

The purpose of present research was to determine the validity of Ghasemi Seven-pronged Communication Skills Questionnaire in English. The population consisted of professors and students out of Iran and 210 individuals were selected as sample. As to determine the structure validity, the first and second order confirmatory factor analysis based on structural equation modeling, convergent validity (AVE) and divergent of Fornell and Larcker Matriceses were used, and for reliability of the questionnaire, the Cronbach's alpha coefficient, composite reliability (CR) and coefficients of factor load from the SPSS and AMOS software were used. The results of the confirmatory factor analysis showed that the values of the Fitness indexes of the measurement model of the questionnaire indicated the Fitness and appropriateness of fitness indexes. According to value of average variance extraction (AVE) and value of correlation of components in the divergent validity of Fornell and Larcker Matriceses, validity and reliability of questionnaire in English language for students and Professors abroad Iran are approved. As a result, it could be used as a valid and reliable mean for assessing communication skills among students and professors, both inside and outside Iran.

Introduction

Nowadays, the educational system and its activities are constantly subject to transformation with regard to the progress of societies, and educational transformation itself is due to the social transformation and the transformation of science and technology, because in simple societies, simple needs and the method of satisfying needs are also simple. But in complex and advanced societies, the pace of development of educational systems is so rapid that every few years, a general transformation is created in the educational system. For this reason, in today's world, by virtue of the rapid progress of science and technology, not all of the available knowledge can be achieved, nor can assign any person with any qualifications for teaching and training. Today, communication must be considered as one of the most important indexes of human communication, such that the success of educators, professors and students assist the capability in realizing the content and clarifying the demands (Rahmanzadeh and Najafi Naiser, 2013).

Therefore, communication has been one of the oldest and, at the same time, the greatest achievements of mankind. In the past and for the primary human being, in addition to the functions that have been used to preserve life and to help others, it has been the foundation of social activities and the beginning of a social life. Human is originally a social being and needs to communicate with others (Mousavi, 2015). Communication is a form of interaction in which people share

attitudes, ideas, information, messages and feelings that may affect their behavior and affect the reactions of beliefs, culture, reality, and life history (Pereira and Puggina 2017).

On the one hand, communication skills are inevitable in order to make these relationships and contacts more effective (Hosseinpour et al, 2014). Communication skills are the skills by which individuals can engage in interpersonal interactions and communication process, that is, the process through which individuals share their information, thoughts, and feelings by exchange of verbal and non-verbal messages. (Hargie and Dixon, 2004), or the meaning of communicative skills, is a process that enables a person to behave appropriately. In fact, the socialization of each person is the achievement of his communication skills that he has previously learned (Razaghi and Charoqi, 2007). These skills are so important, insufficiency of which is associated with loneliness, social anxiety, depression, low self-esteem, and lack of job and education success (Ahmadi et al, 2014). Individuals can engage in interpersonal interactions and communication processes through communication skills. These skills are the essential ways to lead a healthy and productive life, and it helps the person adapt to others and to form proper behavior, and makes the person perform his proper role in society without harming himself or others. (Sabzi and Yousefi, 2014).

Hence, the queries “what is communication skills?”, “How can communication skills be created?” and “How to evaluate it?” are critical issues that should be addressed in today's management approach (Eğriboyun, 2017). In this regard, there are different types of communication skills. In a division of various types of communication skills such as intrapersonal skills, interpersonal skills, small groups, public relation, multiculturalism, computer communication and organizational communication (Farhangi, 2004). Also Barton (1990), in his book “A Practice of Management” mentioned three factors of effective listening, verbal skills and feedback as the communication skills. Although the need for communicative skills, to succeed in today's management, is completely clear (Bakhshayesh, 2008; Jafar Zanjani, Akbari and Horry, 2009; Wadongo, Kambona and Odhuno, 2011; Shamsudin and Chuttipattana, 2012), it is less regarded in validation of the communication skills questionnaire among a group of students and professors abroad. In general, the means that measure communication can be of great value to individual interventions, relationships, and care (Pereira and Puggina 2017). However, the evaluation of communication skills can be done using different means and methods, and one of the ways to assess the use of appropriate communication skills questionnaire in the field of students and professors.

Literature Review

Takashi et al (2006), in their research, determined the validity and reliability of the communication skills questionnaire. They conducted this research on 77 people with mental disorders and 100 normal people, and 55 of the family

