

On the Design, Validation and Reliability of the 21st Century Skills Questionnaire (CSQ) in an EFL Context

Hamid Ashraf, Khalil Motallebzadeh, Mohsen Arabshahi

orazanbox@gmail.com

Abstract: The application of the 21st century skills to the field of ELT in the last few years has contributed to the immergence of critical perspectives toward these kinds of skills and their possible effects on the teaching/ learning process. Despite the rapid spread of English in Iran and the relevance of the issues addressed as the 21st century skills, few studies have been conducted to survey Iranian EFL learners' situation in the skills. The present study, therefore, aimed at developing a questionnaire that could be used to evaluate Iranian ELT community's performance in the 21st century skills. The newly developed questionnaire was validated by administering it among 210 English learners in two cities in Iran. This study investigated the internal consistency and construct validity of the newly-developed instrument which both indicated acceptable results.

[Hamid Ashraf, Khalil Motallebzadeh, Mohsen Arabshahi. **On the Design, Validation and Reliability of the 21st Century Skills Questionnaire (CSQ)**. *World Rural Observ* 2017;9(2):62-72]. ISSN: 1944-6543 (Print); ISSN: 1944-6551 (Online). <http://www.sciencepub.net/rural>. 11. doi:[10.7537/marswro090217.11](https://doi.org/10.7537/marswro090217.11).

Keywords: Design; Validation; Reliability; 21st Century; Skill; Questionnaire; EFL Context

1. Introduction

The 21st century rose as the beginning of the Digital Age – a time of unexpected new growth in technology and its subsequent information explosion. Never before have the tools for the information access and management made such an impact on the way we live, work, shop and play. New technologies and tools multiply daily and the new technologies of today are outdated almost as soon as they reach the market (Beers, 2012). “Exemplary science education can offer a rich context for developing many 21st-century skills, such as critical thinking, problem solving, and information literacy. These skills not only contribute to a well-prepared workforce of the future but also give all individuals life skills that help them succeed.” (NSTA, 2011).

This generation of 21st century skills keeps its own effect on the communication and the language learning especially foreign language learning. EFL learners, also, have certainly experienced these possible effects, i.e. they have come to class with different backgrounds, a variety of achievement levels, and different learning styles and strategies, affecting their way of acquiring the new language knowledge. Teachers of EFL have also been affected by the new century technologies. They have changed their teaching channels together with the strategies and beliefs in teaching and learning. Trilling and Fadel (2009) suggest that teachers need to move away from the traditional methods of teaching and bring new and innovating techniques into the classroom to teach the language skills more efficiently.

1.1 Statement of the Problem

Nowadays, almost all students and their parents other than the specialists and educators are certain about the benefits of the new technologies available in

today's world as the new life style components. This new era brings with it some other skills called 21st century skills such as critical thinking, life and career skills, learning and innovation or so, have been the focus of attention in academic settings.

These skills could be mostly done through learning a second language as the indirect learning skills which in turn shows the improvement of people's awareness of the necessity of learning English. In addition to the interrelationship between the 21st century skills and learning English, the most important aspect is the use of these skills in learning a second or foreign language. They not only improve the direct proficiency of EFL learning but will affect their emotional factors like motivation and anxiety.

In this research, the first purpose has been to investigate the necessary construct and items to be included in the inventory for the measurement of 21st century skills in an EFL context. Then, investigating its construct validity and internal consistency has been the other purpose followed in the present study.

1.2 Research Hypotheses

To avoid subjectivity the researchers propose the null hypothesis to find the answer to the questions of the research.

H₀₁: The 21st Century Skills Questionnaire will not show good internal consistency.

H₀₂: The 21st Century Skills Questionnaire will not show good indices of construct validity as measured by Principal Component Analysis.

1.3 Significant of the Study

Designing and validating together with the estimation of the reliability of a questionnaire on the 21st century skills is the purpose of the study. Developing the specific skills of the current century brings with it the question of how useful they can be

in the different situations. This questionnaire can help researchers to discover the relationship between these skills and some aspects of social, economic or psychological fields of study. English language learning as EFL or ESL may be a relevant field in finding the relationship. Motivation, anxiety and proficiency or even the four language skills are some instances.

1.4 (De) limitations of the Study

Like any other researches, some inevitable limitations, which may raise new questions for further researches in the same field in the future, will be imposed on. In addition variables such as gender, age and other personal ones were not taken into account due to the limited number of the available participants.

2. Literature Review

The 21st century skills are not really different. We have always wanted students to be creative thinkers and problem solvers who have the skills necessary to function effectively in society and in the workplace. However, the way in which these skills are incorporated in the classroom and how technology is integrated will greatly change instruction (Beers 2012). Indeed, with technology, today's classroom transcends physical walls and reaches around the globe. In addition, we need to plan instruction with an understanding of the "digital natives" (Prensky, 2001) who have grown up in the Digital Age and who expect learning to be interactive, engaging and up-to-date.

