

# QUESTIONNAIRE OF EDUCATIONAL AND LEARNING CAPITAL (QELC): TURKISH LANGUAGE VALIDITY AND FACTOR STRUCTURE

MARILENA Z. LEANA-TAŞÇILAR

*Istanbul University, Gifted Teacher Training Program, mleana@istanbul.edu.tr*

## Abstract

Person-environment interactions are the main focus in Actiotope Model of Giftedness. This is a very new approach for Turkey, which generally uses old versions of intelligence test for identification. In Actiotope Model of Giftedness instead of cognitive identification the focus is on the resources (educational and learning capital) that provide the excellence. The *Questionnaire of Educational and Learning Capital* (QELC) developed based on this model. The aim of this study is to present the Turkish validity study of the questionnaire and to provide a new tool that has satisfactory psychometric properties. Six language experts made the translation and back translation from German to Turkish and vice versa. After that, three German and Turkish language specialists asked to rate the translation validity. The results indicated that the Turkish scale closely approximated with the original. In the next step, 39 bilingual German Language Teacher Candidates (10 male, 29 female; 17 born in Turkey and 22 in Germany; mean age=24.90 years,  $SD=3.73$ ) selected as working group for the language equivalency. First the QELC German version and 3 weeks later the QELC Turkish version were applied to this group respectively. Paired samples t-test results showed that no significant differences were between the responses to German and Turkish versions except on items 7, 9, 16, 23 and 48. The results of the Pearson product-moment correlation coefficient analysis which was obtained to define item-total and item-remainder found statistically positive correlations between all items. Confirmatory Factor Analysis showed that the factor structure of the Turkish version is the same with the German version.

Key Words: Giftedness – actiotope – QELC – Turkish Language Validity.

Giftedness is still very complex conception. One powerful method for understanding, identifying and examining giftedness is through theory-based models. New models of giftedness tend to be more complex and multidimensional than earlier ones (Sternberg & Davidson, 2005; Shavinina, 2009). Recently, Davidson (2009) examined contemporary

models of giftedness and highlighted that they are domain-specific (the three stratum theory, the theory of multiple intelligences and the triarchic theory of successful intelligence). Unlike person-centered models of giftedness, the Actiotope Model of Giftedness focuses on the actions, interactions and reactions within person and environment (Ziegler, 2005).

The Actiotope Model of Giftedness lies on the systemic approach and the goal of it is to identify the *learning path* for an individual that leads to excellence. The opportunities that the environment provides and the actions that are produced by the person are important resources to achieve the excellence (Phillipson, Stoeger & Ziegler, 2013). Ziegler and Baker (2013) classified these exogenous and endogenous resources as *educational* and *learning capitals*. As Ziegler and Baker (2013) proposed each of the capitals have five forms that will be described in the next section.

### **Educational and Learning Capitals**

All of the exogenous resources that involved for the excellence and can be produced and used by society as well as by the individual referred as educational capital (Ziegler and Baker, 2013). "*Economic educational capital* is every kind of wealth, possession, money or valuables that can be invested in the initiation and maintenance of educational and learning processes" (p. 27). As a developing country, the budget for education is very important issue for Turkey. According to statistics of Turkish Ministry of Education, the last three years the biggest portion of the budget allocated for the education. This amount is increasing year by year. For instance the amount for 2011 was 34 billions TL (MEB, 2013), for 2012 was 39 billions TL (Ekonomi, 2013) and the 2013 was 68 billions TL (Ekonomi, 2013), almost two times more than the last year. In addition the amount that dedicated for the abroad study opportunities are increasing too. Çelen, Çelik and Seferoğlu (2011) mentioned that as a result of the increasing economic educational capital in Turkey, students get higher achievements in last years PISA results.

"*Cultural educational capital* includes value system, thinking patterns, models and the like, which can facilitate — or hinder — the attainment of learning and educational goals" (Ziegler & Baker, 2013, p. 27). The

famous Turkish expression that parents used to say to the teacher of their children "Eti senin, kemiği benim" (Be as rough as you want with him/her. /Don't spare the rod!) show us the importance of education in Turkish culture. On the other hand, we can see the negative effects of culture in some regions of Turkey about the education of girls. In 2005, a private enterprise begun a campaign to support the education of girls named "Baba beni okula gönder. / (Father send me to the school.) (Doğan Holding, 2013). They provided special scholarships, built dormitories for girls, and contributed to the construction of new school buildings. According the statistics of General Directorate of the Woman Status (KSGM, 2013) and Turkish Statistical Institute (TUIK, 2013) before of such campaigns the enrollment rate of girls to the school was 75.6 percent; recent statistics showed that the enrollment rate in 2013 is 98.5 percent.

