

Measuring Emotional Intelligence: A Case in Korea

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This paper describes an exploratory attempt to establish construct validity of a test that measures emotional intelligence. Based on the existing literature, emotional intelligence is hypothesized as a multi-dimensional construct composed of five subconstructs. An instrument was developed to measure emotional intelligence. The processes of construct validation including a reliability check and a statistical analysis on the underlying dimension of the 47 items are explained. The findings confirm that emotional intelligence is a multi-dimensional construct that requires subtests to cover separate sub-dimension. The study also provided an empirical evidence to the argument that emotional intelligence is highly close to inter- and intra-personal intelligence, subsets of multiple intelligence.

I. Meaning of Emotional Intelligence

Emotional intelligence refers to an ability to recognize emotions in oneself and others and to use the emotional perception to create appropriate thinking and actions. Salovey and Mayer (1996) recently presented a more refined definition of emotional intelligence.

Emotional intelligence involves the ability to perceive accurately, appraise and express emotion; the ability to access and/or generate feelings when they facilitate thought; the ability to understand emotion and emotional knowledge; and the ability to regulate emotions to promote emotional and intellectual growth.

This revised definition illuminated an importance of emotional knowledge. Emotional knowledge is an ability to understand emotions in a specific context. It can also mean the ability to understand that people can have complex, and sometimes contradictory emotions. *Emotional intelligence is an ability to have the emotional knowledge to solve problems.* In this sense, emotional intelligence is a very similar to Gardner's personal intelligence that refers to an ability to monitor moods and temperaments and to enlist such knowledge into future behavior.

We can gauge emotional intelligence through people's action or accomplishment. For example, a homework assignment is due tomorrow. Some students managed to complete the homework, while others were so reluctant that they finally gave up. Those who manage to regulate their emotions to complete the task are found to have a high level of emotional intelligence. A person who has difficulty regulating emotion and often makes disruptive behavior with others as well as himself, is found to have a low level of emotional intelligence.

Conceptual framework

The term 'emotional intelligence' was coined by two scholars. John Mayer, a psychology professor at University of New Hampshire University and Peter Salovey at Yale University. The authors published an article titled "Emotional intelligence" in 1990. In the article, Mayer and Salovey explained emotional intelligence as a set of skills hypothesized to contribute to the accurate appraisal and expression of emotion in self and others and the use of feelings to motivate, to plan, and to achieve a purpose. Based on the definition, the authors presented a conceptual framework of emotional intelligence (Fig. 1). The conceptual framework of emotional intelligence is explained in Table 1.

Daniel Goleman (1995) also provided a useful framework for understanding the subdimensions of emotional intelligence. He presented five elements of emotional intelligence: self-awareness, self-management, self-motivating, empathy, and social skill. The first three are related to intra-personal emotions and the other two to inter-personal emotions.

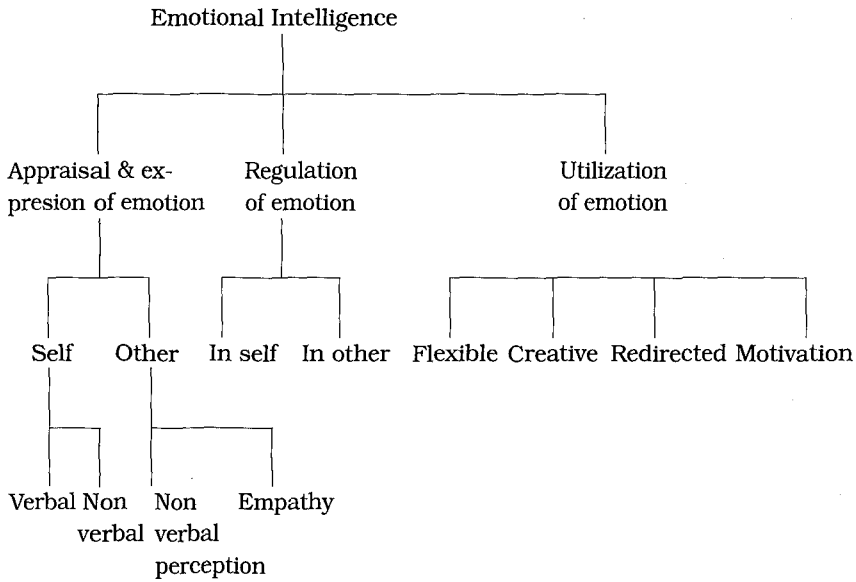


Figure 1. Conceptualization of Emotional Intelligence (Adopted from Salovey & Mayer, 1990)