1 members and 4 medical personnel also participated in the target ranking. They
 2 identified three factors in validating the communication skills questionnaire, the
 3 first factor had 0.51 of the variance and the second and third factors dedicated 0.6.2
 4 of the variance. Factors 1 and 2 were identified as interpersonal communication
 5 skills and factor 2 was identified as public communication skills (non-verbal),
 6 which the first factor was identified as cooperative communication skills and the
 7 second factor as an assertiveness skill, which these three factors in total indicate
 8 0.63.4 of the variance of communication skills. The reliability of the questionnaire
 9 was based on the Cronbach's alpha coefficient between 0.91 -0.97, and through re-
 10 test was between 0.90 and 0.95. Finally, they showed that the communicational
 11 skills questionnaire has the necessary validity and reliability. Part (2014) also
 12 reviewed the validation of the communication skills questionnaire in people with
 13 schizophrenia. The reliability of the questionnaire based on the Cronbach's alpha
 14 coefficient was 0.96; the reliance and assurance coefficients were tested with a re-
 15 test between 0.6 and 0.7. Furthermore, convergent validity was significant in all
 16 evaluations and showed that it has high psychometrics. Nalan and Nevin (2014), in
 17 their research, surveyed the development and validation of communication skills
 18 scale for professors of students. In total, the professors of students from different
 19 parts of the Turkish State University participated. Based on the results of 36
 20 questions, four indexes were identified for the communication skills questionnaire.
 21 The reliability of the scale of the whole questionnaire was also high, indicating the
 22 homogeneity of the scales. The Fitness of the model was also confirmed on the
 23 basis of second-order confirmatory factor analysis. Ghasemi et al (2014) also
 24 evaluated validity and reliability of questionnaire for determining the desired level
 25 of communication and sextet effective communication skills. They showed that the
 26 skills of writing, speaking, listening, reading, body language, and using modern
 27 communication means were identified as sextet communication skills, and by
 28 implementing the confirmatory model of the communication-level questionnaire,
 29 it was determined that all of the contributing factors had a high validity. Sadat
 30 Shariatzadeh et al (2015), in their research on design of assessment means of
 31 communication skills of rehabilitation students based on Karcov's model, showed
 32 that the average content validity for the whole form of evaluation was 87.5%, the
 33 average of nominal validity for the whole form was 87.25% and Cronbach's alpha
 34 coefficient was 0.93, and the results of factor analysis in the second stage revealed
 35 that among four domains (four factors) of Karekov model, only three domains or
 36 factors have the required validity. Vakili et al (2012) designed and evaluated an
 37 interpersonal communication skills mean among the health care community
 38 population that were grouped into seven factors including general communication
 39 skills and six specific communication skills. The reliability of the mean was 0.91
 40 which was able to predict 0.66% of the changes in communication skills. In their
 41 research,

42 It should be noted that communicative skills are of particular importance as a
 43 capability by using an effective method that can really measure students' skill in
 44 communicating in real terms. Today, individuals with different psychological and

personality structures use different tactics and techniques in communication, and these techniques and methods differ in individuals and can be related to cultural factors of the society. It seems that Qasemi Seven-pronged Communication Skills Questionnaire in English applied as the basic communication skills in the communication process has still an undeniable role. Therefore, due to the importance of professors' communication skills and their role in their educational performance, this study seeks to validate Qasemi Seven-pronged Communication Skills Questionnaire in English among students and professors abroad. Because of this, the necessity of recognizing and knowing the communication skills between them and identifying the levels of communication skills leads to improve the level of interpersonal relationships.

Methodology

The purpose of present research was the development and mean validation for measuring the communication skills of professors and students abroad. The descriptive research was correlational method which, in terms of purpose was practical, in terms of essence was explanatory and in terms of collection was field method. The statistical population of the research included all professors and students from abroad, considering that the required sample in the factor analysis studies was at least two subjects and a maximum of 10 subjects were proposed for each item of the questionnaire (Hooman, 2016; Klein, 2015); and Considering the fact that the researcher in this research is seeking to develop and validate Qasemi Seven-pronged Communication Skills Questionnaire (2017), based on the items in this questionnaire (21 items), 210 individuals were selected as available in form of a sample, which eventually after removal of imperfect cases, 190 returned questionnaire were analyzed and surveyed. The mean of measurement in this research was QasemiSeven-pronged Communication Skills Questionnaire (2017) in English including 21 items and 7 components (writing, speaking, listening, reading, body language, using modern communication means and observation) with a five-point Likert scale (never = 1 to ever = 5). In this research, the reliability of the research mean was measured by three criteria: 1- Cronbach's alpha; 2- Composite reliability (CR); 3- Factor loads coefficients, and then convergent and divergent validity is assessed. Cronbach's alpha is a classical standard for measuring reliability and a suitable scale for evaluating Internal Consistency. Moss et al (1998) have introduced a value of 0.6 as the threshold of Cronbach alpha coefficient for variables with a small number of questions (Moss et al, 1998). A more standardized criterion is the value of composite reliability (CR) in which the reliability of the structures is not absolutely calculated but due to the correlation of their structures with each other and, if the composite reliabilityvalue for each structure is greater than 0.7, it indicates the inherent internal reliability for the model of measurement. Another criterion used to examine a measurement model is the convergent validity which examines the

Average Variance Extracted between each construct with its own indicators. However, the degree of correlation of each structure with its questions is determined, and the more correlation, the more Fitness which is indicated by AVE mark. Maganer et al (1996) considered the value of 0.4 for the AVE to be sufficient (Davoodi and Rezazadeh, 2013). To evaluate the divergence of the model, the Fornell and Larcker Matrices were used. In this method, the correlation coefficient of a structure with its indexes is compared with that of a structure with other structures. In the main diameter of this Matrices, the square root of average variance extracted (AVE) of the variables is entered, and in order to confirm the divergent validity, this value must be more than the correlation between that variable and other variables (Davoudi and Rezazadeh, 2013; Habibi and Adnour, 2017).

Table 1. *Qasemi Seven-pronged Communication Skills Questionnaire (2017) in English*

Skills	Items	No
Writing Skill	1-3	3
Speaking Skill	4-6	3
Listening Skill	7-9	3
Reading Skill	10-12	3
Body language proficiency	13-15	3
the use of daily and modern communication means	16-18	3
Observation Skill	19-21	3

In data analyzing section, the data was analyzed using descriptive statistics (frequency and frequency percentage) and inferential statistics. In inferential statistics section, in order to ensure that the data are appropriate, the Kaiser-Meyer-Olkin measure of sampling adequacy (KMO), and Bartlett's Test of Sphericity was used to determine the correlation between variables (items). Furthermore, the first and second order confirmatory factor analysis method has been used based on the structural equation modeling for surveying and verifying the subscales, in other words, verifying the validity of the construct (factor) of the questionnaire. Confirmatory factor analysis method is one of the valid scientific methods for measuring the validity of structure of the research mean, which evaluates the factor load and relationships between a set of indicators and factors. The factor load represents the correlation of the indexes with the relevant factor and is interpreted as any other correlation. In this section, the indexes related to the variables of the research which are shown based on the results of the factor analysis, are tested. Confirmation or rejection of the factor loads is performed with respect to the significant numbers of t (t-value). The relationship is confirmed (at a level of error of 0.05), provided the value of t is greater than (1.96) or smaller than (-1.96), which will respectively be a significant positive relationship and a significant negative relationship. Indexes the factor loadings of which are less than

0.3, or their statistics are smaller than the absolute value of 1.96, are indicative of the weakness of that indicator and are omitted from the measurement model (Hooman, 2016). In this research, SPSS and IMOS software, version 23 were used to analyze the data.