Numerous studies and reports have emerged over the past decade that seek to identify the life, career, and learning skills that define the skills needed for success in the 21st century world. While there are some differences in how the skills are categorized or interpreted, there are also many commonalities.

2.1 Framework for 21st Century Learning

For the students in order to be successful in the 21st century, some skills seem to be of great importance. This is the framework of the present study which includes the three core skills as: life and career skills, learning and innovation skills, information and technology skills. Also, some core subjects like English, Reading, Language Arts, World Languages, Arts, Mathematics, Economics, Science, Geography, History, and Government and Civics are among these skills (Trilling & Fadel, 2009). In addition to the core subjects, there are some themes in the instructional activities including global awareness, financial, economic, business, official literacy, civil literacy, health literacy, and environmental literacy (Trilling & Fadel, 2009).

Looking at the Figure 1 below, the "pools" underneath the rainbow consist of standards and assessments, curriculum and instruction, professional

development, and learning environment. The learning goals include core subject and themes (in green), such as social studies, math, science, language, etc.; interdisciplinary and contemporary thematic expertise, such as environmental, health, financial and civic literacy; and three sets of essential skills (in gold, purple and red), applied to the learning of content knowledge:

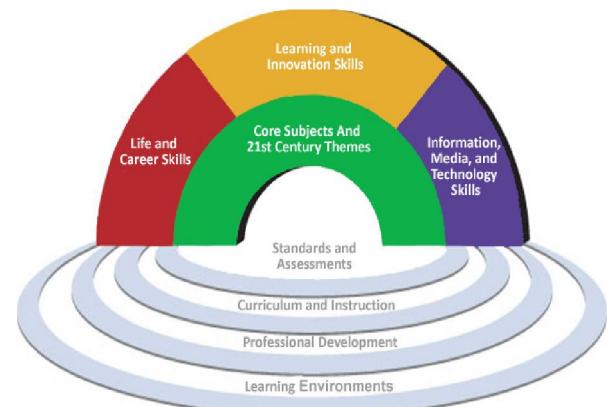


Figure 1 - P21 Framework for 21st Century Learning

The learning support systems represented by the pools below the rainbow, are the typical services and operations of an educational system: learning standards and assessments, curriculum and instruction, professional development, and lesson plans that are taught within the classroom.

The third category refers to career and life skills. This includes flexibility, adaptability, initiative, self-direction, communication, social and cross-cultural interaction, productivity and accountability, and leadership and responsibility. As Trilling and Fadel (2009) recommend, this is "The ability to work effectively and creatively with team members and classmates regardless of differences in culture and style is an essential 21st century life skill".

Likewise, students need to fit themselves for a world beyond the classroom in order to become successful in all aspects of life. Also, leadership and responsibility provides lots of opportunities to take responsibility and exercise leadership-skills important to future employers. Learning some responsibilities will strengthen their work ethic when they have a job or career. They will be prepared and be confident when they are seeking for job opportunities. It will continue to help them succeed in the job market and learn even more skills.

2.2 Benefits of 21st Century Skills

Students trying 21st century skills can benefit in different aspects and domains; linguistically, socially and cognitively; linguistically, by being able to learn lifelong skill in meaningful, authentic ways through challenging content (Cantoni-Harvey, 1987; Snow et.

al., 1989), and since “Language is learned most effectively for communication in meaningful, purposeful social and academic contexts and in real life to talk about what we know and what we want to know more about, not to talk about language itself” (Snow et al., 1989), students can benefit socially. Cognitively, integration of these skills can help students in using reasoning and problem-solving skills to promote higher level of thinking and in large learning gains for students with a wide range of learning styles and backgrounds (Trilling & Fadel, 2009).

2.3 Assessing 21st Century Skills

When we talk about a kind of skill it is expected to be a way, method or a kind of technique for its assessment and evaluation; otherwise, it is something abstract with no measurements, therefore its applicability may be under question. On the other hand assessment of student skills and knowledge is essential to guide learning and provide feedback to students, teachers, and parents on how well students are achieving set standards.

There are 10 skills (or the most important ones) that will typify those necessary for the 21st century. For each of these 10 skills, there are some measureable descriptions of the skill, considering the **Knowledge, Skills, and Attitudes, Values and Ethics** aspects of each skill, (Marilyn Binkley et. al, 2010).

This is referred to as the **KSAVE** framework described in more details below:

- **Ways of Thinking**

1. Creativity and innovation.
2. Critical thinking, problem solving, decision making.
3. Learning to learn, meta-cognition.

- **Ways of Working**

4. Communication.
5. Collaboration (teamwork).

- **Tools for Working**

6. Information literacy (includes research on sources, evidence, biases, etc.)
7. ICT literacy.

- **Living in the World**

8. Citizenship – local and global.
9. Life and career.
10. Personal & social responsibility – including cultural awareness and competence.