II. Measuring Emotional Abilities

Researchers recently have made attempts to quantify emotional abilities as they have done with IQ. In these days, human intelligence is measured through various IQ tests. We label those who scored 100 or higher on these IQ tests ‘smart’ whereas we are concerned about those whose score is below 70. However, attempts to measure emotional intelligence are still in its infancy for three reasons.

First, the existing literature on emotional intelligence implies numerous subdimensions and the relationships among the subdimensions are highly complicated, which does not permit linear addition of scores from a few subtests.

Second, IQ tests have answers that are right or wrong, whereas emotional intelligence tests have either right or wrong answers. Emotional intelligence tests should measure the ability to regulate emotions and feelings, which cannot be adequately assessed through pencil-and-paper test or self-report measures.

Table 1. Domains of Emotional Intelligence

Emotional Appraisal & Expression	Verbal Appraisal & Expression (self)	Ability to understand what we are feeling and to communicate those feelings in words. This domain specifically refers to an ability to monitor and express one's own feeling verbally.
	Nonverbal (self)	Ability to communicate what we feel via nonverbal cues such as facial expression and body language. There exist individual differences in the ability to perceive one's own feelings accurately. Those who are good at perceiving one's own feelings accurately can sense other's emotions, too.
	Nonverbal (others)	Ability to perceive emotions in others. The perceptual ability insures smoother interpersonal cooperation. It is believed that individuals differ in their ability to interpret emotions through facial expression accurately.
	Empathy	Ability to comprehend another's feelings and to re-experience them oneself. Empathy is believed to be a central characteristics of emotionally intelligent behavior.
Emotional Regulation	Self	Ability to regulate emotions in self and to reinforce the mood states so that they are most adaptive for the task or situation at hand.
	Others	Ability to regulate and alter the affective reactions of others. Emotionally intelligent people are highly adept at regulating others' feelings to meet particular goals. On the positive side, they may motivate others charismatically toward a worthwhile end. This ability can be used for nefarious ends to manipulate people into crimes.
	Flexible planning	Ability to generate a larger number of future plans for themselves and thereby be better prepared to take advantage of future opportunities.

Table 1. continued

Emotional Utilization	Creative thinking	Ability to maintain positive feelings and thus to facilitate creative thoughts and actions. Research shows that people experiencing a positive mood are more likely to give highly unusual or creative behavior.
	Mood directed attention	Ability to redirect attention from an ongoing problem into a new one of greater immediate importance. Affect can help individuals to reprioritize the internal and external demands on their attentions, and allocate attentional resources accordingly.
	Motivating emotions	Ability to motivate persistence at challenging tasks. Some individuals can channel the anxiety created by evaluative situations to motivate them to prepare more thoroughly and attain higher level of performance

Third, a single score is the last thing we would want from a emotional intelligence test. There have been serious concerns over the quantification of emotional intelligence into a single number. Emotional intelligence is a multi-faceted construct. A person can be high in perseverance but low in passion and courage. No single score can provide a complete description on a person's emotional intelligence. We need to understand strength and weakness of emotional intelligence in a variety of aspects. For this, a profile approach might be needed.

For these three reasons, it is difficult to measure and quantify emotional intelligence. It is also unlikely that we see a single, valid emotional intelligence test in the near future. However, there appeared a series of attempts to measure sub-dimensions of emotional intelligence—delay of gratification, degree of optimism, impulsiveness, ethics, perseverance, persistency, interpersonal relationship, etc. In addition, instruments to measure such skills as empathy, recognition of facial expression, emotional regulation are under development. Mayer and Salovey (1995) developed Trait Meta-Mood Scale (TMMS) and State Meta-Mood Scale (SMMS) to measure expression and recognition of emotions. Robert Rosenthal, a professor at Harvard University,

created Profile of Nonverbal Sensitivity (PONS) to measure empathy skills. Recently, Daniel Goleman, author of a book called *Emotional Intelligence*, published a test measuring for emotional intelligence quotient.