Findings/Results

In Table 2, the results obtained from the demographic characteristics of the research samples have been reported. According to the results of Table 2, the majority of research samples were in the range of 31-40 years old (86 individuals, 45.3%) and 20-30 years old (63 individuals, 33.2%), and in terms of education, 89 individuals (46.8%) had a master's degree and individuals 69 (36.3%) had a Ph.D. degree.

Table 2. *Demographic Characteristics of Research Samples*

Demographic characteristics		Frequency	Frequency Percentage
Age	20-30 years	63	33/2
	31-40 years	86	45/3
	41-50 years	31	16/3
	51-60 years	6	3/2
	61-70 years	4	2/1
Gender	Male	109	57/4
	Female	81	42/6
Education	B. A.	32	16/8
	M. A.	89	46/8
	Ph. D.	69	36/3
Scientific Level	Student	69	36/3
	Instructor	54	28/4
	Assistant Prof.	19	10
	Associated Professor	4	2/1
	Professor	9	4/7
	Other	35	18/4

According to the results of Table 3, the KMO value obtained is 0.782. This value indicates that the number of research samples is sufficient for factor analysis and it is possible to conduct confirmatory factor analysis for the desired data. Also, the results of the Bartlett test (Sig = 0.001, $X^2=1176/536$) indicate that there is a high correlation between the points. Then, by using confirmatory factor analysis, the validity of the structure of the communication skills questionnaire was surveyed.

1 **Table 3. The Results of the Bartlett's Test and KMO**

KMO		0/782
Bartlett's test	X2	1176/536
	Degree of Freedom	210
	Significance Level	0/001

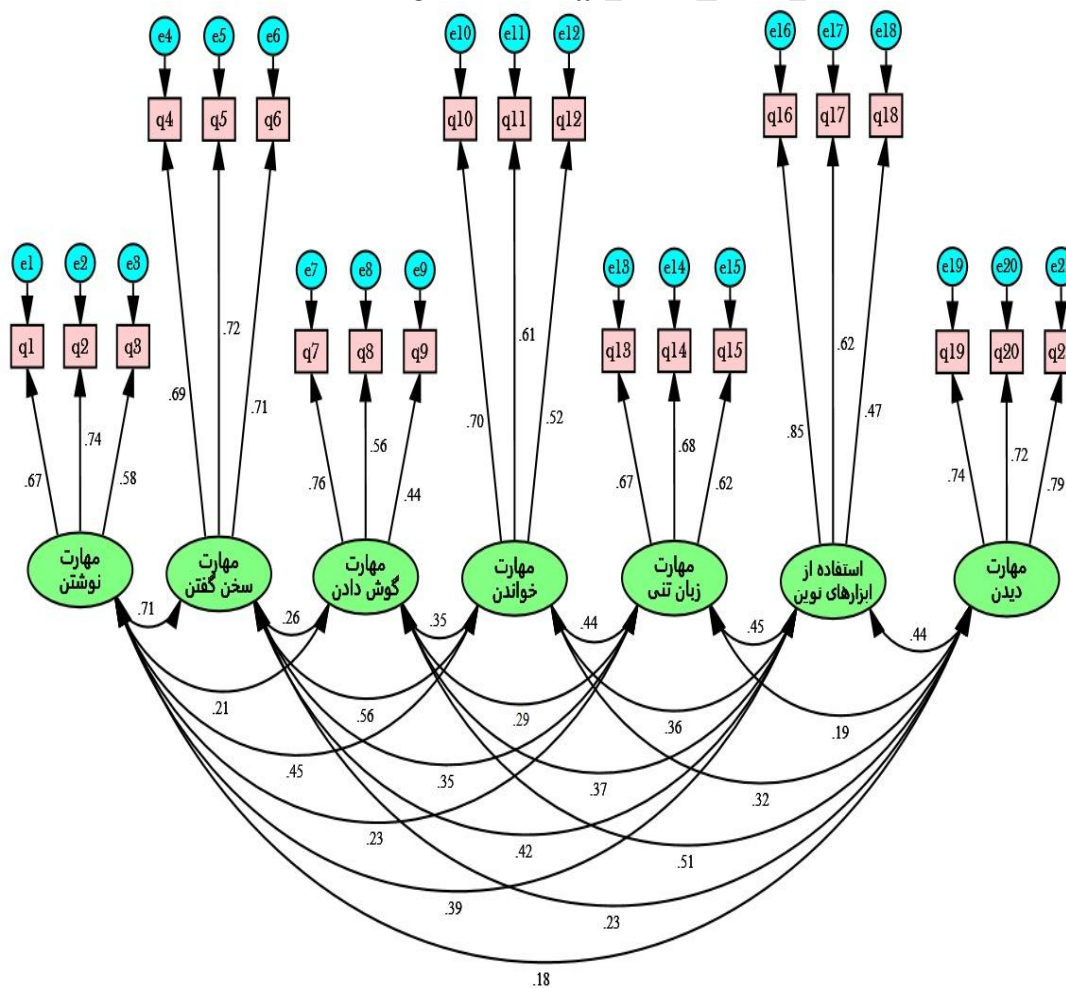
2
3 Table 4 and Figure 1 are presented in the model of the communication skills
4 questionnaire on the relationship between the items with the components. As you
5 can see, all factor loads and the value of t of the items in the components (writing
6 skills, speaking skills, listening skills, reading skills, body language proficiency,
7 the use of daily and modern communication means, observation skills) enjoy
8 acceptable values (The value of t is greater than the absolute value of 1.96 and the
9 factor load is greater than 0.3). Accordingly, it can be said that the observed
10 variables (units) can predict their own factors. Fitted indexes are related to factor
11 analysis of the first order of the questionnaire.

