Analyzing numerical problems (understanding probabilities, ratios….)	.29	.03	.29	-.50	‡-**.69**
GNSYNTH	Synthesizing ideas by seeing the relationships and similarities	.58	.41	.35	-.44	*-**.68**
GNINQ	Learning on your own, being able to pursue ideas, finding the information needed	.54	.28	.32	-.38	*-**.60**
GNADAPT	Learning to adapt to change (new technologies, various works, new personal situations, etc.)	†**.62**	.29	.32	-.47	-.51

Note. Items listed are from the backtranslation from Turkish to English. Items in bold indicate the highest loading for the factor rotation with METU data. The following symbols denote the item membership from the CSEQ norms: †Personal Development, ‡Science & Technology, #General Education, √Vocational Preparation, *Intellectual Skills.

The results for the Turkish students roughly approximated those reported in the test manual. Specifically, items for the factors PERSDEV and VOCPREP all loaded on single scales. However, half the items for the INTELSK factor loaded on its own scale; the remaining half loaded with the PERSDEV items. Three of the items for the SCITECH scale loaded on its own scale, its fourth item (GNQUANT; analyzing numerical problems) loaded with the INTELSK scale. Finally, one GENED item (GNGENLED; getting information about your career) had moderate loadings (.31 to .38) across four scales; loading highest with the SCITECH and INTELSK items.

Evaluation of the College Impress Theoretical Model

The CSEQ norms manual provides evidence supporting the college impress theoretical model through a series of blocked hierarchical regressions. With few exceptions, we replicated these analyses with the Turkish sample. Specifically, for each of the five gains factors, we entered the following blocks into the model: (a) student background variables, (b) environmental ratings, and (c) quality of effort scales and activities. We departed from the procedures outlined in the CSEQ norms manual in two ways. First, their second block of variables included institutional characteristics. Because our sample was from one university there was no variability in institutions characteristics, so we excluded it this block. Second, the variable READTEXT in the third regression (gains in general education) was not available in our dataset; consequently, this variable was not included in the block of variables assessing quality of effort in the Gains in General Education analysis.

Our results (see Table 4) were remarkably similar to those reported in the CSEQ norms. In our analyses, each block of variables continued to predict a significant proportion of variance. Final proportions of variance accounted for (i.e., R^2) ranged from .31 to .41 in our Turkish sample; this compares to a range of .32 to .45 in the CSEQ norms manual.

Table 4: Blocked Hierarchical Regression of Gains Factors for Turkish and CSEQ Normative Samples

		Turkish Sample				CSEQ Norms[c]		
Factor/Blocks	Independent Variables	*R*	R^2	$R^2\Delta$	*p*	*R*	R^2	$R^2\Delta$
Gains in Personal Development								
Student background	Age, grades, residency, sex, class, transfer status	.31	.09	.09	.000	.16	.03	.03
Institutional characteristic[a]	Carnegie classification, selectivity					.16	.03	.00
Environment	ENVPRAC, ENVSTU, OPINSCOR, ENVINFO, ENVESTH	.44	.20	.10	.000	.49	.24	.21
Quality of Effort	QECONINF, QEFACIL, QEPERS, QECOURSE	.56	.31	.12	.000	.60	.36	.13
Gains in Science & Technology								
Student background	Age, grades, residency, sex, class, transfer status	.22	.05	.05	.000	.18	.03	.03
Institutional characteristic[a]	Carnegie classification, selectivity					.21	.04	.01
Environment	ENVCRIT, ENVINFO, ENVPRAC	.39	.15	.11	.000	.36	.13	.09
Quality of Effort	QESCI, QECONTPS	.61	.38	.22	.000	.67	.45	.32
Gains in General Education								
Student background	Age, grades, residency, sex, class, transfer status	.25	.06	.06	.000	.14	.02	.02
Institutional characteristic[a]	Carnegie classification, selectivity					.22	.05	.03
Environment	ENVESTH, ENDIV, ENVFAC, OPINSCOR	.37	.13	.07	.000	.46	.21	.16
Quality of Effort	QECONTPS, QEAMT, QELIB, READTEXT[b], QECONINF, QESCI, QESTACQ	.57	.33	.19	.000	.65	.42	.21
Gains in Vocational Preparation								
Student background	Age, grades, residency, sex, class, transfer status	.39	.15	.15	.000	.24	.06	.06
Institutional characteristic[a]	Carnegie classification, selectivity					.25	.06	.00
Environment	ENVPRAC, OPINSCOR, ENVVOC, ENVFAC, ENVCRIT	.58	.33	.18	.000	.51	.26	.20
Quality of Effort	QECOURSE, QESCI, QECONINF	.63	.39	.06	.000	.57	.32	.07
Gains in Intellectual Skills								
Student background	Age, grades, residency, sex, class, transfer status	.30	.09	.09	.000	.20	.04	.04
Institutional characteristic[a]	Carnegie classification, selectivity					.23	.05	.01
Environment	ENVINFO, ENVCRIT, OPINSCOR, ENVFAC, ENVPRAC	.53	.28	.19	.000	.52	.27	.22
Quality of Effort	QECOURSE, QECONINF, QEWRITE, QECOMPUT	.64	.41	.13	.000	.64	.42	.15