III. Developing an EI Test for Korean Students

Test development

The Educational Research Institute at Seoul National University carried out a project to develop a test on emotional intelligence (EI). As noted in the earlier section, EI is a multi-dimensional construct. We adopted Mayer and Salovey (1990)'s theoretical conceptualization of EI, which listed three dimensions—emotional appraisal and expression, emotional regulation and utilization and subdimensions attached to the main dimensions. Subdimensions in the EI test and the number of items for each subconstruct are listed in Table 2. A total of 47 items were prepared to measure nine subdimensions of emotional intelligence. A copy of the EI test is attached in Appendix 1.

The test development process involved three phases—pilot test (May 1996), pretest (July 1996) and standardization (October 1996). A pilot test was conducted to check for clarity and adequacy of items. The items were revised based on the pilot test

Table 2. Subtests of Emotional Intelligence

Dimensions	Contents	Subtest Name	No. of items
Appraisal & Expression	Emotional perception	EP	8
	Emotional expression	EE	7
Regulation	Empathy	EM	7
	Regulation on self	ER	8
Utilization	Regulation on others	ER	7
	Flexible planning	EU	3
	Creative thinking	EU	2
	Redirected attention	EU	2
	Motivation	EU	3
Total	9 contents	5 subtests	47

results. The revised test was administered to measure emotional intelligence of youngsters who are in grades 4-6 and 8.

Sample

Students in primary and middle schools located in Seoul and Kyunggi were selected to participate in the study. The sample included 123 students in grades 4-6 and 100 students in grade 8. The number of males and females in the sample were about the same.

Test administration

Students were asked to respond to questions on the EI test. Respondents were assured that there is no right or wrong answers and were asked to indicate their own feelings and thoughts.

Scoring

Each item of 4 subtests, EP, EE, EM, ER has three options except EU. The items of EU have two options. The options represented different levels of emotional intelligence, so that student who selected the first option scored 2; second option 1; and the third 0. But in the case of EU, first option scored; 1 and the second 0. For each item of subtests, EP, EE, EM, ER, students can score a maximum of 2 point and a minimum 0, and for each item of subtest, EU, a maximum of 1 point and a minimum 0. Since the number of item of subtests, EP, EE, EM, ER, was 37 and the number of item of EU was 10, students could get a maximum score of 84 $((37 \times 2) + (10 \times 1) = 84)$, and a minimum score of zero on the EI test.

IV. Data Analysis

Descriptive statistics

Student responses to the EI test were analyzed using the SPSS program. Table 3 shows that scores on each subtest are normally distributed with mean score being placed around the center of the possible score ranges and standard deviation amounting to 1/2 or 1/3 of the mean scores. The normal distribution of test scores indicates that the EI test is likely to

Table 3. Descriptive statistics of EI subtests

(n = 223)

Subtest	Mean	S.D	Lowest	Highest	Fullscore
Emotional Perception (EP)	11.47	2.91	2.00	16.00	16
Emotional Expression (EE)	8.51	2.93	.00	14.00	14
Empathy (EM)	8.05	2.98	.00	14.00	14
Emotional Regulation (ER)	18.27	5.54	3.00	30.00	30
Emotional Utilization (EU)	5.48	2.68	.00	10.00	10
Emotional Intelligence (EI)	51.80	11.71	19.00	81.00	84

have an adequate discriminating capability.

Relationship among the sub-domains of Emotional Intelligence

Table 4 reports correlation coefficients among EI subtests. The correlation coefficients ($|r|$) between EI subtests ranged from 0.06 to 0.56. The low to moderate level of correlation indicates that the subtests tend to be mutually independent. In other words, the EI subtests tap separate dimensions of emotional intelligence. This finding justifies construction of multiple subtests for EI. Emotional expression subtest, which registered lowest correlation coefficients with the four subtests, demonstrates that emotional expression is a distinctive aspect of emotional intelligence. The last column reports correlation between total test and subtests. The correlation coefficients between total and subtests were consistently higher than those among subtests, demonstrating strong regressing power to the total EI test.

