CONSTRUCTION AND DEVELOPMENT OF EMOTIONAL INTELLIGENCE SCALE AT THE SECONDARY SCHOOL LEVEL

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Abstract

The concept of emotional intelligence implies humans are both rational and emotional. Coping abilities in life are dependent on the integrative functioning of both rational and emotional capacities. Emotional is the unique repertoire of emotional skills that a person uses to navigate the everyday challenges of life. The educational system and programs must make efforts for traning the emotions of both the students and teachers. There are different popular model of emotional quotient were given by Goleman, Reuven Bar-on, Cooper etc. were used even today for the development of emotional intelligence scale also this scale developed by many Indian psychologists and researchers. By considering various factors, the researcher has developed, constructed and validate the emotional intelligence Scale. The researcher has used systematic procedure for the development of the scale. The present study intends to assess the EQ of students of secondary school level. The present scale consists of 113 of which 94 statements are positively worded and 19 statements are negatively worded. The scale covers different dimensions such as self-Awareness, self- Regulation, motivation, Empathy and Social skills. The reliability of the scale is determined by calculating reliability coefficient on a sample of 500 Students. The statistical properties of the scale as found out by Chronbach alpha, split half method. The scale has high content validity. The present emotional intelligence scale is very useful to access emotional intelligence of students of secondary school level. Hence it has high educational implications.

Concept of Emotional Intelligence

Emotional Intelligence is a recent development in the area of intelligence as well as in affective science, both of which have given birth to overlapping perspective on human nature. The concept of Emotional Intelligence implies that humans are both rational and emotional. Coping abilities in life are dependent on the integrative functioning of both rational and emotional capacities.

Over the past several years, Emotional Intelligence (EI) has found increased acceptance as a factor that is potentially useful in understanding and an influential framework in psychology because fields as varied as developmental, educational, clinical and counseling,social and industrial, and organizational psychology are being enriched by it. Further, a major impetus of Emotional Intelligence is tied to its potential real world applications including the work place, ethics, gerontology and education.

The concept of emotional intelligence has such intuitive appeal and face validity that in a short period of time it has captured the attention of social scientists, educational thinkers and organizational practitioners around the world.

Emotional Intelligence, can be attributed to a comprehensive package of individual skills and dispositions, usually referred to as soft skills or inter and intra-personal skills, which make up the competency profile of a person. Gardner (1983) has referred to the same as intrapersonal and interpersonal intelligence, in his theory of multiple intelligence. Such skills are beyond the traditional areas of specific knowledge, general intelligence, and technical or professional skill. Emotional Intelligenceper se is an offshoot of the very realization that there is such a wide variation in the professional abilities, competences and effectiveness of the people, with the same level of Intelligence Quotient and academic credentials. The heavy emphasis on cognitive aspects, such as memory and problem solving, for explaining the work efficiency, probably ignored the dynamics of the workplace and many other non-cognitive factors that remained unidentified but played an important role in determining the outcome. Emotional Intelligence is the unique repertoire of emotional skills that a person uses to navigate the everyday challenges of life. Learning how to recognize, manage, and harness one's feelings; empathizing; and handling the feelings that arise in one's relationships is the basics of emotional intelligence.

Daniel Goleman defines Emotional Intelligence is comprised of the abilities such as being able to motivate oneself and persist in the face of frustration; to control impulse and delay gratification; to regulate one's moods and keep distress from swamping the ability to think; to empathise and to hope.

Daniel Goleman (1998) defines Emotional Intelligence as the capacity for recognizing our own feelings and those of others, for motivating ourselves, and for managing emotions well in ourselves and in our relationships. Emotional intelligence describes abilities distinct from, but complementary to, academic intelligence or the purely cognitive capacities measured by Intelligence Quotient.

Ravi Bangar (2005) defines Emotional Intelligence as the capacity to create optimal results in your relationships with yourself and others.

Samira Malekar (2005) defines Emotional Intelligence as a set of factors which involve awareness of self and managing emotions, developing oneself through the power of empathy and motivation and building strong relationship with people.