To accommodate and reflect these differences in approach, we have designed three categories within the KSAVE model: **Knowledge** that includes all references to specific knowledge or understanding requirements for each of the 10 skills, **skills** that include the abilities, skills and processes that curriculum frameworks are designed to develop in as a focus for learning, and finally, **attitudes, values and**

ethics referring to the behaviors and aptitudes that the students exhibit in relation to each of the 10 skills.

2.3.1 Ways of Thinking

The three categories of skills under this domain represent a promotion in the realization of thinking emphasizing the upper end of thinking skills, such as recall, and inferences.

- **Creativity and Innovation**

Creativity is often described as a thinking skill or at least as an important aspect of thinking that can and should be fostered (Wegerif & Dawes, 2004). Trilling & Fadel argue that creativity can be grown by teachers and learning environments that encourage questioning, openness to new ideas, and learning from mistakes and failures, and they can be developed, like other skills, with practice and over time (Wegerif & Dawes, 2004).

Innovation, on the other hand, is economically improving, advancing, and implementing new products and ideas. Education, just like business and industry, must constantly adapt itself to the rapid shifts in this 21st Century. This set of skill promotes creative thinking and the ability to work creatively with others, (Marilyn Binkley et.al 2010).

- **Critical Thinking, Problem Solving and Decision Making**

Critical thinking and problem solving have become the important features of the curriculum in many parts of the world. In the USA, for example, the American Philosophical Association has published the Delphi report on critical thinking, (Facione, 1990) which identified six cognitive thinking skills: interpretation, analysis, evaluation, inference, explanation and self-regulation. This framework was further elaborated to include attitudinal and values based criteria: students should be inquisitive, well informed, open-minded, fair, flexible and honest.

In 2000, England’s Department for Education developed new computer-based tests of problem solving for children aged 8-14, making creative use of computer in the domains of mathematics, science, design and technology as a new scale in the assessment of students’ thinking and ability to apply a range of techniques to solve novel and unexpected problems.

- **Learning to Learn and Meta-Cognition**

Learning to learn and meta-cognition have most frequently been measured by thinking aloud protocols that have been administered in one-on-one situations. Clearly this methodology is not suitable for large-scale assessments; however, technology might be used to support and assess ‘learning to learn’, including self-assessment and self-regulated learning. One interesting example of this is the e-VIVA project developed at Ultra-lab in the United Kingdom (Marilyn Binkley et. al, 2010).

Prins, Veenman, & Elshout (2006), believed that meta-cognition may help to compensate for the lack of intelligence or prior knowledge of a subject during problem solving. they showed that students with high meta-cognitive skill levels tend to outperform those with low meta-cognitive skills on complex and unfamiliar tasks, even when they are equal in ability or aptitude.

2.3.2 Ways of Working

21st century brought with it a rapid shift in the way people work, as well. Having team members telecommute while working on the same project is an example employing some skills in the domain as:

- **Communication**

Marilyn Binkley et al. (2010), proposed communication as the mainstay of assessments in the form of reading, writing and alternative representations such as graphing in mathematics and science, though in the form of listening and speaking the assessments have not taken into account the full range of possibilities. As an example of a change, consider the use of text messaging. The first commercial text message was sent in December of 1992. Today the number of text messages sent and received everyday exceeds the total population of the planet.

- **Collaboration and Teamwork**

Collaboration at the most basic, school level assessments focuses on the individual performance;

consequently, in doing a collaborative task, the most important question is how to assign credit to each member of the group, as well as how to account for differences across groups that could measure the student's performance (Laurillard, 2009).

Collaboration also has powerful effects on student learning. This can be seen in the higher scores on collaborative works than separate products (Fall, Webb, & Chudowsky, 1997; Rojas-Drummond & Mercer, 2003; Saner, et. al., 1994; Webb, 1993).

Working in collaboration can improve students' social competency, as well (e.g., conflict resolution skills and use of helping behaviors) and academic self-concept (Ginsburg-Block, Rohrbeck, & Fantuzzo, 2006).

2.3.3 Tools for Working

- **Information Literacy**

Information literacy includes research on sources, evidence, biases, etc. These are clearly important skills, (Table 1).

For the purpose of communication, entertainment, or accessing information, most children acquire practical skills in using computers that are not part of the assessment processes that they meet in schools. Some research has shown that students who are active computer users perform lower than expected on paper-based tests (Russell & Haney, 2000).

Table 1: Educational Testing service Framework for ICT

Basic	Be able to open software, sort out and save information on the computer, and other simple skills on the use of computer and software.
Download	Be able to download different information types from the internet.
Search	Know about and how to get access to information.
Navigate	Be able to orient oneself in digital networks, learning strategies in using the internet.
Classify	Be able to organize information according to a certain classification scheme or genre.
Integrate	Be able to compare and put different types of information together in relation to multimodal texts.
Evaluate	Be able to check and evaluate the information one seeks from the internet or to judge the quality, relevance, objectivity and usefulness of the information one has found. Critical evaluation of sources.
Communicate	Be able to communicate information and express one self through different media tools.
Cooperate	Be able to take part in net-based interactions of learning, and take advantage of digital technology to cooperate and take part in networks.
Create	Be able to produce and create different forms of information as multimodal texts, make web pages and so forth. Be able to develop something new by using specific tools and software. Remixing different texts into something new.