"*Social educational capital* includes all persons and social institutions that can directly or indirectly contribute to the success of learning and educational processes" (Ziegler & Baker, 2013, p. 28). Mentors, psychological counselors and social organizations can be some examples for the social support for a better education and excellence achievement. Newly established social organizations by families have a big influence in the development of the gifted education in Turkey. They inform other families about the importance of special education for gifted students and they are working on the legal rights of their children (TUYCEV, 2013). Another example for the social educational capital is the University for Children, which established in Istanbul University in 2010 to provide mentors and summer schools for the gifted students in different scientific areas according to the interests of the students (Çocuk Üniversitesi, 2013)

"*Infrastructural educational capital* relates to materially implemented possibilities



for actions that permit learning and education to take place” (Ziegler & Baker, 2013, p. 28). This form of educational capital includes entities such as schools, libraries, computers and learning software, educational toys, and so on. Environmental factors, such as these, have long been associated with learning. For example in the school library is very important to provide books for gifted students from different areas of interest. It is also crucial to have Internet access in the classroom to find easily the information that is needed. For example, in their overview on the learning of gifted students, Stoeger and Sontag (2012) point out the pivotal influence of environmental factors on learning, such as the nature of the home environment while children are completing homework assignments. Access to a quiet, functionally equipped place of work seems to be a necessary condition for high quality learning.

“Didactic educational capital means the assembled expertise involved in the design and improvement of educational and learning processes” (Ziegler & Baker, 2013, p. 29). Over the past century, school curricula have dramatically improved. We can observe constant efforts to enhance didactic capital. This is especially true for the effective integration of ICT (information and communication tools) in learning that has formed the basis of many projects worldwide. For example, one of the most significant educational investments of Turkey in recent times has been the “Movement of Enhancing Opportunities and Improving Technology”, known as FATİH Project (MEB, 2013).

Besides of the exogenous educational capitals there are also the forms of endogenous learning capitals, which are rely on the individual. The first form of learning capital that Ziegler and Baker (2013, p. 29) proposed, is the *organismic learning capital*, by definition “it consists of the physiological and constitutional resources of a person”. Being

healthy and the general physical conditions of the students affect the learning quality. We can think a student who has to work the all night and have to participate the classes during daytime. We all can imagine how difficult it could be for the tired student to attend sincerely the lectures. In addition some researches suggested that higher grades were associated with vigorous physical activity (Coe, Pivarnik, Womack, Reeves & Malina, 2006). In addition Tomporowski, Davis, Miller & Naglieri (2008) reviewed that physical exercise is a method for enhancing children’s mental functioning.

Another learning capital form is the *actional learning capital* that means the action repertoire of a person — the totality of actions they are capable of performing” (Ziegler & Baker, 2013, p. 30). Not all the actions are motor movements. According to Ziegler (2005), this explicitly includes also cognitive activities of the individual. For example for being a good problem solver someone needs to have the appropriate planning actions. Otherwise he/she can achieve the goal just by chance or in a bigger amount of time. It is important that the actions are not static so they can be improved. For instance with a planning training program we can increase the planning actions of a person (Leana, 2009).

“*Telic learning capital* comprises the totality of a person’s anticipated goal states that offer possibilities for satisfying their needs” (Ziegler & Baker, 2013, p. 30). Needs are important motivational tools for setting a life direction and also are controlling the goal settlement. For instance if someone wants to be a well-known academician have to achieve some goals. First of all must learn about scientific methods, and then how to use the statistics and then how to write in academic language and so on. None of the goals separately will be enough for achievement, but all of them together.

“*Episodic learning capital* concerns the



simultaneous goal-and situation-relevant action patterns that are accessible to a person" (Ziegler & Baker, 2013, p. 31). It is a combination of accessible action patterns of individual and the learning context that will be used to achieve the goal. As Stoeger, (2013) mentioned questionnaires (about test anxiety or believes) and structured interviews are appropriate tools to assess the episodic learning capital.

"Attentional learning capital denotes the quantitative and qualitative attentional resources that a person can apply to learning" (Ziegler & Baker, 2013, p. 31). Attention is one of the most important components of learning, it means being aware and have an awakened mind, ready to learn. We can see the negative effects of lack of attention with children who have learning disabilities.