12
13 **Table 4. Confirmatory Factor Analysis of the First Order of Communication Skills**
14 **Questionnaire**

Skills	Items	Item no	Load Factor	t value
Writing skill	I have no trouble writing and I write all my letters and messages myself if need be	q1	0/674	-
	I often receive my letters and messages as I expect	q2	0/740	7/190
	I enjoy writing	q3	0/585	6/326
Speaking skill	During talks I can convince others very well	q4	0/686	-
	In different groups, I put forth my own words without embarrassment.	q5	0/716	7/768
	Generally, others tell me that I am good at speaking.	q6	0/713	7/748
Listening skill	I carefully listen to others.	q7	0/757	-
	I do not interrupt the person I am speaking until s/he has finished	q8	0/562	5/354
	I enjoy listening more that I enjoy speaking.	q9	0/441	4/585
Reading skill	I enjoy reading.	q10	0/696	-
	I prefer to read in order to increase my knowledge.	q11	0/610	5/827
	I can read very quickly	q12	0/516	5/274
Body language Proficiency	I use my facial gestures during speaking to emphasize my words.	q13	0/670	-
	I use my hands during speaking to emphasize my words	q14	0/680	6/344
	I often can let others know what I	q15	0/615	6/098

	mean without talking and only by eye-contact and body gestures			
use of daily and modern communication means	I have the ability to send and receive messages through a variety of mobile communication channels.	q16	0/853	-
	I have the ability to use computers and major software programs for my daily activities.	q17	0/618	6/756
	I often share my views with others on social media.	q18	0/466	5/444
Observation skill	I notice details when I look at pictures.	q19	0/745	-
	In my observations, I often see things that surprise others.	q20	0/721	8/565
	I enjoy paying attention to observable details.	q21	0/789	8/940

Figure 1. Factor Analysis Results of the First Order of the Communication Skills Questionnaire (Standardized Regression Coefficients)



In Table 5, the results of Fitness of measurement model of the first-order of the communication skill questionnaire have been reported. All values of Good Fitness Indexes (GFI) and Comparative Fitness Index (CFI) as the main indexes fitted above 0.9 were indicative of optimal fit of the model. Other fitness indicators (AGFI, NFI, IFI) also have acceptable values. Finally, based on the root average of the residual quadratic root (RMR = 0.047) and the second root of average of square error estimate (RMSEA = 0.053), the model can be adequately fitted. In the following, coefficients and indexes related to composite reliability, Cronbach's alpha and convergent and divergent validity of the research mean have been reported.

Table 5. *Fitness Index of Measurement Model of Ghasemi Seven-pronged Communication Skills Questionnaire (First - order Factor Analysis)*

Fitting Indices	optimum	Indices Values	Result
K2	-	262/879	-
df	-	168	-
χ^2/df	Less than 5	1/565	Appropriate
GFI	More than 0/9	0/905	Appropriate
AGFI	More than 0/8	0/845	Appropriate
RMSEA	Less than 0/1	0/055	Appropriate
RMR	Less than 0/05	0/045	Appropriate
CFI	More than 0/9	0/927	Appropriate
NFI	More than 0/9	0/916	Appropriate
IFI	More than 0/9	0/930	Appropriate

According to the results of Table 6, the Cronbach's alpha values and the composite reliability (CR) of all variables are higher than 0.7. Indicate internal consistency and proper internal consistency of the research model is the first factor in communication skills. More, considering that the value of average variance extracted (AVE) in all variables were greater than 0.4. Further, the appropriateness of convergent validity was confirmed.

Table 6. *Survey on the Reliability Coefficients of the Seven Factor Model of Communication Skills Through Confirmatory Factor Analysis*

	α	CR	(AVE) ²
Writing Skill	0/798	0/807	0/548
Speaking Skill	0/847	0/848	0/666
Listening Skill	0/710	0/718	0/461
Reading Skill	0/721	0/739	0/474
Body language proficiency	0/790	0/739	0/530
the use of daily	0/757	0/792	0/542

and modern communication means			
Observation Skill	0/894	0/896	0/666

To evaluate the divergent validity of the model, the Fornell and Larcker Matrices were used. In the main diameter of these Matrices, the root square of average variance extracted (AVE) of the variables is entered and in order to confirm the divergent validity, this value is more than the correlation between that variable and the other variables. Table 7 of Fornell and Larcker Matrices is used to assess the divergent validity of the communication skills questionnaire measurement model. According to the results of Table 7 and based on values of the square root extracted of all values, as can be seen, the correlation between each component (structure) and other variables is indicative of a proper divergent validity and confirmation of the verifiable factor analysis model.

