

EMOTIONAL WHEEL: MEASURING EMOTIONS

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Abstract

Background

The present article is intended to create emotional scale of prospective teachers based on the feeling wheel of Gloria Wilcox and Emotional wheel of Robert Plutchik.

Methodology

The statements related to four dimensions of emotions are framed and given to the prospective teachers for survey. Forty seven prospective teachers from Department of Education, Gandhigram Rural Institute-Deemed to be University were selected as samples for pilot study. The academic year of the students is 2018-19. After that the data is subjected to item analysis to evaluate the quantity and quality of the items and the test as a whole. On basis of this the scale is modified. The original item has 50 in number. The concluding type of emotional scale comprises of 33 items which has been differentiated fewer than 4 dimensions namely happy, sad, fear and surprise (followed by eight core emotions of

emotional wheel). All the substances of scale are given in Likert Five point scale. The reliability and validity of the emotional scale has been found.

Conclusion

A standardized questionnaire for measuring emotion was framed based on half of the components of emotional wheel.

Key words: emotions, emotional wheel, item analysis, standardization, prospective teachers

Introduction

Pupil's emotions are important because their thoughts, feelings and moods are affecting motivational behavior and learning subsequently themselves. It is terrible that even though the prospective teachers are very bright in their studies lacking in their emotional behavior. An emotionally intelligent teacher can produce an emotionally intelligent student. It is mandatory to measure the emotion of the prospective teachers to make them emotionally intelligent in order to get an emotionally intelligent future generation. Dr. Gloria Wilcox developed a feeling circle. Our feelings are expressed in self expressive words. This feeling circle gives emotional words in intellectual language. Actually her feeling circle is based on Dr. Robert Pultchik. In 1980 Dr. Robert Plutchik an American Psychologist developed emotional wheel based on psycho evolutionary theory. He identify eight primary emotions namely joy, sadness, trust, disgust, fear, anger, anticipation and surprise. Through his research he found 34, 000 emotions. He reduced these into the above said 8 core emotions. Dr. Robert told that emotions play an important role in the issue of survival, and it involves both cognition and behavior. The sequence related to the development of an event is

Table1 Relation between cognition and emotion

Stimulus event	Cognition	Feeling/Emotion	Behavior	Effect
Threaten by enemy	Danger	Fear	Run	Protection
Loss of Parent	Isolation	Sadness	Cry for help	Assistance

Review

Hundreds of articles in various fields like psychology, medicine, marketing, management and others assets that emotions are everywhere and ever present in human life. Lot of researches in laboratory and in everyday life establishes the cause and consequences of emotions (Berkowitz L., 1990, Frijda NH.1986,, Smith CA, Lazarus RS. 1993, Markus HR, Kitayama S.. 1991). This article explains about the measurement of our everyday emotions like happy, sad, fear and joy. Measuring our own emotions based on emotional wheel help us to self-assess ourselves and rectify us.

The health benefit of emotions was studied in recent years. It was proposed that the psychological interventions encourage people to cultivate the specific emotions like gratitude (Wood AM, Froh JJ, Geraghty AW.2010), awe (Rudd M, Vohs KD, Aaker J. 2012), and love(Fredrickson BL. 2013, Emmons RA, McCullough ME.,2003, Hutcherson CA, Seppala EM, Gross JJ.2008). It was also found that different emotional states influence decision making and judgment. For example, anger and joy tends to boost people to take action. Fear and disgust increases people desire to discard their belongings (Lerner JS, Li Y, Valdesolo P, Kassam K..2015). Some researchers reported that relaxation and happiness

are the most frequent human emotions (Zelenski JM, Larsen RJ.2000) whereas others find that excitement and anxiety dominate our emotional life.(Heiy JE, Cheavens JS..2014.). These incongruent results made the authors to prepare a tool based on emotional wheel. This statements related to emotions were framed and given to the undergraduate student teachers to measure the emotions of student teachers. The emotions like happy, sad, fear and surprise were analyzed.

Ten Postulates of emotional Theory

Based on evolutionary theory of emotions **Robert** Plutchik developed 10 postulates.