### Aim of the Study

The aim of this study is to determine the Turkish validation and factor analysis of the *Questionnaire of Educational and Learning Capital* (QELC). The original form of the questionnaire was developed by Vladut, Vialle, and Ziegler (2015), based on the Actio-tope Model of Giftedness. The *Questionnaire of Educational and Learning Capital* was administrated in a lot of studies in very different cultures (Vladut, Liu, Leana-Tascilar, Vialle & Ziegler, 2013). To adapt the QELC is important to examine Turkish students approaches about the capitals and to compare with the other countries. The *Questionnaire of Educational and Learning Capital* (QELC) consists of ten scales, each addressing one of the forms of capital described. The intended target audience for the questionnaire is secondary school students. In the following, we report the Turkish language validation study of the instrument.

### Method

The study used a general scanning method. A quantitative method was conducted in this study. Data was collected through the scale adapted into Turkish.

### Working Group

The working group was determined through purposive sampling, which is a useful option when the desired population for the study is rare or very difficult to locate and recruit. 9 language experts helped with the translation and back translation of the questionnaire. To investigate the language equivalency of the Turkish version of the questionnaire, first the German form and 3 weeks later, the Turkish form was administered to 39 bilingual German Language Teacher Candidates (10 male, 29 female; 17 born in Turkey and 22 in Germany; mean age=24.90 years,  $SD=3.73$ )

### Materials and Procedure

The original QELC form developed by Vladut, Vialle and Ziegler was accessed as a word document. The necessary permissions for adaptation of questionnaire were received via e-mail from Albert Ziegler. 3 German language specialists translated the QELC items from German to Turkish independently. Then, these three different Turkish forms compared by the researcher and combined in a one form. After the Turkish form was completed, 3 specialists translated all Turkish items back to original language (German). In the next step, 3 German and Turkish language specialists asked to rate the translation validity. The ratings of each item made by language specialists have changed between 8.67 and 10.00 (mean=9.79,  $SD=.25$ ). At the last step, to investigate the language equivalency of the Turkish version of questionnaire, first the German form and 3 weeks later the Turkish form were administered.

All participants worked on the same materials, which consisted of two components. In the first component, they were requested to provide some personal data such as gender, age and achieved level of education. In the second component, they received the *Questionnaire of Educational and Learning Capital* (QELC; Vladut, Vialle, & Ziegler, 2015) German and after three weeks the Turkish version.

**QELC.** The QELC consists of ten subscales. Each subscale measures one of the ten forms of capital with five items: Economic educational capital (sample item: "My family has enough money for my education."), cultural educational capital (sample item: "I know many people for whom learning is very important."), social educational capital (sample item: "I always know where can I find the support for studying/hw."), infrastructural educational capital (sample item: "I have very good conditions for learning in school."), didactic educational capital (sample item: "I use suggestions and tips on how I learn best."), organismic learning capital (sample item: "My body health is good enough for studying my lessons."), actional learning capital (sample item: "I know so many learning strategies."), telic learning capital (sample item: "Always I know what is my next learning goal."), episodic learning capital (sample item: "I know how I learn best through my experiences."), and attentional learning capital (sample item: "I can completely concentrate for my school learning.").

All items on the QELC were presented along a 6-point Likert-type scale, ranging from 1 (I disagree completely) to 6 (I agree completely). The range of scores was from 5 to 30, in which higher scores reflect higher levels of the capital dimension. The analyses were made using IBM SPSS Statistics 20 and Mplus 6.11 programs.

## Results

### *Translation and Language Validity*

Three of language specialists rated the German-English translation for each item. The ratings of each item made by language specialists have changed between 8.67 and 10.00 (mean=9.79, SD=.25) (Table 1.)

**Table 1. Adaptation Degree of Each Item**

Item No	x	ss	Item No	x	ss
1	10.00	0.00	26	10.00	0.00
2	9.67	0.57	27	10.00	0.00
3	9.33	1.15	28	10.00	0.00
4	10.00	0.00	29	10.00	0.00
5	9.67	0.57	30	8.67	1.15
6	9.33	1.15	31	10.00	0.00
7	9.33	1.15	32	10.00	0.00
8	10.00	0.00	33	10.00	0.00
9	10.00	0.00	34	10.00	0.00
10	9.00	1.73	35	10.00	0.00
11	10.00	0.00	36	10.00	0.00
12	10.00	0.00	37	10.00	0.00
13	10.00	0.00	38	10.00	0.00
14	10.00	0.00	39	9.67	0.57
15	10.00	0.00	40	8.67	1.15
16	10.00	0.00	41	10.00	0.00
17	10.00	0.00	42	10.00	0.00
18	10.00	0.00	43	9.67	0.57
19	9.67	0.57	44	9.67	0.57
20	9.00	1.73	45	9.67	0.57
21	10.00	0.00	46	10.00	0.00
22	9.33	1.15	47	10.00	0.00
23	10.00	0.00	48	10.00	0.00
24	10.00	0.00	49	9.67	0.57
25	9.00	1.73	50	10.00	0.00



The paired samples t-test and Pearson product-moment correlation coefficient analysis can be found in Table 2. According to the results of paired samples t-test, which was acquired, to define language equivalency of questionnaire items, no significant differences could be found between the responses to German and Turkish versions except on items 7, 9, 16, 23 and 48. The results of the Pearson product-moment correlation coefficient analysis which was obtained to define item-total and item-reminder found statistically positive correlations of all items.