Table7. *Comparative Matric of Square Root of AVE and Convergent Coefficients of Variables*

	Writing	Speaking	Listening	Reading	Body language	use of communication means	Observation
Writing	0/669						
Speaking	0/612	0/705					
Listening	0/213	0/258	0/601				
Reading	0/445	0/556	0/353	0/612			
Body language	0/225	0/351	-0/088	0/438	0/656		
use of communication means	0/386	0/418	0/372	0/361	0/450	0/665	
Observation	0/179	0/234	0/513	0/324	0/195	0/443	0/752

Then, in order to achieve a more precise factor structure, a second-order confirmatory factor analysis method was used. The purpose of this approach is to achieve a more significant method than the data. In these models, it is assumed that the variables themselves in the common variance are resulted from one or more higher order factors; in other words, the second order factors are factors of the first order. This method is used to study the Fitness of the factor structure of the questionnaire and confirm the existence of constructive components, or related research (Klein, 2015).

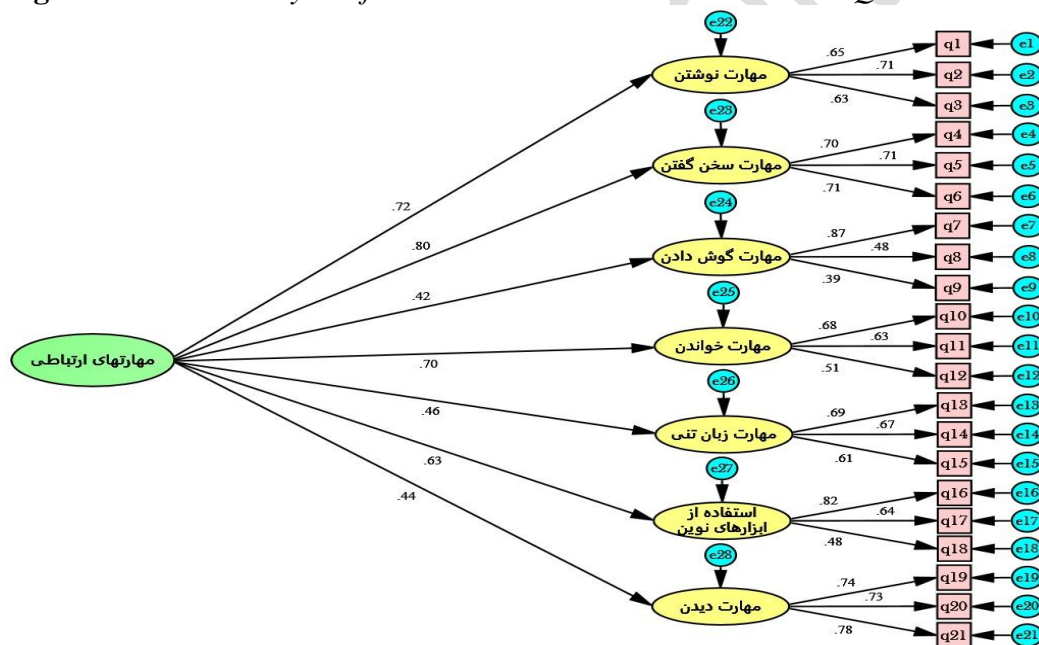
The results of Table 8 and Figure 2 show that the communication skills measurement model is appropriate and all t values are less than 0.05 and factor load factors are significant. In sum, based on the results of the first and second

factor analysis, we can say that the questionnaire has a good and acceptable validity and reliability in the community under study.

Table 8. Factor Analysis of Second-order Communication Skills Questionnaire

	path		Loading Factor	T value
Communication Skills	--->	Writing	0/716	-
Communication Skills	--->	Speaking	0/797	4/980
Communication Skills	--->	Listening	0/421	3/784
Communication Skills	--->	Reading	0/699	4/606
Communication Skills	--->	Body language	0/461	3/677
Communication Skills	--->	use of communication means	0/633	4/783
Communication Skills	--->	observation	0/442	3/831

Figure 2. Factor Analysis of Second-order Communication Skills Questionnaire



The values of fitness indicators of the second-order measurement model of the second-level communication skills questionnaire indicate that the fitness indicators are suitable and appropriate for fitness, thus the fitness and desirability of the measurement model.

Table 9. *Fit Index of Measurement Model of Communication Skills Questionnaire (Second order Factor Analysis)*

Fitting Indices	optimum	Indices value	Result
K2	-	320/212	-
df	-	182	-
χ^2/df	Less than 5	1/759	Appropriate
GFI	More than 0/9	0/901	Appropriate
AGFI	More than 0/8	0/826	Appropriate
RMSEA	Less than 0/1	0/063	Appropriate
RMR	Less than 0/05	0/047	Appropriate
CFI	More than 0/9	0/914	Appropriate
NFI	More than 0/9	0/909	Appropriate
IFI	More than 0/9	0/918	Appropriate

Discussion

Recognition of the communication skills of individuals and influencing them, in order to achieve the goals, is a fundamental issue in the research of human behavior. Hence, learning the effective ways of talking and communicating is important in three aspects: first, there are some people and businesses that communication with them is important (professors and students). Professors' skill in effective communication directly influences their performance. Secondly, the inability to establish constructive communication is one of the main components of mental disorders and discomforts. Thirdly, each person's success in life is defined in terms of reaching goals that are determined by his occupational, social, family and personal affairs. The success of professors, teachers, trainers, and all people in relation to the student, depends on the ability to realize and making a powerful and stable effect. Therefore, it is necessary to examine the communication skills between professors and students.