It is noted that emotional regulation had the highest correlation with the total test ($|r|$.34~.87), followed by emotional perception, emotional utilization, empathy and emotional expression. It seems that emotional intelligence is largely affected by skills to regulate and perceive emotions. On the other hand, emotional expression, as with other subtests of EI, has

Table 4. Correlation coefficients among EI subtests

	EP	EE	EM	ER	EU	EI
EP	1.0000	.1640	.4177**	.5419**	.2736**	.7056**
EE	.1640	1.0000	-.0683	.0564	.1925*	.3445**
EM	.4177*	-.0683	1.0000	.5572**	.3716**	.6874**
ER	.5419**	.0564	.5572**	1.0000	.5168**	.8751**
EU	.2736**	.1925*	.3716**	.5168**	1.0000	.6918**
EI	.7056**	.3445**	.6874**	.8751**	.6918**	1.0000

(* = .01, ** = .001)

the lowest correlation with the total test.

Reliability

The internal consistency of the items in each subtest ranged from .66 (emotional expression) to .81 (emotional regulation). Considering the small number (7 to 15) of items in each subtest, the items seem to have adequate level of internal consistency. Of the five subtests emotional expression has lowest alpha coefficient. The fact that emotional expression has lowest internal consistency warns that the items may lack coherency.

Table 5. Cronbach's Alpha of EI subtests

Subtests	Alpha
Emotional Perception	.7338
Emotional Expression	.6617
Empathy	.6964
Emotional Regulation	.8138
Emotional Utilization	.7558
Total test	.8736

The internal consistency coefficient of the total test was .8736, which was higher than those of EI subtests. A test that has a reliability coefficient above .80 is considered to have a high level of reliability whose score can be used to make inferences about an examinee's ability or to make decisions that may significantly affect the examinee's future. Therefore, the EI test seem to meet the reliability standard. The item-total statistics communicate the level of contribution each item makes to the internal

Table 6. Item-total statistics

	Scale Mean If Item Deleted	Corrected Variance If Item Deleted	Corrected Item- Total Correlation	Squared Multiple Correlation.	Alpha If Item Deleted
AP1	50.2537	129.7883	.5008	.4810	.8686
AP2	50.0976	132.9708	.3208	.4642	.8715
AP3	50.1268	131.3466	.4410	.5567	.8698
AP4	50.1902	131.2725	.4172	.4509	.8700
AP5	50.1415	131.7691	.4021	.4929	.8703
EXP1	50.5902	136.7234	-.0137	.2682	.8780
EXP2	50.7707	135.3638	.0791	.3033	.8756
EXP3	50.6195	133.5310	.1612	.3947	.8748
EXP4	50.5902	133.2136	.1968	.3211	.8738
EXP5	50.5902	133.8509	.1743	.3950	.8740
EXP6	50.4244	133.1965	.2056	.4284	.8736
EXP7	50.6195	133.3153	.1902	.4186	.8739
AP6	50.6732	131.1917	.3405	.4108	.8711
AP7	50.9073	132.3492	.2514	.4013	.8728
AP8	50.5707	131.1089	.3605	.4178	.8708
EMPA1	50.3415	131.0691	.3494	.5229	.8709
EMPA2	50.4634	131.0832	.3734	.4716	.8705
EMPA3	50.9122	130.6687	.3493	.4387	.8710
EMPA4	50.6390	130.0259	.3791	.3816	.8704
EMPA5	50.8293	130.7795	.3439	.3788	.8711
EMPA6	50.9366	129.3048	.4202	.4607	.8696
EMPA7	50.4390	131.9534	.2809	.4094	.8722
REG1	50.8732	128.5623	.4322	.4049	.8693
REG2	50.4585	129.1220	.4518	.5033	.8690
REG3	50.6390	129.5161	.4368	.3511	.8693
REG4	50.3415	131.3240	.3212	.3524	.8715
REG5	50.5512	128.8564	.4531	.4352	.8690
REG6	50.2146	130.6008	.4443	.4161	.8695
REG7	50.7463	128.8961	.4542	.4529	.8689
REG8	50.8341	130.6096	.3818	.3626	.8704
REG9	50.5512	131.3564	.3483	.3743	.8710
REG10	50.6244	133.3043	.1916	.2893	.8739
REG11	50.6000	128.8294	.4943	.5087	.8683
REG12	50.1463	131.6648	.4173	.4086	.8701
REG13	50.9415	131.4966	.3449	.3764	.8710
REG14	50.5902	128.3019	.5316	.4841	.8677
REG15	50.5805	129.4310	.4081	.3204	.8698