Confirmatory Factor Analysis

According to Ziegler and Baker’s (2013) theory, a two-factor CFA model specified that the capitals loaded onto two latent variables: the Educational Capital and the Learning Capital. The CFA model indicated that the economic educational capital (EC1), the cultural educational capital (EC2), the social

educational capital (EC3), the infrastructural educational capital (EC4) and the didactic educational capital (EC5) loaded onto Educational Capital, and that the organismic learning capital (LC1), the actional learning capital (LC2), the telic learning capital (LC3), the episodic learning capital (LC4) and the attentional learning capital (LC5) loaded onto the Learning Capital.

The latent factors of Educational and Learning Capital were permitted to be correlated. According to the same assumptions, the economic educational capital (EC1) was permitted to be correlated with the economic educational capital (EC1) was permitted to be correlated with cultural (EC2), social (EC3), infrastructural (EC4), and didactic educational capital (EC5), respectively, while organismic learning capital (LC1) was permitted to be correlated with actional (LC2), telic (LC3), episodic (LC4), and attentional learning capital (LC5). Thus, marker indicators were economic educational capital (EC1)

Table 2. T- test and Pearson Correlation Results of QELC Items for Language Validity

		M	SD	t	p	r			M	SD	t	p	r
Item 1	Ger1	3.56	1.67	.00	-	.75***	Item 26	Ger26	3.87	1.36	-1.76	-	.69***
	Tur1	3.56	1.60					Tur26	4.15	1.14			
Item 2	Ger2	4.21	1.40	-.52	-	.58***	Item 27	Ger27	4.64	1.01	1.04	-	.66***
	Tur2	4.31	1.28					Tur27	4.51	0.79			
Item 3	Ger3	4.08	1.37	-.70	-	.76***	Item 28	Ger28	4.77	1.09	1.86	-	.83***
	Tur3	4.18	1.30					Tur28	4.59	0.99			
Item 4	Ger4	4.62	1.07	1.16	-	.59***	Item 29	Ger29	4.85	0.90	1.56	-	.64***
	Tur4	4.44	1.10					Tur29	4.67	0.77			
Item 5	Ger5	4.46	1.10	.46	-	.47**	Item 30	Ger30	4.69	1.13	1.86	-	.85***
	Tur5	4.38	0.91					Tur30	4.51	1.10			
Item 6	Ger6	4.62	1.23	-.61	-	.60***	Item 31	Ger31	4.05	1.65	-1.18	-	.68***
	Tur6	4.72	1.12					Tur31	4.28	1.36			
Item 7	Ger7	4.87	0.89	2.32	*	.59***	Item 32	Ger32	4.49	1.43	-.16	-	.75***
	Tur7	4.59	0.79					Tur32	4.51	1.41			
Item 8	Ger8	4.49	1.25	1.54	-	.76***	Item 33	Ger33	3.67	1.44	-.98	-	.70***
	Tur8	4.28	1.17					Tur33	3.85	1.53			