The results showed that the model of the communicative skills questionnaire has fitness and suitable proportion. Based on the results, all factor load and t value of the items in the components (writing skill, speaking skills, listening skills, reading skills, body language, the use of daily and modern communication means, and observation skills) are of acceptable value. Also, all values of Good Fitness Indexes (GFI) and Comparative Fitness Index (CFI) as the main indexes of Fitness above 0.9 were indicative of optimal fit of the model. Other fitness indicators (AGFI, NFI, IFI) have acceptable values as well. Finally, based on the residual quadratic root (RMR = 0.047) and the second root of average of square error estimate (RMSEA = 0.053), it can be said that the model of Qasemi Seven-pronged Communication Skills Questionnaire has a good fitness and construct validity. It should be noted that the use of Iranian students and professors abroad to fill this questionnaire for the first time in Iran has been analyzed and the validity and reliability of the Qasemi communication skills questionnaire have been

1 analyzed, which can be regarded as a strong point. The results are consistent with
 2 the findings of Ghasemi et al (2014) that in their research showed that the skills of
 3 writing, speaking, listening, reading, body language, and the use of everyday and
 4 modern communication means were identified as sextet communication skills,
 5 while in this study the observation skills, as the seventh skill, was added to
 6 Ghasemi and his colleagues previous sextet questionnaire. The results also showed
 7 that the 7th questionnaire had the necessary fit and proper fit. Considering the fact
 8 that this research was carried out in Iran and this research was carried out among
 9 students and professors abroad, however, in both societies, a desirable fit of the
 10 questionnaire was confirmed, which shows that in addition to the cultural
 11 differences, this questionnaire has the capability of validity, reliability and
 12 validation of communication skills among individuals.

13 In order to achieve a more precise factor structure, second order confirmatory
 14 factor analysis method was used. The values of fitness indexes of second-order of
 15 the Seven-pronged communication skills model among the statistical population of
 16 the research, as well as the first-order, indicate the acceptability and excellence of
 17 fitness indicators and, consequently, the accuracy and appropriateness of the
 18 model of measurement. The t values of the relationship between subscales with
 19 higher factors than themselves are all higher than two, which indicates a
 20 significant relationship between them, such that the subscale of speaking skills
 21 with factor load of 0.779 and t value 4.980, in prediction of communication skills,
 22 were identified as the most important predictor variable, then, the writing skills
 23 with the factor load of 0.716, reading skill with the factor load 0.699, skill to use
 24 factor load communication means 0.633, body language skills with factor load of
 25 0.496, observation skills with factor load of 0.442, and finally, listening skills with
 26 a factor load of 0.421 were assigned to the next priorities. . In sum, based on the
 27 results of the first and second factor analysis, we can say that the communication
 28 skills questionnaire has a good and reliable validity and reliability in the
 29 community under study. The values of fitness indexes of the second-order
 30 measurement model of communication skills questionnaire, like the first order,
 31 indicate that the fitness indicators are acceptable and suitable for fit, thus, the
 32 fitness and desirability of the measurement model. In this regard, Nalan and Novin
 33 (2014), in their research, developed and validated the CSS communication skills
 34 scale for professors of students and used second-order confirmatory factor analysis
 35 as well. According to their results, based on the confirmatory factor analysis of the
 36 second-order validation model of fitness-related communication skills
 37 questionnaire enjoy the fitness. However, in the present study, it enjoys the seven
 38 required factors for the validity of the model's fitness; or what is found by Nazari
 39 et al model (2015) in its research, suggests that in the mentioned communication
 40 skills factor of the model, the importance of the said domain respectively include
 41 feedback skill, verbal and auditory skills. In this research, speaking skills were
 42 recognized as the most important predictor of communication skills. Perhaps a
 43 different statistical society in this research has caused inconsistencies in this
 44 matter. This is while the concept model of communication skills Bathon Jay

(1990) has introduced communication skills based on the priority of verbal, auditory and feedback effectiveness, which is consistent with the results of this research.

Hence, by virtue of these results, the most important and common social and communication skills which is used to explain and express the message with the word among students and professors abroad are verbal skills, in other words, speaking skills. The relations that come from talking and speaking are called verbal communication. Speaking is the first technique or art by which the human can affect others. The language is somehow as the best and most complete means of speaking and also as a complete system of conventional symbols of audio and expression that is used by the human to connect and share experiences, and is the only means of transmitting information and thoughts and demands of individuals in relation with the people (Hasanpour et al, 2014). What to say (content) and how to say (process) is very influential in the verbal communication process. Because students and professors interact with each other with their words and make others aware of their motives, feelings and thoughts. In addition, the exchange of information is the most important goal that humans reach by talking about it. Although word is not the only source of communication, it is vital in its scope. Also, if the ability of other skills, such as writing, seeing, reading, etc. is also valued as high, it means that the person evaluates himself to be able to communicate effectively. In other words, we can say that the above aspects can be much valuable to students and professors to become aware of their strong points and weak points by these aspects. So, as the results showed, the communication skills questionnaire obtained in seven indexes enjoy acceptable values. As a result, professors and students need to pay attention to such issue while carrying out a research. In general, communication skills between professors and students are very important. Based on the results of this study, it has been shown that in addition to these communication skills for dialogue and discussion, this questionnaire can be used as the appropriate means for the validation of communication skills. The results not only examine communicative skills for conversation and negotiation, but also examine and identify the factors of communication skills. This assessment also measures non-communicative communication skills that are very important for communication. Therefore, this questionnaire covers the main factors of communication skills.