Madhumati Singh (2006) defines Emotional Intelligence as the ability and freedom to grow from mistrust to trust, self-doubt to self-empowerment, following to leading, incompetence to competence, isolation to synergy and despair to hope.

Emotional intelligence in the Indian context includes social concerns like respecting elders, concern for others, fulfilling one's duties. In addition to these, the moral values of Ahimsa (non-violence) kindness, benevolence provide the very basis for emotional expression and responsivity. These are built in ways an individual deals with situations - emotional, social or otherwise, are basic to the notion of Emotional Intelligence and that is why individuals approach emotions differently. Regulation of emotions too is directed inwards. Individuals attempt to change their behaviour and attempt to adapt to the environment. In this way, the need of others takes prominence over personal, social and environmental values.

The educational system and programs must make efforts for training the emotions of both the students and teachers and developing proper emotional intelligence potential among them. Then it will surely help in bringing mutual emotional understanding, empathy, accompanied with the right actions and behaviour on the part of the students and teachers to lead a better life in peace and cooperation.

Review of Previous Studies

The investigator has reviewed the reports of previous researches, dissertations, articles, surveys, reports, books, and internet sources. The findings, opinions, and statements of various researchers and authors which have a bearing on the present study.

In recent years a number of psychometrically validated measures have been developed by the researchers to measure Emotional Intelligence. Some of them are ability measures while other are self-report ones.

The major efforts made include Multi-factor Emotional Intelligence Scale (MEIS) Yale university psychologists, John. D. Mayer and Peter Salovely, who coined the term emotional intelligence in 1990 by using it in the journal "Imagination, Cognition and Personality" developed the scale in 1999; It consists of 12 scales divided into four branches of abilities including (a) perceiving, (b) assimilating, (c) understanding and (d) managing emotions. It is based on actual performance as opposed to self-reported performance. The sub scales have generally shown to be reliable (most is > .70). This scale has been shown to correlate with a number of criterion measures, including intelligence, empathy, life satisfaction and parental warmth. It is a potentially useful instrument, valuable of more extensive evaluation especially in an Indian setting.

Mayer, Salovey and their recent colleague David Caruso designed Mayer Salovey Caruso Emotional Intelligence Test MSCEIT in 1999. This scale is designed to resolve some of the problems associated with the MEIS. It measures the four core emotional abilities defined in the Mayor Salovey model. It includes many tasks each designed to test a person's emotional ability. It consists of 141 items. There is another version of MSCEIT available for the adolescents.

If Goleman is responsible for popularising the concept of emotional intelligence, then Dr. Reuven Bar-on (2000) made a popular approach to measure EI and he developed an instrument known as the Bar-on's EQ-i (Emotional Quotient Inventory) to help measure Emotional Intelligence. It measures "an array of non-cognitive capabilities, competencies and skills that influence one's ability to succeed in coping with environmental demands and pressures". This instrument predicted and assisted in the success of real people in wide variety of fields. His self-report EQ-i generates a total EQ score and five EQ composite scales consisting of 15 subscale scores; (i) Intrapersonal EQ, (ii) Interpersonal EQ, (iii) Stress management EQ, (iv) Adaptability EQ andv) General mood EQ. It is a paper pencil test.

Another popular model of EQ was given by Cooper (1999). Various dimensions of EQ have been given in different scales of EQ. EQ in business and life can be understood by this four-corner stone model by Cooper. Emotional literacy, emotional fitness, emotional depth and emotional alchemy are the four cornerstones.

Emotional Competence Inventory (ECI) version 1 & 2 are the other two scales used to measure EQ.ECI – 2consists of 18competencies grouped into four dimensions: self-awareness, self-management,social awareness and social skills(Hay Group, 2002). ECI is a multi-rator instrument that generates self, manager, direct report and peer ratings on a series of behavioral indicators of Emotional Intelligence.

Goleman (1995) has developed another scale. The scale has various situations and is computed on the basis of responses to these situations.