**Table 2. T- test and Pearson Correlation Results of QELC Items for Language Validity (continued)**

		M	SD	t	p	r			M	SD	t	p	r
Item 9	Ger9	4.82	0.97	2.16	*	.76***	Item 34	Ger34	3.97	1.29	-1.72	-	.72***
	Tur9	4.59	0.97					Tur34	4.26	1.43			
Item 10	Ger10	4.41	1.21	1.43	-	.71***	Item 35	Ger35	3.77	1.48	-.78	-	.74***
	Tur10	4.21	1.15					Tur35	3.9	1.43			
Item 11	Ger11	4.67	1.24	-1.54	-	.75***	Item 36	Ger36	3.69	1.52	-1.57	-	.58***
	Tur11	4.87	1.13					Tur36	4.03	1.39			
Item 12	Ger12	4.9	1.02	.57	-	.84***	Item 37	Ger37	4.44	1.27	.65	-	.81***
	Tur12	4.85	1.01					Tur37	4.36	1.14			
Item 13	Ger13	4.44	1.14	-.21	-	.76***	Item 38	Ger38	4.15	1.35	1.86	-	.76***
	Tur13	4.46	1.00					Tur38	3.87	1.40			
Item 14	Ger14	4.51	1.02	-.19	-	.64***	Item 39	Ger39	4.51	1.07	.81	-	.71***
	Tur14	4.54	0.97					Tur39	4.41	1.02			
Item 15	Ger15	3.85	1.35	-.37	-	.51**	Item 40	Ger40	4.1	1.14	-1.39	-	.60***
	Tur15	3.92	1.24					Tur40	4.33	1.20			
Item 16	Ger16	3.77	1.53	-2.18	*	.55***	Item 41	Ger41	4.36	1.37	.13	-	.60***
	Tur16	4.26	1.41					Tur41	4.33	1.33			
Item 17	Ger17	4.56	1.10	.44	-	.76***	Item 42	Ger42	4.64	1.16	-.55	-	.69***
	Tur17	4.51	1.00					Tur42	4.72	1.05			
Item 18	Ger18	4.56	0.97	1.15	-	.71***	Item 43	Ger43	4.21	1.17	-1.16	-	.50**
	Tur18	4.44	0.85					Tur43	4.41	1.04			
Item 19	Ger19	4.67	1.01	1.23	-	.69***	Item 44	Ger44	4.15	1.29	-2.01	-	.64***
	Tur19	4.51	0.97					Tur44	4.49	1.14			
Item 20	Ger20	4.18	1.12	-.68	-	.64***	Item 45	Ger45	4.26	1.16	-.48	-	.59***
	Tur20	4.28	1.10					Tur45	4.33	1.06			
Item 21	Ger21	4.54	1.37	-.96	-	.80***	Item 46	Ger46	3.62	1.50	-2.11	-	.73***
	Tur21	4.67	1.31					Tur46	3.97	1.44			
Item 22	Ger22	4.41	1.31	-2.08	-	.71***	Item 47	Ger47	4.56	0.79	.00	-	.46**
	Tur22	4.72	1.03					Tur47	4.56	0.91			
Item 23	Ger23	3.72	1.30	-4.17	***	.67***	Item 48	Ger48	4.46	1.05	-2.23	*	.66***
	Tur23	4.36	0.99					Tur48	4.77	1.06			
Item 24	Ger24	4.38	1.12	-.85	-	.78***	Item 49	Ger49	4.72	1.10	.00	-	.48**
	Tur24	4.49	1.19					Tur49	4.72	0.89			
Item 25	Ger25	4.59	1.02	-.94	-	.77***	Item 50	Ger50	3.54	1.35	-1.48	-	.48**
	Tur25	4.69	1.00					Tur50	3.85	1.18			

\*p&lt;.05, \*\*p&lt;.01, \*\*\*p&lt;.001



for Educational Capital, and organismic learning capital (LC1) for Learning Capital. The model was over-identified with 26 *df*. The complete specification of the two-factor CFA model for the original German version is presented in Figure 1. Figure 2 displays the complete specification of the two-factor CFA model for the Turkish version.

In the Turkish version of the questionnaire the goodness of the model fit was assessed using exactly the same indicators as for the original German version. These were, comparative fit index (CFI), the Tucker-Lewis index (TLI), the root mean square error of approximation (RMSEA) and its 90% confidence interval (90 % CI), and the standardized root mean square residual (SRMR). For the definition of an acceptable model fit, suggestions from Brown (2006) were considered: CFI ( $\geq 0.95$ ), TLI ( $\geq 0.95$ ), RMSEA ( $\leq 0.06$ , 90 % CI  $\leq 0.06$ ), and SRMR ( $\leq 0.08$ ). The fit indices for the German version suggested that the two-factor CFA model fit the data generally well,  $\chi^2(26) = 248.16$ ,  $p = 0.00$ , CFI = 0.95, TLI = 0.91, RMSEA = 0.13 (90 % CI = 0.12 - 0.15), SRMR = 0.03. The fit indices for the Turkish version was  $\chi^2(34) = 73.76$ ,  $p = 0.00$ , CFI = 0.88, TLI = 0.84, RMSEA = 0.17 (90 % CI = 0.12 - 0.23), SRMR = 0.08.

Factor loading estimates showed that nearly all indicators were strongly related to their supposed latent factors (range of  $R^2$ s = 0.20 - 0.80 for German version and range of  $R^2$ s = 0.43 - 0.96 for Turkish one). Only economic educational capital (EC1) was a low indicator ( $\leq 0.55$ ) for German version. In the Turkish version economic educational capital (EC1) ( $\leq 0.43$ ) and also cultural educational capital (EC2) ( $\leq 0.50$ ) had low indicators. From the two-factor CFA solution, a strong relationship between the dimensions of Educational and Learning Capital is shown (0.94 for the German version and 0.89 for the Turkish version) (Vladut et al., 2015). This is in accordance with theoretical assumptions of the model.