- **ICT Literacy**

In 2001, the Educational Testing Service (ETS) in the U.S. developed a panel framework for ICT literacy. The outcome was the report *Digital transformation: A framework for ICT literacy* (International ICT Literacy Panel, 2002). Based on this framework, shown in Table 1, one can define ICT literacy as “the ability of individuals to use ICT

appropriately to access, manage and evaluate information, develop new understandings, and communicate with others in order to participate effectively in society” (Ainley et. al., 2005).

2.3.4 Living in the World

Essentially people must learn to live not only in their town or country but also in the world. As more and more people individually move in the 21st century

to compete, connect and collaborate, it is even more important that they understand all the aspects of citizenship; what happens in their country and in the globe as well (Marilyn Binkley et. al, 2010).

- **Citizenship**

Citizenship as an educational objective is not new, and has been part of curricula, especially in social studies. A central focus has been on knowledge about democratic processes. Citizenship as a competence implies certain challenges in measurement (Marilyn Binkley et. al, 2010).

- **Life and Career**

The management of life and career is also another skill needed for living in the world. There is long tradition of measurement of occupational preferences as one component for career guidance but no strong basis for building measures of skill in managing life and career (Marilyn Binkley et. al., 2010).

- **Personal and Social Responsibility**

The exercise of personal and social responsibility is also included among the skills needed for living in the world. There are aspects of this skill in collaboration and teamwork, which is among the skills included among ways of working. Personal and social responsibility is taken to include cultural awareness and cultural competence.

3. Methodology

This chapter represents an overview of the research methodology, an account of the procedures used in the study, including the research design, selection and description of the participants, setting, instruments used for data collection and analysis.

3.1 Study Design

The nature of the study is both quantitative and qualitative; the gathered data and discussed results are based on scores and statistics and the construction of the questionnaire is a kind of qualitative survey. Factual questions were asked to identify demographic characteristics of the participants like gender, age and experience or their level of proficiency. Behavioral recognition questions helped to determine the students' performance and knowledge of the 21st century skills.

3.2 Participants and sampling

To collect the required data, a group of 210 EFL learners among the high school students in Tehran and Shahryar, Iran were selected quite randomly. This sampling is pilot study of a larger research which is to be done nationwide. The learners in our population were equal number of male and female, between 15 to 18 years of age, accidentally selected from 3 different high schools.

3.3 Instrumentations and Procedure

The procedures followed in this study comprise designing and validating the questionnaire. To begin with, in order to design the questionnaire, a group of 3 M.A EFL teachers under the supervision of two Ph.D. professors were selected to gather the data for 21st century skills. Due to the groups of skills (Table 2) some questions were designed to show the degree of skills attributed. This was adapted from many different sources and studies done in recent years.

After some revision and editing the questions, the Likert scaling of 5 was selected for the degree of ability the participants may have. Then to ascertain clarity and prevent any misunderstanding for the Iranian participants a Persian copy prepared which was then revised by the professors. A group of teachers from different fields together with some limited number of students were asked to pilot the questions for the last revision. The 21st CSQ of 50 questions in a 5-point Likert scale including 1 = always/entirely, 2 = often/ mostly, 3 = sometimes/ partly, 4 = seldom/ hardly ever, 5 = never/ not at all. The scores then range between 50 and 250, (Appendix A & B) was the result.

To gather the data for the degree of reliability the questionnaire performed in some high schools in Tehran and Shahryar, Iran. The 210 participants included 160 boys and 50 girls who answered the questionnaire in 30 minutes based on the time allocated.

Gathering the data, they were entered into and processed with Excel software specified for the reliability measurement in Alpha Cronbach and Spearman-Brown prophecy discussed as follows in data analysis.

3.4 Data Analysis

The internal consistency of the whole questionnaire was measured with the Cronbach Alpha reliability estimate. Moreover, using Alpha Cronbach, the reliability of each factor constructing the validated questionnaire was also examined.

To validate the questionnaire, Exploratory Factor Analysis (EFA) was used. First, PCA extracted the underlying factors by calculating the eigenvalues of the matrix greater than 1.0. The Scree test was used in order to decide about the number of factors to retain for rotation. For conducting factor rotation, Varimax (orthogonal rotation) with Kaiser Criterion was used. The result was a rotated component matrix and a transformation matrix. The rotated component matrix indicated the variables loaded on each factor so that the researchers came up with the new factors.

Descriptive statistical analysis via SPSS and EXCEL software was used in this study to analyze the data. While the mean shows the degree of skills attributed to the participants, its standard deviation (SD) measures the variability of responses.

3.5 Reliability

The reliability of the whole questionnaire was 0.82, a good reliable test when estimated in Cronbach Alpha through the Excel software created by Del

Siegle (dsiegle@uconn.edu) and so as the other reliability calculating scales are shown in Table 2. This is exactly what SPSS software could find.