Table 6. continued

	Scale Mean If Item Deleted	Corrected Variance If Item Deleted	Corrected Item- Total Correlation	Squared Multiple Correlation.	Alpha If Item Deleted
UE1	51.0488	133.3407	.3554	.2925	.8713
UE2	51.2439	133.3422	.3020	.3850	.8718
UE3	51.4878	133.6138	.2994	.3788	.8719
UE4	51.4732	132.2505	.4225	.4714	.8703
UE5	51.3610	132.5455	.3720	.5654	.8709
UE6	51.1415	134.0534	.2536	.2965	.8724
UE7	51.2488	133.2466	.3100	.4235	.8717
UE8	51.1951	133.2068	.3202	.2889	.8716
UE9	51.1268	132.6897	.3847	.4115	.8708
UE10	51.2780	131.5253	.4603	.4349	.8697

consistency. As shown in Table 6, the last column of the table predicts a change in Cronbach's alpha if each item were deleted from the test. All seven items on emotional expression had Cronbach's alpha that are higher than the computed alpha of .8736. It meant that internal consistency would go up if these items were removed from the test.

Relationship with Multiple Intelligence

Since that emotional intelligence is regarded as a subset of multiple intelligence, the relationship with other types of intelligence was investigated. Correlation coefficient between emotional intelligence (total test) and multiple intelligence (MI) was .6954, which was statistically significant at $p < 0.001$. Of the five EI subtests, emotional regulation registered a highest correlation coefficient (.6279) with multiple intelligence. The correlation coefficients between emotional regulation and seven subtests of multiple intelligence ranged from .2576 to .5790. Except for bodykiness, all six subdimensions of multiple intelligence had statistically significant ($p < 0.001$) correlation with emotional regulation. Emotional perception registered second highest correlation with multiple intelligence (.5997), followed by empathy (.4964) and emotional utilization (.3880). Emotional expression had lowest level of correlation with multiple intelligence and its subdimensions, indicating

Table 7. Correlation coefficients between EI and Multiple Intelligence (MI)

	Musi- cal	Body- Kines.	Logic- math.	Spac- ial	Linguis- tic	Inter- personal	Intra- personal	MI
EP	.3320**	.2320*	.4441**	.4592**	.4301**	.5709**	.5818**	.5997**
EE	.2002*	.0194	.1487	-.0157	.1989	.2114*	.0478	.1595
EM	.2821**	.1651	.4789**	.3036**	.2891*	.4637**	.4239**	.4964**
ER	.4290**	.2576*	.4894**	.3966**	.4602**	.5790**	.4942**	.6279**
EU	.2156*	.0885	.4134**	.2024*	.1565	.3275**	.3247**	.3880**
EI	.4534**	.2441**	.5918**	.4168**	.5998**	.6564**	.5671**	.6954**

expression skill has little relationship with intelligence.

It is also noted that inter-personal and intra-personal subtests of MI recorded consistently high correlation coefficients with EI subtests. Gardner and Goleman have argued that the two aspects (inter- & intra-person) of MI are strongly related to emotional intelligence. Therefore, the study results seem to support Gardner (1983) and Goleman's (1995) argument. The high correlation between emotional regulation and inter- and intra-personal results can be regarded as an empirical evidence to concurrent validity of the emotional intelligence test.