The above discussion reveals that there are psychometrically valid scales to measure EQ at the international level in Israel and the USA. The present investigator has also come across Emotional Intelligence scales developed by Indians.

Shailendra Singh has developed a measure of emotionalintelligence by following Goleman's (1998) Model of Emotional Intelligence. He has made an attempt to measure core dimensionsofEmotional Intelligencenamely;self-awareness,self-

regulations,motivation,social awareness and social skill. There are 12 statements in each dimension and the total no of statements is 60.

Anukool Hyde, Sanjyot Pethe and Upinder Dhar (2002) have developed EIS consisting of 34 items spread over 10 factors of EI namely: self-awareness, empathy, self-motivation, emotional stability, managing relations, integrity self-development, value orientation commitment and altruistic behaviours.

Unfortunately, no attempts have been made to validate the features of the concept of emotional intelligence and its measurement. Thiswaspreciselyoneof thereasonsthat thepresentstudy was undertaken as a modest effort to construct and standardize one such scale for secondary school students.

Procedure followed for Developing Emotional Intelligence ScaleforAdolescents is as follows

Step 1: Collection of Items (Writing Statements of Items of the Scale)

As a first step, the investigator made through consultation of a wide variety of sources like authoritative and authentic books, research literatures, journals and periodicals and other resourceful literature related to the concept of emotional intelligence and its parameters namely; self-awareness, self-regulation, motivation, empathy and social skills. The investigator carefully examined the definition of each competence and generated a large item pool of 200 items that are related to these competencies.

Step 2: Editing of Items

Investigator has consulted psychologists and requested to check these items for clarity and classify these items into 25 categories and they were further asked to classify 25 categories into 5 major dimensions.Along with the pool of items, Goleman's definition of Emotional Intelligence and a brief note on emotional competence frame work were also supplied to the experts for the purpose of reference. The items which were considered by experts as ambiguous, abstract, complex, difficult terminology were discarded.

Step 3: Preliminary Administration and Item Analysis

The preliminary pool of remaining items 150 were printed in the form of a self-report questionnaire with a five point scale form (as given below) against each item. The response categories for positively worded items were 5 = Strongly Agree, 4 = Agree, 3 = Undecided, 2 = Disagree and 1 = Strongly Disagree. The response categories for negatively worded items were 1 = Strongly Agree,2 = Agree, 3 = Undecided, 4 = Disagree and 5 = Strongly Disagree. The Emotional Intelligence scale was administered to a represented sample (N=500) consisting of State Government and Central School Students. The students were asked to indicate their responses to each statement by encircling one of the categories of agree or disagree using a five pointscale as stated above.

Eachitem of the scale was scored using the following method.In scoring the investigator distinguished the positive and negatively worded items.

Table-1: Positively Worded and Negatively Worded Statement Scores

Items	SA	A	U	D	SD
Positively worded	5	4	3	2	1
Negatively worded	1	2	3	4	5

Then the total score of each respondent was obtained by adding his/her score that he/she received for separate statements.

The next step was that the answer sheets were arranged in the descending order of the total scores. From the answer sheets, the top 27% (top 135 answer sheets) and the bottom 27% (bottom 135 answer sheets) were used for item selection. The't' value was calculated through SPSS.

Those items which showed higher M values that is more than 0.6 were selected for the final scale. The items having correlation below 0.6 were deleted. As the investigator found it difficult to get response from students on such along scale and on the basis of the feedback that the scale was too long, it was decidedto reduce the number of items to 113 only spreading over all the 25 competencieswith due weightages to each and while retaining reliability within acceptable limits.Thus the final form of the EISA consisted of 113 items.

Step 4: Final Version of EISA

The final EISA was administrated on a sample of 500 secondary school students and the scores were used for the purpose of developing norms, estimating the validity of the scale and for estimating the reliability of the scale.