## Conclusion

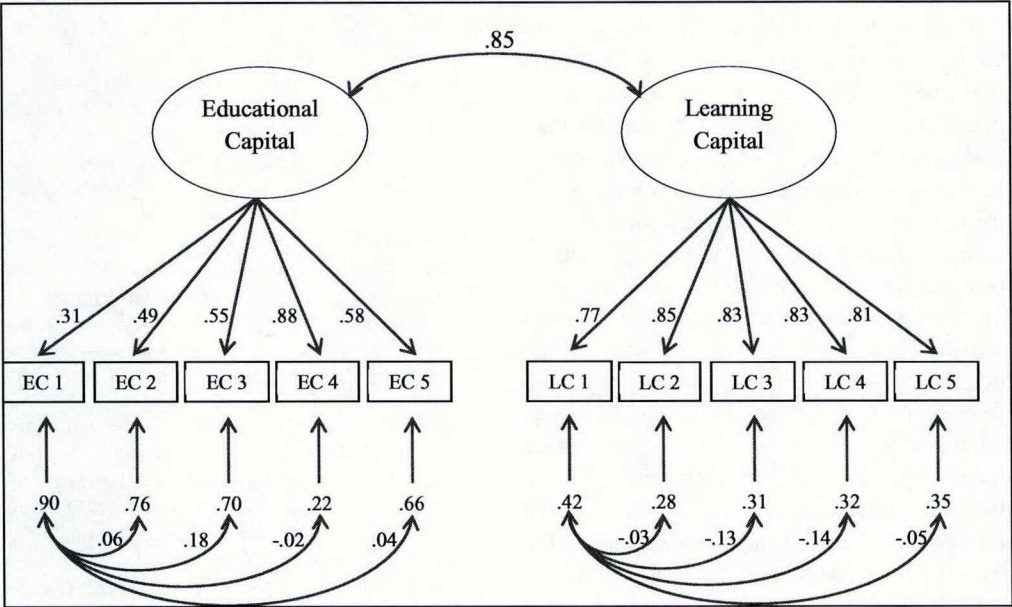
The Actiotope Model of Giftedness is one of the contemporary models based on the systemic approach (Ziegler, Vialle & Wimmer, 2013). Unlike the other models it is action oriented, individualistic, holistic and count the individual - environment interactions (Ziegler & Philipson, 2012). Instead of the identification with classical cognitive methods (IQ tests) choose to analyze the learning path that learning and excellence will occur. The focus of the model is on the actiotopes, which are influenced by the exogenous and endogenous resources named educational and learning capital (Ziegler & Baker, 2013). Based on the Actiotope Model of Giftedness, Vladut et al., (2015) developed an economical quantitative measuring instrument that would allow large-scale surveys with students. The resulting instrument, the QELC, comprises only 50 questions and was designed as a cross-culturally applicable questionnaire.

The identification of gifted children in Turkey is based on the old versions of IQ tests (Davaslıgil, 2004). The absence of new point of views and tools that combines person-environment interactions is crucial issue for the identification of the learning path that feeds excellence. That was the motivation of the researcher to make the Turkish language validation study of QELC. Although the recent study represents only the language validation of the questionnaire next step will be the application of QELC to average and gifted students in secondary and primary schools.

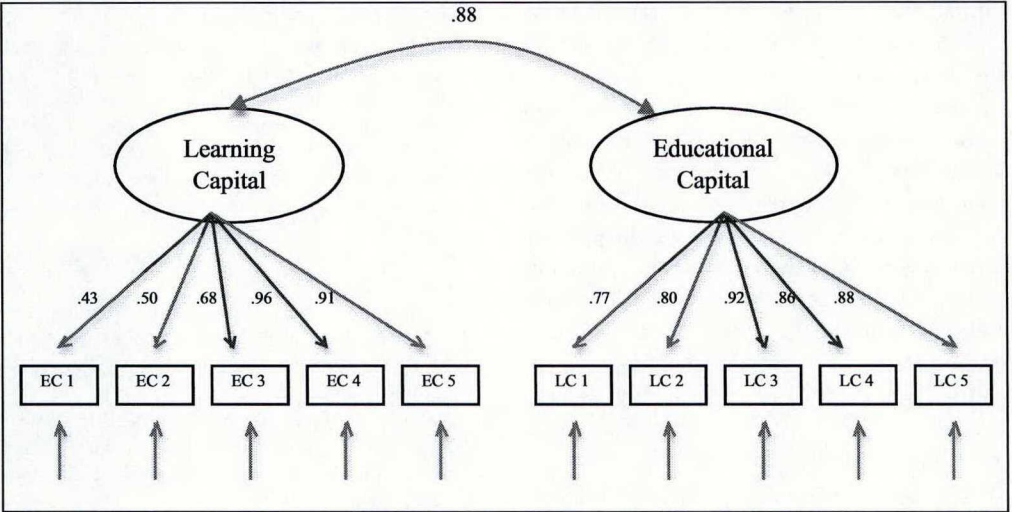
We reported on a language validation study of the QELC. The language validation comprised three steps. First 9 language experts made the translation and back translation of the questionnaire. Secondly a bilingual group administered first the German and 3 weeks latter the Turkish version of the questionnaire, the paired samples t-test and Pearson product-moment correlation coefficient analysis were reported. Thirdly, we conducted a confirmatory factor analysis looking for evidence