Factor analysis

Factor analysis was conducted to investigate the underlying structures of 47 items that are included in the emotional intelligence test. It was hypothesized that emotional intelligence has five subdimensions. Factor analysis also was set to extract five factors. First factor had an eigenvalue of 7.95 and explained 16.9% of the total variance. The eigenvalue of the second factor was 2.92. The proportion of variance that was explained by the

Table 8. Emotional Intelligence Factors

Factor	Eigenvalue	Percent of Variance Explained	Cummulative Percent of Variance Explained
1	7.9488	16.9	16.9
2	2.9213	6.2	23.1
3	2.4769	5.3	28.4
4	1.9242	4.1	32.5
5	1.8408	3.9	36.4

Table 9. Factor loadings of EI items

Factor Label	Self Emotional Perception	Emotional Regulation	Self Emotional Regulation	Empathy	Emotional Expression
EP1	.53048	.15149	.28611	.11499	.06285
EP2	.64643	.09159	.09162	-.09032	.00994
EP3	.74840	-.01200	.14131	.05280	.15624
EP4	.60220	.03717	.20639	.09327	.00861
EP5	.67053	.09899	-.02444	.19145	.07471
ER6	.48116	.12039	.20194	.24834	-.08177
ER9	.28514	.20137	.19109	.17504	-.16415
ER12	.44887	.14788	.10365	.32055	-.00981
EU1	.23204	.34054	.15026	.04254	.13411
EU2	.05573	.60459	-.05539	.09295	.17287
EU3	.08520	.57006	.03374	.02618	-.00747
EU4	-.03967	.53847	.07928	.35821	.22661
EU5	-.12355	.58400	.05404	.37037	.15655
EU6	.15454	.39991	.11741	-.13554	.07704
EU7	-.07919	.58825	.20710	.02431	-.07322
EU8	.10944	.52115	.01006	.10728	.05169
EU9	.19513	.44666	.17336	.08721	-.05365
EU10	.29829	.38203	-.02882	.41148	.18331
EP6	.32182	-.14124	.44657	.07069	.10707
EP7	-.08168	-.12113	.49470	.17722	.25137
EP8	.18402	-.17761	.55231	.15925	.16257
ER1	.02781	.29300	.41024	.28789	-.11110
ER2	.25573	.27044	.51411	.00744	-.22609
ER3	.16365	.15242	.42175	.14531	.20198
ER4	.21592	.06947	.35610	.09924	-.04580
ER5	.29773	.35308	.42096	-.10513	-.06142
ER7	.12523	.32132	.48460	.12381	-.12661
ER8	.05239	.23504	.44639	.10364	-.02540
ER10	.03000	.15536	.35533	-.06915	-.22950
ER11	.29484	.35500	.41301	.05474	-.11203
ER14	.29151	.21422	.41032	.21593	.07411
EM1	.30973	.00651	.06845	.54686	-.13112
EM2	.36360	.19911	-.00950	.48411	-.21349
EM3	.05380	.25568	.21199	.32124	.08028
EM4	.21615	-.06421	.31702	.42597	-.00898
EM5	.02245	-.05876	.43403	.40128	.01335
EM6	.06119	.16220	.28787	.51451	-.05340
EM7	.03500	.02052	.06550	.65558	-.00643
ER13	.11310	.19004	.12481	.44222	-.06761
ER15	.11050	.17485	.31057	.32778	.02915

Table 9. continued

Factor Label	Self Emotional Perception	Emotional Regulation	Self Emotional Regulation	Empathy	Emotional Expression
EE1	.09847	-.11446	-.11130	-.06487	.45410
EE2	-.17026	.08658	-.00351	.04963	.59714
EE3	.00380	.10008	-.04798	.14882	.61218
EE4	.12674	.13173	.30907	-.32344	.25326
EE5	-.08882	.11552	.31739	-.24230	.48878
EE6	.12738	.17695	.04191	-.13965	.59640
EE7	.13319	.09609	.06728	-.12478	.68535

EP = Emotional Perception, EE= Emotional Expression, EM= Empathy, ER = Emotional Regulation, EU = Emotional Utilization.

second factor dropped to 6.2%. Table 8 lists the eigenvalues of the extracted factors with the amount of explained variance. The five factors explained 36.4% of the total variance.

Factor loadings of the items are listed in Table 9. An orthogonal rotation was employed to maximize the difference between factors and homogeneity within factors. Factor loadings of the forty-seven items, after orthogonal rotation, are listed in Table 9. First factor is loaded with five items related to emotional perception and three items on emotional regulation. Of the eight items loaded on the first factor, five items are concerned about the perception of self emotion. Therefore, the first factor can be labelled 'perception of self emotion' The remaining three items do not seem to share common characteristics.