Cronbach's Alpha	0.824855868	Reliability Calculator	
Split-Half (odd-even) Correlation	0.774979132		
Spearman-Brown Prophecy	0.873226189		
Mean for Test	131.252381		
Standard Deviation for Test	18.64960408		
KR21	1.646168415	Questions	Subjects
KR20	1.698829344	50	210
Reliability Coefficients by SPSS			
N of Cases = 210.0	N of Items = 50	Alpha = .8249	

On the other hand analyzing the reliability in item deletion was at least 0.81 which showed again a good reliability for all the items in isolation.

3.6 Construct validity

The Factorability of the inter-correlation matrix was measured by two tests: Kaiser-Meyer-Olkin test of Sampling Adequacy (KMO) and Bartlett's Test of Sphericity. The results obtained from the two tests revealed that the factor model was appropriate (Table 3).

Table 3. KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.706	
Bartlett's Test of Approx	Chi-Square Sphericity	2956.735
	Df	1225
	Sig.	.000

The 210 valid questionnaires were collected to carry on a pilot study. We chose to base our estimate on the Principal Component Analysis with the variance covariance matrix, because the 50 variables were obtained on a 5-point scale of Likert. The adequacy indicator of the sample KMO=0.706 > 0.70 indicated that the sample data are suitable for the undergoing of factor analysis. The control of sphericity (Bartlett's sign 0.000 < 0.001) proved that the principal component analysis has a sense. Through this analysis, data grouping was based on the inter-correlation with the aim of imprinting those factors which describe completely and with clarity the participants' attitudes towards the research subject.

The construct validity of the Social and Cultural Capital Questionnaire was examined through Exploratory Factor Analysis (EFA). PCA extracted 16 factors with eigenvalues greater than 1.0 which accounted for 69% of the variance.

The results obtained from the Scree Test indicated that a five-factor solution might provide a

more suitable grouping of the items in the questionnaire.

The researchers, then, inspected orthogonal rotation. The result of Varimax with Kaiser Normalization was a rotated component matrix. The results of this analysis are shown in Table 3. The results indicated that the first factor consisted of 15 items. The second factor consisted of 11 items. Factor 3 consisted of 6 items. Factor 4 consisted of 7 items and items 18, 19, and 25 made up the fifth factor. The total number of items was 42.

Finally, the researchers analyzed the items comprising each factor and named them as listed in table 4.

Table 4. Classification of 21st CSQ items

	Skill Category	Items
1	Critical thinking and problem solving	1-2-3-4-5-6
2	Creativity and innovation	7- 8
3	Communication and collaboration	9- 10-11-12-13
4	Interpersonal skills	14- 15-16
5	Leadership	17- 18-19
6	Entrepreneurialism	20- 21
7	Health and wellness	22- 23
8	Flexibility and adaptability	24- 25
9	Global and culture awareness	26
10	Social responsibility and ethics	27- 28
11	Technology literacy	29- 30- 47- 48- 49- 50
12	Curiosity and inquisitiveness	31- 32-33
13	Media literacy	34- 45
14	Information literacy	35- 46
15	Environmental literacy	36
16	Financial and business literacy	37- 38
17	Meta-cognition	39- 40
18	Accountability	41
19	Civil literacy	42- 43
20	Visualization	44

5. Discussion and Conclusion

As we saw in this study the researchers sought to find out the reliability and validity of the 21st Century Skills Questionnaire (CSQ) when examined with EFL students in an EFL context. The 21st CSQ is then a valid and reliable questionnaire which can be used for several studies in the area of the new world skills needed to live and work. The factors can help researchers focus on some specific areas wherever necessary for their studies.

On the other hand, since this seems to be the first study done on the 21st century skills, at least in the area of Iranian EFL learners, it will open new eras in the field of TEFL or TESL, as well. Most researchers will need the whole or some parts of the questionnaire to perform their EFL subject areas in relation to the 21st century skills. This in turn can be utilized by the researchers of the other fields of studies like humanities and psychology.

Each factor in the classification of skills is itself an open area for further studies. This can be done in relation to the other factors or on its own. For example, the study of the means individually reveals that Iranian EFL learners are good in the first factor under the name of critical thinking and problem solving in comparison to the other factors.

Correlational studies also will reveal the predictability of some pedagogical and psychological factors. These include the learners' special attitudes, aptitude, motivation and anxiety. Wen-chi et.al, 2011, in their study as the relationship between the learners' online interaction and the level of confidence, motivation and skills revealed that in EFL realms, technology makes it possible to provide opportunities more commonly found only when there is a surrounding population of native speakers, and thus helps transform traditionally passive learners into more engaged and interactive learners. The data showed that even a relatively small amount of positive authentic interaction in the target language made students more comfortable in applying their skills, more confident in what they learned, and more inspired to make global, cross-cultural connections. Therefore, this instructional design positively influenced what Dörnyei called the vision of self of the students, promoting the idea of being able to function in the cosmopolitan 21st century international culture and leading to stronger overall EFL motivation, confidence, and ability.