Table-2: Item-total Correlation for the final 113 Items Selected inEmotional Intelligence for Secondary School Students

Item No.	Cor. Coeff	ItemNo.	Cor. Coeff	ItemNo.	Cor. Coeff	Item No.	Cor. Coeff
1	0.716	29	0.881	57	0.616	85	0.753
2	0.823	30	0.852	58	0.823	86	0.684
3	0.784	31	0.655	59	0.690	87	0.686
4	0.712	32	0.674	60	0.782	88	0.899
5	0.901	33	0.684	61	0.650	89	0.907
6	0.745	34	0.684	62	0.672	90	0.863
7	0.863	35	0.863	63	0.950	91	0.701
8	0.942	36	0.675	64	0.826	92	0.601
9	0.753	37	0.863	65	0.715	93	0.626
10	0.823	38	0.814	66	0.845	94	0.889
11	0.854	39	0.706	67	0.659	95	0.434
12	0.797	40	0.797	68	0.699	96	0.641
13	0.785	41	0.811	69	0.721	97	0.623
14	0.786	42	0.889	70	0.658	98	0.855
15	0.886	43	0.674	71	0.901	99	0.889
16	0.684	44	0.655	72	0.886	100	0.653
17	0.697	45	0.674	73	0.659	101	0.684
18	0.784	46	0.826	74	0.841	102	0.726
19	0.788	47	0.699	75	0.863	103	0.814
20	0.922	48	0.944	76	0.684	104	0.706
21	0.863	49	0.886	77	0.697	105	0.863
22	0.666	50	0.863	78	0.796	106	0.797
23	0.709	51	0.454	79	0.784	107	0.655

24	0.889	52	0.688	80	0.666	108	0.712
25	0.675	53	0.758	81	0.991	109	0.864
26	0.726	54	0.865	82	0.892	110	0.269
27	0.756	55	0.745	83	0.863	111	0.653
28	0.653	56	0.842	84	0.922	112	0.784
						113	0.916

The responses obtained from the pilot testing are used in item analysis. It can be observed from the above table that the calculated value of correlating coefficient for every items of Emotional Intelligence which were found to be significant at 0.01 levelofsignificance.Hence,113itemsofEmotionalIntelligenceScale for Secondary School students retained for the final version of the EISA details of reliability values of each and every item is given in the above table.
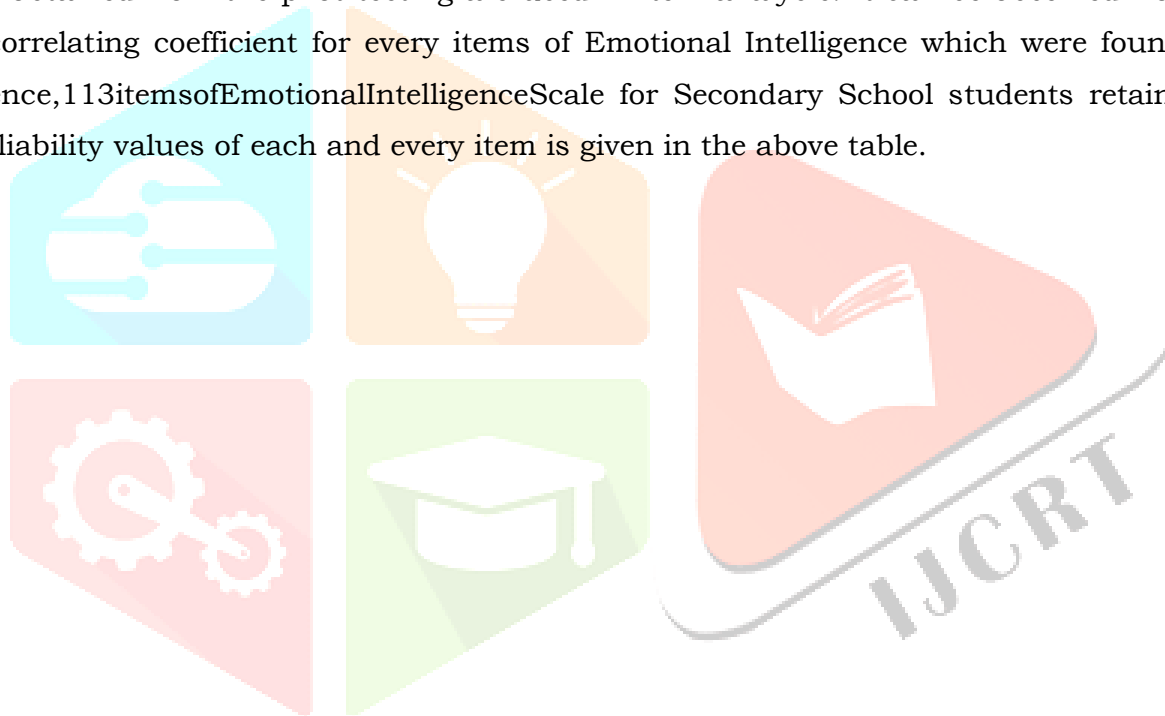
Table-3: Dimension-wise and Competencies-wise Serial Number of Positively Worded and Negatively Worded Items in Emotional Intelligence Scale for Secondary School Students