The results of the research in validity section indicated that according to the confirmatory factor analysis on the basis of structural equation of the Seven-pronged Communication Skills Questionnaire, the reliability of the questionnaire was confirmed. Also, given that the value of average variance extracted (AVE) in indexes of speaking skill (0.666), listening skill (0.441), reading skill (0.474), body language skill (0.530), observation skill (0.666), using daily and modern communication tools (0.542) and writing skill (0.548) is greater than 0.4 in all variables, the fitness of convergent validity is also confirmed and certified. In order to study the divergent validity of the model, the Fornell and Larcker matrices were used which, based on values of the square root of average variance extracted

(\sqrt{AVE}), all values are greater than the correlation of each component (structure) with other variables, which indicates the appropriate divergent validity and confirms the confirmatory factor analysis model. Ghasemi et al. (1393), by implementing the confirmatory model of the communication level questionnaire, determined that all the extracted factors have a high validity and, moreover, we should report that it is the best reflection of the sextet communication skills of writing skills. Also, the results of the model fitness indicate an appropriate fit for the communication level questionnaire. Part (2014) also validated the communication skills questionnaire (CSQ) and showed that the convergent validity of the questionnaire was significant in all evaluations and showed that it has high psychometric status. In 2019, Onler et al. (2011) assessed the communication skills among 179 employees and obtained 0.89 for reliability of questionnaire. Takashi et al. (2006) showed that the communication skills questionnaire had the necessary validity. Sadat Shariatzadeh et al. (1394), in their research, indicated 87.5 for the average content validity for the whole form of evaluation of communication skills and 87.25% for the average nominal validity for the whole form respectively.

The results in the final section of reliability showed that Cronbach's alpha and composite reliability (CR) of all variables were higher than 0.7, indicating that the internal compatibility and internal consistency of the research model were the factor of first-order communication skills. Such that its values in subscales were respectively 1. Speaking skills (0.847) (0.847), 2. Listening skills (0.710) (0.718), 3. Reading skills (0.721) (0.739), 4. body language skill (0.790), (0.793), 5. Observation skill (0.894) (0.896), 6. Using modern communication tools (0.775) (0.792), and 7. Writing skills (0.779) (0.807). In this scope, Takashi et al. (2006) showed that the reliability of the communication skills questionnaire based on the Cronbach's alpha coefficient was 0.91-0.97 and through the retest was between 0.90 and 0.95, which is necessary for reliability. In Part's research (2009), the reliability of the questionnaire based on the Cronbach's alpha coefficient was 0.96; the validity and reliability coefficients were tested with a re-test between 0.6 and 0.7. Nalan and Novin (2014), who developed and validated the CSS communication skills scale for professors of students, showed that the reliability of the whole scale of the questionnaire was high, indicating the homogeneity of the scales, and a valid and reliable tool for assessing all communication aspects in emotional, cognitive and behavioral aspects. Sadat Shariatzadeh et al. (1394) obtained reliability of the communication skill questionnaire based on Cronbach's alpha coefficient of 0.93. In a study by Onler et al. (2018), the reliability of the questionnaire was assessed based on the Cronbach's alpha coefficient of 0.80.

Conclusion

In general, the results showed that the results of factor analysis of the communication skills questionnaire from fitness indicators, Cronbach's alpha

coefficients, convergent validity, and acceptable divergent validity, indicate the validity and reliability of this questionnaire among the professors and students abroad. Therefore, Ghasemi Seven-pronged Communication Skills Questionnaire can be used as a valid and reliable tool for studying and evaluating communication skills at different levels. This questionnaire clearly shows that it has high structural and content validity and is a suitable tool for measuring the communication skills. Considering the direct relationship between the validity of the findings of each study and the validity status of the research tool, the need for more attention of researchers to this issue will be more sensitive. In addition, the results show that this questionnaire can be used in the initial assessment for different communication skills and can provide important information about student communication skills with professors. A combination of these indicators may also provide some information about the recognition of communication skills. It is suggested that this questionnaire be used as a permanent tool in measuring the communication skills questionnaire among students and professors and in order to improve the communication skills, we can use video tapes or training classes where standard skills is taught to resolve the weak points, because communication skills training plays an important role in improving mental health of students. It is expected that the training will take on the level of the university cause learning these trainings, in addition to promoting mental health, leads to doubling the responsibility of the specialized and semi-specialized man powers against what they are learning. Therefore, the function of the university is not limited to the transfer of knowledge to become limited to training, but one of its functions is human education. It means that, the university is an educational environment that can also be effective in culture. Finally, since the knowledge of the system of organizational communication is important, managers must gather information about their university communication system and by using this information, they can solve their communication problems and improve the organization's communication system and eventually make effective and workable communicating solutions. It is suggested that training the interpersonal communication skills which involves more than several systematic skills in management – and in this research only seven were pointed out- get included in the agenda of the university's educational programs. Certainly, many factors affect the level of communication skills of students and professors. Their views and ideas, personal and family characteristics, the level of relationships with peers and friends, and the socioeconomic status and propaganda can be the examples. Since proper communication skills in students and professors are considered as a basic and special need and they form the lifestyle of their lifetime; therefore, taking into account the above issues, we should, in theoretical and practical educational programs of universities, emphasize on the importance of learning and applying these skills as well as the possible complications of not being familiar with them for students and professors.

1 Funding

2
3 The author(s) received no financial support for the research, authorship,
4 and/or publication of this article.