References

1. Ananiadou, K. and M. Claro (2009), "21st Century Skills and Competences for New Millennium Learners in OECD Countries", OECD Education Working Papers, No. 41, OECD Publishing. <http://dx.doi.org/10.1787/218525261154>
2. Dörnyei, Z. (2005). *The psychology of the language learner: Individual differences in second language acquisition*. Mahwah, NJ: Lawrence Erlbaum.
3. Hixson, N.K., Ravitz, J., & Whisman, A. (2012). *Extended professional development in project-based learning: Impacts on 21st century teaching and student achievement*. Charleston, WV: West Virginia Department of Education, Division of Teaching and Learning, Office of Research.
4. Kazi, AM. & Khalid, W. (2000). *Questionnaire designing and validation*; Department of Pediatrics and Child Health, Aga Khan University, Karachi, Pakistan.
5. Kyllonen, P. C. (2012, January). *The role of non-cognitive skills in academic success*. Paper presented at the conference of 21st century knowledge and skills: the new high school curriculum and the future of assessment, University of Southern California, Los Angeles.
6. Ledward, C.B. & Hirata, D. (2011). *An Overview of 21st Century Skills*. Pacific Policy Research Center, Honolulu: Kamehameha Schools–Research & Evaluation
7. Marilyn Binkley M. et.al. (2011). *Assessment and Teaching of 21st Century Skills (ATC21S) Draft White Paper 1. Integrating Research Findings*, National Council on Measurement in Education, Vancouver, B.C.
8. National Research Council. (2011). *Assessing 21st century skills: Summary of a workshop*. Washington, DC: The National Academies Press. Retrieved from http://ctl.sri.com/publications/downloads/21st_century_skills.pdf
9. Frisbie, D. A. (2008). *NCME Instructional Module on Reliability of Scores from Teacher-Made Tests*. The University of Iowa.
10. Noreen M. & Webb, R. J. (2006). *Shavelson and Edward H. Haertel. Reliability Coefficients and Generalizability Theory*
11. North Central Regional Educational Laboratory (NCREL) & Metiri Group, (2003). *en- Gauge 21st Century Skills: Literacy in the Digital Age*. <http://www.ncrel.org/engage>
12. Pacific Policy Research Center. (2010). *21st Century Skills for Students and Teachers*. Honolulu: Kamehameha Schools, Research & Evaluation Division.
13. Patrick C. K. (2012). *Measurement of 21st Century Skills within the Common Core State Standards*, May 7–8.

14. P21 Framework Definitions, (2009). The Partnership for 21st Century Skills. <http://www.21stcenturyskills.org>.
15. Ghanizadeh A. & Moafian F. The Relationship between Iranian EFL Teachers' Sense of Self-Efficacy and their Pedagogical Success in Language Institutes. Islamic Azad University, Mashhad Branch, Iran
16. Golafshani N. (2003). Understanding Reliability and Validity in Qualitative Research University of Toronto, Toronto, Ontario, Canada.

Appendix A 21st Century Skills Questionnaire

This questionnaire tends to measure your level of ability (what to do or have in mind) in 21st century skills.

Please try to read the items and use the choice based on your present state in these skills.

Student's Name: (optional)..... **Gender:** male female

Institute's name: **State:** **City:**.....

Age: below 15 between 15-18 between 18-21 22 and over

Education: Junior High School Senior High School College B.A/S M.A/S

Foreign Language Class Experience: Yes No How Long.....

Level of EFL Proficiency: Elementary Lower Intermediate Intermediate
 Upper Intermediate Advanced Proficient

No	Items	Entirely/ Always	Mostly/often	Partly/ Some times	Rarely/ Hardly ever	Not at all/ Never
1	When faced with a problem I know how to apply knowledge to solve them.					
2	When faced with a difficult problem, I tend to get discouraged easily.					
3	After I've made a decision, I find myself wishing I had chosen differently.					
4	I'd prefer to let other people make difficult decisions for me.					
5	When others get stuck, I am able to think of new solutions to problems.					
6	I can generate good ideas based on logic and facts.					
7	I believe that creativity is fundamentally driven by luck and accident.					
8	I can make new and creative suggestions and solutions in groups.					
9	I'm patient during a consultation and try not to jump to conclusions too quickly.					
10	I'm willing to spend time with others.					
11	I undermine any of others' personal beliefs.					
12	I speak in a way that others could understand.					
13	While speaking, I give my addressee enough time to ask questions.					
14	If I don't understand someone's explanation the first time, I ask for clarification.					
15	I have no difficulty putting my thoughts and feelings into words to express to others.					
16	When other people become emotional around me, I know how to react.					
17	I can easily get people to follow my lead.					
18	People look at me for help when things go wrong in the organization.					
19	I feel that I inspire other people - I influence how they think, act, and accomplish goals.					
20	I prefer my own way of doing things.					