	Dimensions	Competencies	Sl.No. of Positively worded Items	Total No.	SI. No. of Negatively worded Items	Total	Grand Total
A	Self-Awareness	Al-Emotional Awareness	1,2,4,6	4	3,5,7,8	4	8
		A2-Accurate self-assessment	9,10,11,12,16,17	6	13,14,15	3	9
		A3-Self confidence	18,20,21,22,23,	5	19,24,25,26,27	5	10
		Total of A		15		12	27
B	Self-Regulation	B1-Self control	29,30,33,34,36	5	28,31,32,35	4	9
		B2-Trust worthiness	38,39, 43	3	37	1	4
		B3-Conscientiousness	40,41,42	3		0	3
		B4-Adaptability	44,45,48,49	4		0	4
		B5-Innovation	50,46,47,52	4	51	1	5
		Total of B		19		6	25
C	Motivation	C1-Achievement drive	53,54,55,56,57	5		0	5
		C2-Commitment	58,59,60,61	4		0	4
		C3-Initiative	62,63	2		0	2
		C4-Optimism	64,65,66,67,68	5		0	5
		Total of C		16		0	16
		Total of A, B and C		50		18	68

	Dimensions	Competencies	Sl.No. of Positively worded Items	Total No.	SI. No. of Negatively worded Items	Total	Grand Total
D	Empathy	D1-Understanding others	69,70,71,72	4		0	4
		D2-Developing others	73,74,75	3		0	3
		D3-Service orientation	76,77,78	3		0	3
		D4-Leveraging diversity	79,80,81	3		0	3
		D5-Political awareness	82	1		0	1
		Total of D		14		0	14
E	Social Skills	E1-Influence	83,84,85,86	4		0	4
		E2-Communication	87,88,90,91,92,93	6	89	1	7
		E3-Conflict management	94,95,96,97	4		0	4
		E4-Leadership	98,99,100,101	4		0	4
		E5-Change catalyst	102,103,104	3		0	3
		E6-Building bonds	105,106,107,108	4		0	4
		E7-Collaboration & Cooperation	109,110	2		0	2
		E8-Team capabilities	111,112,113	3		0	3
		Total of E		30		1	31
		Total of D and E		44		01	45
	G.Total			94		19	113

It can be observed from the above data that the Emotional IntelligenceScale for Students consisting of 113 of which 94 statements are positivelyworded and 19 statements are negatively worded. Positively worded statements canbe scored 5, 4, 3, 2 and 1. Negatively worded statements can be scored 1, 2, 3, 4 and5. The score of the EISA ranges from 113 to 565.

Statistical Property used in the Selection and Elimination ofItems Reliability of the Scale

The reliability of the scale is determined by calculating reliability coefficient on a sample of 500 Students. The statistical properties of the scale as found out by Chronbach alpha, split half method (Guttmann's) reliability are given below.