The second factor is loaded with nine items on emotional utilization. The tenth item on emotional utilization also has high loadings (0.3823) on the second factor. Therefore, the second factor represents emotional utilization.

The third factor has thirteen items. It is interesting to see that the items can be categorized into two groups. Three items (EP6, EP7, and EP8) ask perception of other people's emotion. The remains ten items tend to measure skills to regulate their own emotion. Therefore, the third factor can be loosely termed 'self emotional regulation.'

The fourth factor is heavily loaded with items on empathy. It is noteworthy that the factor also includes two items (ER13 and ER15) that do not belong to empathy. The two items tend to ask regulation skills on other people's emotion.

The last factor has six items on emotional expression. EE4 has a highest loading (-.3234) with the fourth factor. However, the item also has reasonably high loading (.2533) with the fifth factor that are dominantly emotional expression skill.

V. Conclusion

This paper described an preliminary attempt to develop a test to measure emotional intelligence. An EI test was developed based on the conceptual framework presented by Mayer and Salovey. The EI test included forty-seven items that belonged to five subtests. Since it is widely acknowledged that EI is not a uni-dimensional construct, the present study tried to measure EI via five subtests. The test was administered to students in primary and middle schools. Student responses were analyzed to check the reliability and validity of the EI test.

The interrelationship of EI subtests were relatively mutually independent, as observed in the low to moderate level of correlation between EI subtests. The finding supports the argument that EI is not a uni-dimensional construct, thus should be assessed through separate subtests.

EI test had a reliability coefficient (Cronbach's alpha) of .87. Reliability coefficients of EI subtests ranged from .66 to .81. The reliability of the subtests may seem moderate. However, the number of each subtest is quite limited, thus not insuring high level of reliability. Considering the small number of items in each subtest and reliability coefficients of total EI test (.87), it is reasonable to assume that the EI test possesses adequate level of reliability.

Factor analysis results suggest that five subdimensions that were hypothesized to constitute major aspects of emotional intelligence worked quite well. As seen in the summary of factor loadings (Table 9), items in each subtest were highly coherent. Therefore, the five extracted factors are assumed to represent the five subconstruct of emotional intelligence. Therefore, results of factor analysis, though exploratory in nature, seem to serve statistical evidence to construct validity of the EI test.

The study also investigated relationship with subsets of general intelligence, a broader concept of intelligence. EI had a

relatively high correlation with multiple intelligence (.70). EI subtests had low to moderate correlations with MI. It is noted that EI registered high correlation with inter and intra personal intelligence. Scholars (Gardner, 1983; Goleman, 1995) have suggested that EI is very close to personal intelligence, a subset of MI. The finding serve an empirical support for the argument.

The test development is still in process. The results of this preliminary test analysis should lead to improvements in the standardized EI test. A close attention needs to be directed to emotional expression. The particular subtest seem to have lowest and negative correlation with other subtests as well as with the total test. The low internal reliability coefficient also indicates deficiency in item coherence. Factor analysis, on the other hand, seems to present a contradictory case. All seven items on emotional expression loaded on a single factor, demonstrate a strong coherence. Future research should take a closer look at the conceptual nature of emotional expression as well as the psychological quality of the emotional expression test.

<Appendix 1>

EMOTIONAL INTELLIGENCE SCALE**(1~5 : Emotional Perception)**

1. I can tell exactly how I feel.
① always ② sometimes ③ seldom
2. I can tell exactly whether I am mad or irritated.
① always ② sometimes ③ seldom
3. I can tell exactly whether I am sad or ashamed.
① always ② sometimes ③ seldom
4. I can tell exactly whether I am bored or anxious.
① always ② sometimes ③ seldom
5. I can tell exactly whether I am proud or excited.
① always ② sometimes ③ seldom

(6~12 : Emotional Expression)