No	Items	Entirely/ Always	Mostly/ often	Partly/ Some times	Rarely/ Hardly ever	Not at all/ Never
21	I view mistakes as learning opportunities.					
22	I care about my fitness.					
23	I am calm and cool without any stress and depression.					
24	I can adapt myself to different roles, job responsibilities, schedules, and contexts.					
25	I can work effectively in a climate of ambiguity and changing priorities.					
26	I learn from and work collaboratively with individuals representing diverse cultures including those of foreign languages.					
27	I act responsibly with the interests of the larger community.					
28	I behave in a respectable professional manner when dealing with other people.					
29	I use computers as a tool to research, organize, evaluate, and access the information.					
30	I use mobile phones, media players, GPS, etc. as a tool to communicate with others and to access the information.					
31	Simple explanations leave me with a lot of questions to ask.					
32	When I come across something puzzling, I like to try to find a solution.					
33	I curiously enjoy learning about unfamiliar subjects.					
34	I understand and utilize the most appropriate media creation tools, characteristics, and conventions.					
35	I know where and how to find information efficiently and effectively using appropriate sources like, journals, encyclopedias, database or so.					
36	I understand the environment in which I live, particularly as relates to air, climate, land, food, energy, water and ecosystems and the factors that may damage or survive them.					
37	I'm responsible for day-to-day decisions about my money.					
38	I do my financial jobs using credit cards and on-line gateways.					
39	I have a good memory for words and names and easily remember to do my tasks.					
40	I know how to control my thoughts and learning activities.					
41	I can manage time to control and perform all my intended programs and get the best results.					
42	I understand the rights and responsibilities of citizenship at local, state, national, and global levels.					
43	I know the purpose and function of each of the three branches of government and the Constitution.					
44	I can demonstrate, interpret, recognize, and understand information presented through visible actions like objects and symbols.					
45	I prefer electronic (written or audio) form of books and magazines.					
46	I follow the daily news and events through the internet.					
47	I use the electronic mail (e-mail) rather than postal mail to communicate with others.					
48	I prefer the distance education rather than attending schools.					
49	I prefer on-line exams rather than personal/ usual school exams.					
50	I prefer to use audio-visual recorded clips rather than note taking in my classes.					

Appendix B

(پرسشنامه مهارت های قرن 21)

نام (اختیاری) : جنسیت: مذکر : مؤنث:

نام مؤسسه / آموزشگاه:

استان :

شهرستان :

سن : زیر 15 سال 15 تا 18 سال 19 تا 21 سال 22 سال یا بیشتر

تحصیلات : دوره اول متوسطه دوره دوم متوسطه دانشجوی کاردانی

کارشناسی ارشد

دارای سابقه شرکت در کلاسهای زبان موسسات: خیر بلی مدت: سال

سطح مهارت زبان انگلیسی خود را در چه حدی ارزیابی می کنید:

مبتدی پایین تر از متوسط متوسط بالاتر از متوسط پیشرفته کاملاً پیشرفته

این پرسشنامه با هدف جمع آوری اطلاعات مربوط به مهارت های قرن 21 ام تهیه شده است. لطفاً پس از مطالعه هر سؤال موجود، انتخاب کنید و در میزان اطلاعات، تفکر، یا توانایی خود را نسبت به آن مهارت با توجه به گزینه های با تشکر فراوان بر مبنای علامت بزنید

ردیف	سؤالات مربوط به مهارت
1	هنگام مواجهه با مشکلات می دانم چگونه با اطلاعاتی که دارم مشکل را حل کنم.
2	دلشدم می شوم هنگامی که با مسئله ی دشواری روبرو می شوم.
3	بعد این که تصمیمی را گرفتم ، آرزو می کنم یکاش جور دیگری عمل کرده بودم.
4	ترجیح می دهم بگذارم تا دیگران تصمیمات مشکل را برایم بگیرند.
5	وقتی دیگران را درگیر مشکلی می بینم به این فکر می افتم که چگونه راه حل جدیدی بیابم برای رفع آن.
6	می توانم بر اساس منطق و استدلال و حقایق موجود ایده های جدیدی طرح نمایم.
7	عقیده دارم که خلاقیت اصولاً بر اساس شانس و به طور تصادفی رخ می دهد.
8	می توانم پیشنهادات و راه حل های خلاقانه و جدیدی در گروه همسالان خود طرح نمایم.
9	در حین مذاکره و مشورت با دیگران آرام و صبورم و سعی می کنم خیلی زود نتیجه گیری نکنم.
10	از گذراندن وقتم با دیگران لذت می برم.
11	به عقاید دیگران اهمیت نمی دهم و سعی می کنم آن ها را تخریب کنم.
12	شوند طوری صحبت می کنم که دیگران به راحتی متوجه شوند.
13	هنگام صحبت کردن با دیگران به آن ها فرصت سؤال پرسیدن می دهم.
14	اگر صحبت کسی را برای بار اول متوجه نشوم از او می خواهم تا مطلب را واضح تر بیان کند.
15	می توانم به خوبی احساساتم را در قالب کلمات به دیگران بیان کنم.
16	دیگران احساساتی می شوند می دانم چگونه نسبت به آن عکس العمل نشان دهم و وقتی
17	به آسانی قادرم دیگران را متقاعد کنم تا رهبری و مدیریت مرا بپذیرند.
18	من هستم دیگران هنگام بروز مشکل متکی به کمک
19	رفتار و هدفیابی آن ها تاثیر ، به لحاظ تفکر فکر می کنم می توانم بر دیگران گذارباشم
20	شیوه ی خاص خود را برای انجام کارها ترجیح می دهم.
21	به مشکلات به عنوان فرصت هایی برای یادگیری می نگرم.
22	مراقب وضعیت سلامت و تناسب جسمی خود هستم
23	فشارهای روحی هستم اصولاً آدمی راحت و آرام و به دور از
24	می توانم خودم را با کارها، وظایف و نقش های مختلف سازگار کنم
25	می توانم در شرایط خاص ، مهیم و غیر منتظره کار کنم
26	با افرادی که از فرهنگ ها و زبان های متفاوت هستند می توانم همکاری کنم و از آن ها بیاموزم