Table-4: Reliability Quotients of Emotional Intelligence Scale for Secondary School Students

Reliability Measure	Reliability Coefficient
Cronback Alpha	0.6824
Split-half Method (Guttmann)	0.9326

Since we find both reliability coefficients are above 0.6824 and 0.9326 one can definitely say that the tool developed for measurement of Emotional Intelligence is highly reliable. Above reliability quotients which were found to be significant at 0.01 level of significance.

Validity of the Scale

Besides face validity, as all items were related to the variable under focus, the scale has high content validity. It is evident from the assessment of judges that the items of the scale are directly related to the concept of emotional intelligence. The factor-wise correlations with the total scores as well as between factors are given below.

Table-5: Correlation Matrix on Dimensions of Emotional Intelligence Scale for Secondary Scale Students

Dimensions	Self-Awareness	Self-Regulation	Motivation	Empathy	Social Skills	Total Emotional Intelligence
Self-Awareness	1.0	0.416**	0.295**	0.100*	0.183**	0.503**
Self-Regulation	0.416	1.0	0.423**	0.130**	0.233**	0.637**
Motivation	0.295**	0.423**	1.0	0.384**	0.268**	0.597**
Empathy	0.100*	0.130**	0.384**	1.0	0.097**	0.354**
Social Skills	0.183*	0.233**	0.268**	0.097*	1.0	0.502**
Total Emotional Intelligence	0.503**	0.637**	0.597**	0.354**	0.502**	1.0

* 0.05 level of significance

** 0.01 level of significance

It can be revealed the data from the above table that Emotional Intelligence scale for secondary school students has five dimensions – self-awareness, self-regulation, motivation, empathy and social skills which are found to be significantly interrelated each and every dimensions. All the detailed co-efficient of correlations of dimensions of EISA are given in the above table.

Table-6: Interpretation of the Results of Emotional Intelligence Scale for Secondary School Students

Sl. No.	Category	Description	Range of scores (Male and Female)	Percentage of Marks
1	Very poorEmotionalIntelligence	Emotionally not intelligent	Below 226	Below 40%
2	Below average	Below average	226-283	40-49%
3	Average	Average	283-396	50-70%
4	Above average	Emotionally intelligent	396-452	70-80%
5	HighEmotionalIntelligence	Highly Emotional Intelligent	452-565	80-100%

The norms given above are for the school students age group of 13-19 years in Karnataka State. Other researchers may use the same norms can develop their own norms depending upon the objectives of the study, nature of the sample and the place of the study.

Limitations of the Scale

1. This scale has prepared for the age group of 13-19 yrs meant for secondary school students.
2. In all the tests of this nature, the subjects do manage to get some insight into what the purpose is.
3. The scale purports to measure learned optimism of which the subject has some awareness.
4. The data that would be generated may be used for self-reflection and counselling.
5. This scale can be used for exploratory studies.

Educational Importance of Measuring Emotional Intelligence

It is scientifically proved that the success of individuals work is 80 percent dependent on emotional intelligence and only 20 percent on general intelligence quotient.

The present emotional intelligence scale is very useful for the purpose to assess emotional intelligence of students of secondary school level. It helps them to understandtheemotionalintelligencewhichassiststhestudentsto choose educational and vocational career. It helps them to develop adjustment.

Ithasbecomeanurgentnecessitythatthepresentdayeducational institutions provide healthy emotional modelling, nurturing etc., which would result in making the students, attains moderately high Emotional Quotient.

Studentsshouldalsobeadvisedtomakeconscious,deliberate and conscientious efforts to improve their emotional intelligence potential.Schools of secondary or senior secondary level should be adequately equipped with necessary learning materials in case of teaching.

The social, academic and emotional climate of the secondary schools have to be improved, thus enabling the students to acquire some abilities which improve emotional intelligence.

Any research effort becomes worthwhile only when it specifies some of the important educational implications.The findings of the present study have certain significant and meaningful educational implications for psychologists, parents, school guidance workers and counselors and educational administrators.

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