Note. [a]Given that only one institution was assessed in the Turkish sample, there was no block of Institutional Characteristics. [b]This variable was not identified in the Turkish administration.[c]The values in the CSEQ norms column were obtained from the test manual (Gonyea et al., 2003) and reprinted with permission from the authors.

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Comparison of Turkish Students with CSEQ Norms

Twenty-six one-sample *t* tests evaluated whether the mean scale score for the Turkish sample was significantly different from the mean score of the doctoral extensive sample in the CSEQ norms. Because of the large sample sizes, we were not surprised when 23 of the 26 comparisons were less than .001. To guide meaningful interpretation of results, we reported the 95% confidence interval of the mean difference scores and the *d* statistic as a measure of effect. Absolute values of .2, .5, and .8 are interpreted as small, medium, and large. Results are presented in Table 5. Items denoted with † have moderate differences between samples; items denoted with ‡ have large differences.

Unlike the CSEQ norms, we reported the means, standard deviations, and results of the one-sample *t* tests in terms of the relative scale score rather than the raw scores. We do this for two reasons. First, knowing the value of the scaled score (ranging from 1 to 4 for the Quality of Effort and Estimated Gains scales and from 1 to 7 for the University Environment scales) assists in interpretability. Second, two items (one item from the QE Library Experiences scale and one item from the Clubs and Organizations scale) were inadvertently left off of the instrument. By dividing the CSEQ norms means and standard deviations by their respective number of items (and doing the same for the METU CSEQ administration) we were able to compare the relative scale score.