				27	در برابر علایق و سلاقی فرهنگ ها و گروه های مختلف مسئولانه برخورد می کنم.
				28	با دیگران به طور حرفه ای و با احترام رفتار می کنم.
				29	از رایانه به عنوان ابزاری برای انجام تحقیقات ، سازماندهی، ارزیابی و نیز دسترسی به کنم اطلاعات مورد نیازم، استفاده می
				30	از تلفن همراه و امکانات صوتی تصویری آن به عنوان ابزاری برای برقراری ارتباط با دیگران و نیز دسترسی به اطلاعات مورد نیازم ، استفاده می کنم
				31	حتی توضیحات و مسایل ساده، سوالات زیادی را برای من به دنبال دارد
				32	کننده ای روبرو می شوم بیشتر مایلم به دنبال راه حلی برای آن وقتی با مسئله ی گیج باشم
				33	می برم کنجکاوانه به دنبال یادگیری موضوعات عجیب و تازه هستم و از یادگیری آنها لذت
				34	کلیپ های صوتی و) با ابزارها (نرم افزار و سخت افزارها) ی تولید محتوای چند رسانه ای آشنا هستم و آن ها را به کار می برم (تصویری
				35	المعارف ها به می دانم چگونه با ابزارها و منابع اطلاعاتی مختلف نظیر کتب و مجلات و دایره دست یابم اطلاعات مورد نیازم
				36	محیط زیست اطراف خود از قبیل آب ، هوا ، زمین ، غذا، انرژی و شرایط اقلیمی را می شناسم.و می دانم چه عواملی آن ها را به مخاطره می اندازد و یا احیا می کند
				37	دوست دارم مسئول تصمیم گیری های معمول در مسایل مالی و اقتصادی خانواده باشم چرا که به اهمیت مسایل مالی واقفم
				38	های اعتباری انجام می امور مالی خود را با استفاده از فناوری های نوین بانکی مانند کارت دهم
				39	حافظه ی خوبی برای اسامی و لغات دارم و به آسانی کارهای روزمره خود را به خاطر می سپارم
				40	می دانم چگونه افکار و فعالیت های یادگیری خود را کنترل و برنامه ریزی نمایم
				41	ریزی)فعالیت های خود را برای گرفتن نتیجه ی می دانم چگونه با مدیریت بر زمان (برنامه بهتر سازماندهی نمایم
				42	، به حقوق و مسئولیت های افراد طبقات مختلف اجتماعی و شغلی در سطح منطقه ای آشنا هستم کشوری و جهانی
				43	اسلامی آشنا با اهداف و عملکرد های قوای سه گانه(مقتنه ، مجریه و قضائیه)و مجلس شورای هستم
				44	می توانم اطلاعاتی را که از طریق علانم تصویری و غیر کلامی نظیر تابلو های راهنمایی و بفهمم و تجزیه و تحلیل نمایم رانندگی و نظیر آن منتقل می شود را
				45	کنم از نوع الکترونیکی (نوشتاری یا صوتی) کتب و مجلات برای مطالعه استفاده می
				46	اخبار و وقایع را از طریق اینترنت دنبال می کنم
				47	برای تهیه و ارسال نامه ها و مکاتبات از پست الکترونیکی (ای میل) استفاده می کنم
				48	ترجیح می دهم بجای حضور فیزیکی در کلاسهای درس، در کلاسهای مجازی شرکت کنم
				49	امتحانات درسی بصورت مجازی شرکت کنم ترجیح می دهم در
				50	تمایل دارم از تدریس ضبط شده صوتی و تصویری معلمان استفاده کنم تا اینکه یادداشتهای کلاسی را استفاده کنم

مکان:

تاریخ:

موفق و کامیاب باشید: ساعت

6/25/2017