6. I have a cute younger brother or sister that I care for very much, I cannot express affection for them.
① always ② sometimes ③ seldom
7. I want to joyfully greet my close friends, I am not able to do so.
① always ② sometimes ③ seldom
8. I want to talk to my mom about my feeling, I am not able to do so.
① always ② sometimes ③ seldom
9. When my close friend gets prizes, I cannot express my happiness for them.
① always ② sometimes ③ seldom
10. When my close friend is sad, I cannot express my sadness for them.
① always ② sometimes ③ seldom
11. When my friend help me with my trouble, I cannot thank him/her in words.
① always ② sometimes ③ seldom
12. When I see my favorite teacher, I cannot say hi to her/him.
① always ② sometimes ③ seldom

(13~15 : Emotional Perception)

13. I can tell if someone is mad by his/her facial expression.

- ① always ② sometimes ③ seldom
14. I can tell my teacher's mood by his/her facial expression in the morning.
- ① always ② sometimes ③ seldom
15. I can tell if someone is mad if s/he is upset or sad by his/her voice.
- ① always ② sometimes ③ seldom

(16~22 : Empathy)

16. I pity a person who does not have a friend.
- ① always ② sometimes ③ seldom
17. I worry about a friend who is sick.
- ① always ② sometimes ③ seldom
18. I feel good when my friend gets praise from the teacher.
- ① always ② sometimes ③ seldom
19. I feel sad when I find my mother or friends feel sad.
- ① always ② sometimes ③ seldom
20. I feel bad when my friend gets punished.
- ① always ② sometimes ③ seldom
21. I feel sad when a kid cries on his/her way to school.
- ① always ② sometimes ③ seldom
22. I feel sad when I see a beggar in the subway or on the bridge.
- ① always ② sometimes ③ seldom

(23~37 : Emotional Regulation)

23. I try to think about the good times when I feel sad.
- ① always ② sometimes ③ seldom
24. I try to be happy all the time.
- ① always ② sometimes ③ seldom
25. I am optimistic when I am in trouble.
- ① always ② sometimes ③ seldom
26. I try to forget bad things.
- ① always ② sometimes ③ seldom
27. I try to calm myself down when I am upset.
- ① always ② sometimes ③ seldom
28. I try to prolong moments of happiness.
- ① always ② sometimes ③ seldom
29. I try not to be discouraged when things go wrong.
- ① always ② sometimes ③ seldom
30. I can cheer myself up when I feel sad.

- ① always ② sometimes ③ seldom
31. I dress carefully to give a neat look.
① always ② sometimes ③ seldom
32. I watch my behavior when my friend does not feel well.
① always ② sometimes ③ seldom
33. I try to smile to make a good impression.
① always ② sometimes ③ seldom
34. I watch my behavior when my parents are upset.
① always ② sometimes ③ seldom
35. I behave nicely to please my teacher.
① always ② sometimes ③ seldom
36. I try to please my friend who feel sad.
① always ② sometimes ③ seldom
37. When my friends or younger brother(sister) cry, I try to make them feel better.
① always ② sometimes ③ seldom

(38~47 : Emotional Utilization)

38. When I cannot find my homework on which I worked very hard, I
① try to do it again as much as possible
② get upset over the thought of the lost homework.
39. When I have to study for exam and my mother's friends are so noisy, I
① try to concentrate on my study
② feel that they are going to ruin the exam
40. When my friends are mean to me, I
① try to be nice to them
② try to be mean to them
41. When my mother scolds me, I
① feel grateful to my mom.
② am mad at my mom.
42. When my friends and I make mistakes and my teacher just punishes me, I
① feel I deserve it
② am mad at the teacher.
43. When I fail a test, I
① try to forget it and prepare for the test tomorrow.
② keep thinking about the failed test.
44. When I have to sit with a friend who I don't care for much, I

- ① try to find good things about her/him.
 - ② try to find other friends to play with.
45. When I find someone whom speaks badly about me, I
- ① try to forget it and to concentrate on other things
 - ② argue with him/her
46. When I have difficulty in playing a new musical instrument, I
- ① keep practice hoping that I will be very good at it soon
 - ② give up because it is not for me.
47. I am too tired to study for a test tomorrow, I
- ① think about my friends who might study for the test very hard.
 - ② take a rest or go to sleep because it would not work

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