Table 5: Results of One-sample t tests comparing METU and CSEQ Normative Samples

	Turkish sample			CSEQ Norms[a]			One-sample *t* test Results						
											95% CI of the Difference		
Scale or Factor	α	*M*	*SD*	α	*M*	*SD*	*t*	*df*	*p*	Mean Diff	Lower	Upper	*d*
Quality of Effort Scales (4 = Very often, 1 = Never)													
Library Experiences*	.71	2.98	.52	.80	2.09	.58	47.05	767	.000	.89	.84	.92	1.53‡
Computer and IT	.85	2.62	.61	.78	2.60	.58	.80	765	.430	.02	-.03	.06	.03
Course Learning	.81	2.47	.51	.83	2.93	.51	-25.10	764	.000	-.46	-.50	-.43	-.91‡
Writing Experiences	.73	2.74	.53	.78	2.57	.60	8.89	763	.000	.17	.13	.21	.28
Experiences with Faculty	.78	3.19	.58	.88	2.09	.60	52.53	764	.000	1.20	1.05	1.14	1.89‡
Art, Music, Theater	.84	2.76	.59	.86	2.20	.75	25.99	767	.000	.56	.52	.60	.74†
Campus Facilities	.69	2.87	.59	.74	2.24	.58	30.00	761	.000	.64	.60	.68	1.10‡
Clubs and Organizations*	.83	3.31	.73	.83	1.88	.81	54.02	763	.000	1.43	1.37	1.48	1.76‡
Personal Experiences	.71	2.68	.54	.84	2.50	.64	9.18	765	.000	.18	.14	.22	.28
Student Acquaintances	.68	2.88	.53	.91	2.72	.69	8.37	766	.000	.16	.12	.20	.23
Science and Quantitative Experiences	.81	2.91	.56	.92	2.29	.80	30.43	760	.000	.62	.58	.66	.77†
Topics of Conversation	.72	2.41	.50	.87	2.51	.60	-5.45	763	.000	-.10	-.14	-.06	-.17
Information in Conversations	.66	2.58	.41	.86	2.59	.62	-1.00	763	.319	-.01	-.04	-.01	-.02
Environmental Factors (7 = strong emphasis, 1 = weak emphasis)													
Scholarly	.80	4.88	1.31	.75	5.33	1.04	-9.41	765	.000	-.45	-.54	-.35	-.43
Personal Relations	.45	4.35	1.14	.70	5.11	1.15	-13.74	766	.000	-.57	-.65	-.49	-.49†
Practical Factor	.70	4.76	1.11	.75	4.92	1.13	-8.75	765	.000	-.35	-.43	-.27	-.31
Estimates of Gains Factors													

Personal Development	.77	2.06	.63	.83	3.52	.77	-63.23	756	.000	-1.46	-1.50	-1.41	-1.89‡
Science and Technology	.81	2.37	.74	.87	2.47	.84	-3.84	755	.000	-.10	-.16	-.05	-.12
General Education	.75	2.62	.64	.81	2.45	.68	7.17	758	.000	.17	.12	.21	.25
Vocational Preparation	.78	2.34	.74	.78	2.79	.73	-16.70	757	.000	-.45	-.50	-.39	-.61†
Intellectual Skills	.78	2.16	.57	.81	2.53	.53	-17.64	756	.000	-.37	-.41	-.32	-.69†
Additional Indices													
Capacity for Life-long Learning	.86	2.13	.53		.34	.55	-40.34	756	.000	-.78	-.81	-.74	-1.41‡
Cooperation Among Students	.74	2.53	.51		2.73	.56	-10.96	766	.000	-.20	-.24	-.17	-.36
Experiences with Diversity*	.65	2.67	.46		2.69	.61	-1.24	756	.216	-.02	-.05	.01	-.03
Student-Faculty Interaction Good Practices	.80	3.26	.52		2.02	.56	66.47	767	.000	1.24	1.20	1.27	2.21‡
Active Learning	.82	1.42	.35		2.50	.45	-84.02	756	.000	-1.08	-1.10	-1.05	-2.39‡

Note. *Indicates that the scale used at METU had one item less than the CSEQ. †denotes a moderate level of difference; ‡ a large difference. [a]The values in the CSEQ norms column were obtained from the test manual (Gonyea et al., 2003) and reprinted with permission from the authors. No values were available for the Additional Indices.

DISCUSSION

Field testing the CSEQ in Turkey provided strong support for the instrument's psychometric properties and the college impress theoretical model. Additionally, cross-cultural comparative data provided information about similarities and differences between Turkish and American students. Given the translation/back translation procedure as well as the difference in nationality and culture, the stability of the instrument and the theory is impressive. In many cases the alpha coefficients met (and some exceeded) those of the normative sample and the factor structure of the Environment and Gains factors from the Turkish students approximated those reported in the test manual. Moreover, the strength of proportion of variance in student gains (predicted by student background variables, perceptions of the university environment, and quality of effort) was strong. One explanation is that the participants were from a highly ranked large urban university whose educational standards are similar to those in American universities and the medium of instruction is English. Similarly, in this Turkish sample where individualistic and collectivist values coexist, the lifestyle and values of METU

students appears to be more close to individualism, and thus, to the Western cultures (Karakitapoğlu-Aygün & İmamoğlu, 2002) where the CSEQ was developed. Consequently, the psychometric similarities might not be replicated with student samples from universities in different regions of Turkey where have educational standards and practices may be less Western in orientation.