**Figure 1: Completely Standardized Parameter Estimates from the Two-factor CFA Model of Educational and Learning Capital for German Version**



**Figure 2: Completely Standardized Parameter Estimates from the Two-factor CFA Model of Educational and Learning Capital for Turkish Version**



of the postulated two-factor structure of the questionnaire and checked if it is the same with the original German version.

The adaptation degrees for the translated items were higher enough to administer the questionnaire to the bilingual group. According to the results of paired samples t-test, which was acquired, to define language equivalency of questionnaire items, no significant differences could be found between the responses to German and Turkish versions except on items 7, 9, 16, 23 and 48. The results of the Pearson product-moment correlation coefficient analysis which was obtained to define item-total and item-remainder found statistically positive correlations of all items.

Based on prior theoretical assumptions we specified a two-factor CFA model in which the five forms of educational capital loaded onto one latent variable and in which the five forms of learning capital loaded onto the other latent variable. The fit indices indicated that the two-factor CFA model fitted the data generally well. The CFA model worked the same in Turkish version with the two factors (educational and learning capital) with same capitals that load onto the latent variables.

The results of our language validation study can be summarized as follows. The adaptation degree was high enough for each item. The paired samples t test (except 5 items) and Pearson product-moment correlation coefficient results indicated that the two forms are equal. The confirmatory factor analysis furnished evidence of the construct validity of the Turkish version of QELC. Finally, we suggest the reliability and validity studies of Turkish version of QELC with a wider sample to be done in further researches.

### Acknowledgments

The author wishes to thank all participating students for their help. Special thanks are due to all language specialists and Dr. Esra İşmen-Gazioğlu, and Dr. Albert Ziegler.

### References

- Brown, T. A. (2006). *Confirmatory factor analysis for applied research*. New York: Guilford Press.
- Çelen, F.K., Çelik, A., Seferoğlu, S.S. (2011). Türk eğitim sistemi ve PISA sonuçları. [Turkish education system and PISA results]. *Akademik Bilişim*, 2, 4.
- Çocuk Üniversitesi (2013). [http://cocukuniversitesi.is-tanbul.edu.tr/\[02.11.2013\]](http://cocukuniversitesi.is-tanbul.edu.tr/[02.11.2013])
- Coe, D.P., Pivarnik, J.M., Womack, C.J., Reeves, M.J. and Malina, R.M. (2006). Effect of physical education and activity levels on academic achievement in children. *Medicine & Science in Sports & Exercise*. doi: 10.1249/01.mss.0000227537.13175.1b
- Davaslıgil, U. (2004). Üstün olma niteliği kazanma [To qualified as gifted]. In R. Şirin, A. Kulaksızoğlu and A.E. Bilgili (eds.), *Üstün yetenekli çocuklar seçilmiş makaleler Kitabı* (283-289) İstanbul: Çocuk Vakfı Yayınları.
- Davidson, J. E. (2009). Contemporary models of giftedness. In L. Shavinina (ed.), *International handbook of giftedness* (81-99). Amsterdam: Springer.
- Doğan Holding (2005). [http://www.doganholding.com.tr/kurumsal-sosyal-sorumluk/baba-beni-okula-gonder.aspx\[02.11.2013\]](http://www.doganholding.com.tr/kurumsal-sosyal-sorumluk/baba-beni-okula-gonder.aspx[02.11.2013])
- Ekonomi (2013). [http://ekonomi.milliyet.com.tr/aslan-payi-maliye-bakanliginin/ekonomi/ekonomidetay/\[02.11.2013\]](http://ekonomi.milliyet.com.tr/aslan-payi-maliye-bakanliginin/ekonomi/ekonomidetay/[02.11.2013])
- Ekonomi (2013). [http://ekonomi.haberturk.com/para-haber/796901-2013-egitim-butcesi-ne-kadardir/\[02.11.2013\]](http://ekonomi.haberturk.com/para-haber/796901-2013-egitim-butcesi-ne-kadardir/[02.11.2013])
- KSGM (2013). [http://www.kadininstatusu.gov.tr/tr/\[02.11.2013\]](http://www.kadininstatusu.gov.tr/tr/[02.11.2013])
- Leana, M.Z. (2009). Üstün ve normal öğrencilerin yönetici işlevlerinin ve çalışma belleklerinin değerlendirilmesi ve ihtiyaçlarına yönelik eğitim programının uygulanması. [Assessment of executive functions and working memories of gifted and average students and the development of planning abilities program]. İstanbul: İstanbul University, Unpublished Doctoral Thesis.
- MEB (2013). [http://www.meb.gov.tr/haberler/haberayrinti.asp?ID=8271/\[02.11.2013\]](http://www.meb.gov.tr/haberler/haberayrinti.asp?ID=8271/[02.11.2013])
- MEB (2013). Eğitimde FATİH projesi, <http://fatihprojesi.meb.gov.tr>, 16.07.2013. [Turkish Ministry of Education. (2013). The FATİH project in education, <http://fatihprojesi.meb.gov.tr/> 16.07.2013]
- Phillipson, S. N., Stoeger, H., & Ziegler, A. (Eds.) (2013). *Development of excellence in East - Asia: Explorations in the Actiotope model of giftedness*. London: Routledge.
- Shavinina, L. (Ed.) (2009). *International handbook on giftedness*. New York: Springer.