7 References

- 8
9 Ahmadi, M., Hatami, H., Ahadi, H., & Asadzadeh, H. (2014). A Study of the Effect of
10 Communication Skills Training on the Female Students' Self-efficacy and
11 Achievement. *Quarterly Journal of Research in the New Approach in Educational*
12 *Management, Islamic Azad University of Marvdasht*, 4(4), pp 105-118.
13 Arslan, E (2010). Analysis of communication skill and interpersonal problem solving in
14 preschool trainees. *Social Behavior and Personality: an international journal*
15 *(Scientific Journal Publishers)*. 38(8): pp 523-530.
16 Bakhshayesh, M. (2008). Presentation of competency models of managers of water and
17 wastewater companies and investigating the relationship between competencies and
18 their performance. M.A. Thesis, Executive management, Management faculty of
19 University of Tehran.
20 Davoudi, A., & Rezazadeh, A. (2013). *Structural Equation Modeling with PLS software*,
21 Tehran, Iranian student book agency.
22 Eğribayun., M (2017) The Perceptions about Communication Skills and Job Motivation:
23 A Case Study, *Management* 2017, 7(4): pp 137-146
24 Farhangi, A. (2004). *Foundations of human communication*, Tehran: Tehran Times
25 Association.
26 Ghasemi, H., Keshkar, S., Izadparast, L., & Talaei, R. (2014). Validaty and reliability
27 determination of of Six-pronged Communication Skills Questionnaires, *New trends*
28 *in sport management*, 2(6), pp 99-109.
29 Habibi, A. , & Adnour, m. (2017). *Structural Equation Modeling and Factor Analysis*
30 *(Liserl Applied Training)*. Tehran, Iranian student book agency.
31 Hargie, Q.. & Dickson, D. (2004). *Skill interpersonal communication*. London:
32 Routledge.
33 Hossein pour, J. et al (2017). The relationship between communication skills and
34 interpersonal relationships of sport managers in Guilan province, *Journal of sport*
35 *management and development*, 2(5), 91-104.
36 Housman, H (2016). *Structural Equation Modeling Using Lisrel Software*, Samt
37 publication
38 Jafar Zanjani, H., Akbari, H., & Horri, S. (2009). 360 Degree Assessment, A Successful
39 Method in Determining the Competencies of a Manager (Case Study: Islamic Azad
40 University of Naragh Branch). *Journal of Beyond Management*, 2 (8), pp 93-118.
41 Kline, R. B. (2015). *Principles and practice of structural equation modeling*. Guilford
42 publications.
43 Moss, E., Rousseau, D., Parent, S., St-Laurent, D., & Saintonge, J. (1998). Correlates of
44 attachment at school age: Maternal reported stress, mother-child interaction, and
45 behavior problems. *Child development*, 69(5), pp 1390-1405.
46 Mousavi, Z. (2015). Effectiveness of Communication Skills Training on Low Self-
47 Esteem, Resilience and Self-efficacy in Adolescents of Amol, M.A. thesis

- 1 Nalan., A &, Nevin., A (2014) DEVELOPMENT AND VALIDITY-RELIABILITY
- 2 STUDY OF COMMUNICATION SKILLS SCALE FOR STUDENT TEACHERS:
- 3 SUGGESTION OF AN ALTERNATIVE MODEL. *Electronic Turkish Studies* .
- 4 Summer2014, Vol. 9 Issue 8, p111-132. 22p
- 5 Onler ., Ebru, Tülin Yildiz, Semiha Bahar (2018) Evaluation of the communication skills
- 6 of operating room staff. *Journal of Interprofessional Education & Practice* 10 (2018)
- 7 44e46
- 8 PereiraI Thas Josgrilberg, Ana Claudia PugginaI (2017) Validation of the self-assessment
- 9 of communication skills and professionalism for nurses, *Rev Bras Enferm* [Internet].
- 10 2017 mai-jun;70(3):588-94.
- 11 Prat Psychiatry Res. G (2014) Validation of the Communication Skills Questionnaire
- 12 (CSQ) in people with schizophrenia. 2014 Dec 15;220(1-2):646-53. doi:
- 13 10.1016/j.psychres.2014.06.036. Epub 2014 Jul 11.
- 14 Rahmzadeh, S. A., & Najafi Niasar, T. (2013). Study of the Relationship between
- 15 Communication skills of Vali-e-asr Tehran Technical College teachers with their
- 16 Educational Effectiveness, *Media Studies Journal*, 8(23), pp 185-198.
- 17 Razeghi, A., & Chari, H. (2007). The Effect of Identity Situations on Communication
- 18 Skills in Nomadic and Urban High School Students, *Journal of Research in*
- 19 *Educational Systems*, pp 27-52
- 20 Sabzi, N.,& Yousefi, F. (2014). A Study of the Scientific Pattern of Social Intelligence,
- 21 Emotional Self-Efficacy and Communication Skills. *Psychology Magazine*, 18(2), pp
- 22 209-225.
- 23 Sadat Shariat Zadeh, N., Tabatabai, S. M., & Bahador, H. (2015). Development of
- 24 communication skill assessment tool (Persian-version) for undergraduates of
- 25 Rehabilitation Therapy based on Carkhuff's model, *Scienific journal of rehabilitation*
- 26 *medicine*, 4(4),pp 49-56.
- 27 Shamsudin, M. F., Chuttipattana, N. (2012). Determinants of managerial competencies for
- 28 primary care managers in Southern Thailand. *Journal of Health Organization and*
- 29 *Management*, Vol. 26 No. 2, pp. 258-280.
- 30 Takahashi M, Tanaka K, Miyaoka H. (2006) Reliability and validity of communication
- 31 skills questionnaire (CSQ). *Psychiatry Clin Neurosci*. 2006 Apr;60(2):211-8.
- 32 Vakili, M. et al (2012). Designing and Psychometrics of Interpersonal Communication
- 33 Skills Assessment Tool in Health Interviewers' Population of Zanjan, Faculty of
- 34 Nursing and Midwifery, Tehran University of Medical Sciences, pp 18- 5-19
- 35 Wadongo, B., Kambona, O., Odhuno, E. (2011). Emerging critical generic managerial
- 36 competencies a challenge to hospitality educators in Kenya. *African Journal of*
- 37 *Economic and Management Studies* Vol. 2, No. 1, pp. 56-71.