Among the Quality of Effort scales, students in the Turkish sample reported higher levels (effect sizes were large) of engagement and involvement in with the library, faculty, campus facilities, and clubs and organizations. They reported lower levels of engagement in course learning. The higher engagement of students with campus facilities, clubs and organizations could be explained by the nation wide university entrance exam and facilities at METU. A competitive nation wide university exam held in Turkey requires intensive, long term preparation and usually does not leave room for high school students to participate in leisure activities. We could speculate that students who pass the entrance exam and become a student at METU, a university with its modern campus equipped with fitness facilities, cultural activities, and student clubs that provide plenty of opportunities for students, may have higher levels of in involvement with campus facilities and activities.

In terms of Gains Estimates, the Turkish students reported significantly lower gains in personal development. This finding is in an expected direction because the Turkish education system puts more emphasis on intellectual development rather than holistic student development. Regarding the objectives of Turkish primary and secondary education, Öner (1994) noted that school learning and achievement are two major objectives of formal learning in Turkey. Personal and social development of students are not emphasized and are expected to develop naturally when the academic achievement is attained. In a similar vein, Demir and Aydın (1997) stated that no matter how strongly the aim of whole student development is promoted through laws and regulations, the Turkish higher education system continues to emphasize intellectual development over and above other developmental domains.

Finally, among the Additional Indices, the sample of Turkish students had lower scores in active learning and in developing a capacity for life-long learning; higher scores were evidenced in student-faculty interactions. The finding regarding student engagement, active learning, and life-long learning may result from the dominant paradigm of the Turkish educational system which focuses on what students know rather than how they use that knowledge. This encourages the use of deductive approaches such as lecturing and recitation in autocratic classrooms. Faculty provide little opportunity, if any, for developing essential participatory skills, such as problem-solving, critical and creative thinking, and cooperation (Önür & Engin, 1996). Another contributing factor might be specific to METU. English is the language of instruction at METU. As the findings of a previous study has indicated (Gizir, 1998) METU students seem to experience difficulties in learning and actively participating to class due to the English-language medium.

LIMITATIONS

A primary limitation of this field test was that the test was conducted at METU, an English-medium university that was founded and organized around American educational practices. There is always a tradeoff between internal and external validity. In this case, we believe that our narrow and selective sampling strategy provided some statistical leverage (e.g., increased homogeneity within the sample) to provide strong support for the instrument and the theoretical model. Because of such strong research evidence, researchers are now better positioned to sample and test the instrument and its theoretical model in a sample that is more representative of higher education in the country at large.

While the psychometric properties seemed reasonable, future researchers may consider two research strategies. If cross-cultural comparison is the research goal, CSEQ researchers may re-examine, amend, and re-test the Gains items where factor loadings contradicted the *a priori* structure. This line of research, however, assumes that the dimensionality of Gains is stable across cultures. Alternatively, if the goal is to use the CSEQ to better understand the college experience of Turkish students and researchers are confident that the Turkish translation is adequate, researchers may investigate an alternative factor structure.

To conclude, findings of this study provide valuable information about college experiences of Turkish students compared with norms developed in a Western country.

REFERENCES

Boger, P. (1986). An evaluation of the quality of effort of student teachers. *Dissertation Abstracts International*, 46, 2665. Byrne, B. M. (2001). *Structural equation modeling with AMOS: Basic concepts, applications, and programming*. Mahweh, NJ: Lawrence Erlbaum.

Byrne, B. M. (1993). The Maslach Burnout Inventory: Testing for factorial validity and invariance across elementary, intermediate, and secondary teachers. *Journal of Occupational and Organizational Psychology, 66*, 197-212.