- Sternberg, R., & Davidson, J. (Eds.) (2005). *Conceptions of giftedness*. Cambridge: Cambridge University Press.
- Stoeger, H. (2013). Support-oriented identification of gifted students in East Asia according to the actiotope model of giftedness. In S. N. Phillipson, H. Stoeger, & A. Ziegler (Eds.), *Exceptionality in East-Asia: explorations in the Actiotope model of giftedness* (pp. 1-17). London: Routledge.
- Stoeger, H., & Sontag, C. (2012). How gifted students learn: A literature review. In A. Ziegler, C. Fischer, H. Stoeger, & M. Reutlinger (Eds.), *Gifted Education as a lifelong challenge. Essays in honour of Franz J. Mönks* (pp. 315-336). Muenster, Germany: LIT.
- Tomporowski, P.D., Davis, C.L., Patricia, H.M. & Naglieri, J.A. (2008). Exercise and children's intelligence, cognition and academic achievement. *Educational Psychology Review*, 20.
- TUIK (2013). [http://tuikapp.tuik.gov.tr/adnksdagitapp/adnks.zul?kod=2/\[02.11.2013\]](http://tuikapp.tuik.gov.tr/adnksdagitapp/adnks.zul?kod=2/[02.11.2013])
- TUYCEV (2013). [http://www.tuycev.org/\[04.11.2013\]](http://www.tuycev.org/[04.11.2013])
- Vladut, A., Liu, Q., Leana-Tascilar, M.Z., Vialle, W. & Ziegler, A. (2013). A cross-cultural validation study of the questionnaire of educational and learning capital (QELC) in China, Germany and Turkey. *Psychological Assessment and Model Testing* 55 (4), 462-478.
- Vladut, A., Vialle, W. & Ziegler, A. (2015). Learning resources within the Actiotope: A validation study of the QELC (Questionnaire of Educational and Learning Capital). *Psychological Assessment and Assessment Modeling*, 57 (1), 40-56.
- Ziegler, A. (2005). The actiotope model of giftedness. In R. Sternberg & J. Davidson (Eds.), *Conceptions of giftedness* (pp. 411-434). Cambridge: Cambridge University Press.
- Ziegler, A., & Baker, J. (2013). Talent development as adaptation: The role of educational and learning capital. In S. N. Phillipson, H. Stoeger, & A. Ziegler (Eds.), *Exceptionality in East Asia: Explorations in the Actiotope model of giftedness* (pp. 18-39). London: Routledge.
- Ziegler, A., & Phillipson, S.N. (2012). Towards a systemic theory of gifted education. *High Ability Studies*, 23:1, 3-30, doi: 10.1080/13598139.21012.679085
- Ziegler, A., Vialle, W., & Wimmer, B. (2013). The Actiotope model of giftedness: A short introduction to some central theoretical assumptions. In S. N. Phillipson, H. Stoeger, & A. Ziegler (Eds.), *Exceptionality in East-Asia: explorations in the Actiotope model of giftedness* (pp. 1-17). London: Routledge.

Copyright of College Student Journal is the property of Project Innovation, Inc. and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.