Cheng, D. X. (2001). Assessing student collegiate experience: Where so we begin? *Assessment and Evaluation in Higher Education, 26*, 525-538. doi:10.1080/02602930120093869

Demir, A. & Aydın, G. (1997). Student counseling in Turkish universities. *International Journal for the Advancement of Counselling, 18,* 287-301.

Gizir, C. A. (1998). *A study on the problems of the Middle East Technical University senior students.* Unpublished master's thesis, Middle East Technical University, Ankara, Turkey.

Gonyea, R. M., Kish, K. S., Kuh, G. D., Muthiah, R. N., & Thomas, A. D. (2003). *College Student Experiences Questionnaire, Norms for the Fourth Edition*. Bloomington, IN: Indiana University Center for Postsecondary Research, Policy, & Planning.

Karakitapoğlu, Z. & İmamoğlu, E. O. (2002). Value domains of Turkish adults and university students. *Journal of Social Psychology*, *142*, 333-353.

Köse, R. M., Balcı, A., & Engin, C. (1995, September). *Who is METU student?* Paper presented at Second Educational Sciences Conference, Ankara, Turkey.

Lin, M. (1997). Taiwanese college students' quality of effort and their self-reported educational attainment. Abstract retrieved June29, 2005, from http://proquest.umi.com/pqdweb?did=732668131&sid=2&Fmt=2&clientId=37478&RQT=309&VName=PQD

Middle East Technical University.(2009). *Middle East Technical University General Catolog 2009-2011.* Ankara, Turkey: METU Printing Studio.

Michael, J. J., Nadson, J. S., & Michael, W. B. (1983). Student background and quality of effort correlates of reported grades, opinions about college, and perceptions of magnitudes of cognitive and affective attainment by students in a public comprehensive university. *Educational and Psychological Measurement, 43*, 495-507. doi: 10.1177/001316448304300218

Öner, N. (1994). A guidance and counseling model for Turkey. *Proceedings of the Symposium on Guidance and Career Counseling at University Level*, 37-50. Istanbul: Bogazici University Press.
Önür, A., & Engin, C. (1996). *Is civic education in Turkish schools conducive to education for democracy?* Paper presented at the First Balkan Civitas Conference, Primorsko, Bulgaria.

Pace, C. R. (1982). *Measuring outcomes of college: Fifty years of findings and recommendations for the future.* San Francisco: Jossey-Bass.

Pace, C. R., & Kuh, G. D. (1998). *College Student Experiences Questionanire* (4th ed). Bloomington, IN: Indiana University Center for Postsecondary Research & Planning.

Stevens, J. P. (1992). *Applied multivariate statistics for the social sciences* (2nd ed.). Hillsdale, NJ: Earlbaum.
Swigart T. E., & Murrell, P. H. (2001). Factors influencing estimates of gains made among African-American and Caucasian community college students. *Community College Journal of Research and Practice, 25*, 297-312. Retrieved from http://search.ebscohost.com

Tam, M. (2002). University impact on student growth: A quality measure? *Journal of Higher Education Policy and Management*, *24*(82), 211-218. doi: 10.1080/1360080022000013527

Tam, M. (2004). Using students' self-reported gains as a measure of value-added. *Quality in Higher Education, 10*(3), 253-260. doi: 10.1080/1353832042000299531

The Higher Education General Directorate. (n.d.). Üniversiteler [Universities]. Retrieved October 28, 2009, from http://www.meb.gov.tr/universiteler.htm

Upcraft, M. L., & Schuh, J. H. (1996). *Assessment in student affairs.* San Francisco: Jossey-Bass.

Whitmire, E. (1999). Racial differences in the academic library experiences of undergraduates. *The Journal of Academic Librarianship, 25*(1), 33-37. Retrieved from http://search.ebscohost.com

Whitmire, E. (2003). Cultural diversity and undergraduate academic library use. *The Journal of Academic Librarianship, 29*(3), 148-161. Retrieved from http://search.ebscohost.com