They are

1. Animals and Humans: Basic emotions are experienced by animals and humans are the same.
2. Evolutionary History: Evolution results produced emotions.
3. Survival issues: In order to increase the chances of survival in the environment emotions have evolved.
4. Proto type Patterns: Even though there are several emotions in different species, there are common (prototype) emotions.
5. Basic Emotions: There are some basic emotions exists and identifiable.
6. Combinations: The combination of basic emotions gives other emotions.
7. Hypothetical Constructs: Primary emotions are idealized states (Hypothetical constructs) which we describe in terms of their particular properties.
8. Opposites: Pairs of polar opposites of primary emotions were found.. They are Happy-Sad, Trust-Disgust, Fear-Anger, Anticipation-Surprise
9. Similarity: Different degrees of similarity are found in all emotions.

10. Intensity: The level of intensity is varied in each emotions.

Construction of Items

The above figure shows the feeling wheel of Gloria Wilcox. Her wheel and Robert Plutchik's emotional wheel has core emotions. They are happy, sad, angry, disgusted, surprised, trust, bad and fear. In this study the investigators made some changes in the original emotional wheel to measure the emotions of prospective teachers.

1. Four emotions were taken instead of eight core emotions.
2. Two positive (surprise and happy) and two negative emotions (fear and sad) were taken.
3. The core emotions are considered as four dimensions (Happy, sad, fear and surprise).
4. The main components of each dimension were taken into consideration. For happy it is 9, for sad it is 6, for fear it is 6 and for surprise it is 4.
5. The sub components of the main components were also taken into consideration. For happy the number of sub components are 18, for sad it is 12, for fear it is 12 and for surprise it is 8.
6. Sub components are termed as Variables. The investigators prepared statements regarding these variables. They prepared 60 questions based on these fifty variables. Likert's five point scale was prepared to grade the responses.

Dimensions of Emotion Scale

The experience of emotion can be explained a contentful state of pleasure or displeasure. Some degree of stimulation may also be practiced. Some circumstances with a exact relational meaning is practiced simultaneously with and as

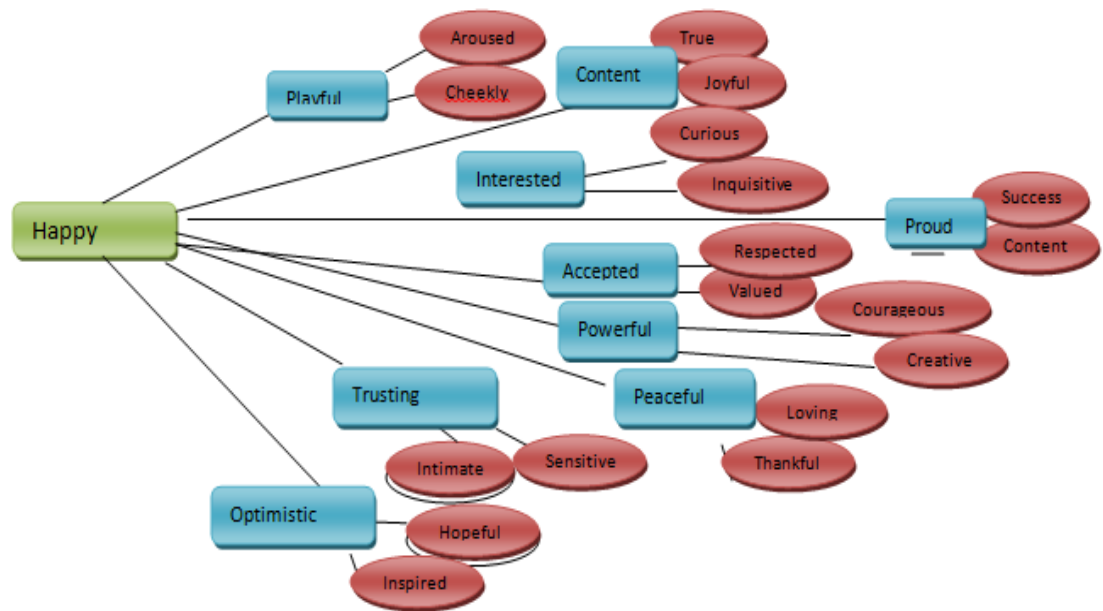
having caused these emotional feelings (Lisa Feldman Barrett¹, Batja Mesquita², Kevin N. Ochsner³, and James J. Gross. 2007.). Dimensions are basic and necessary mechanisms of anything which is used to perform and mould the main variable. The positive and negative emotionality measures emotionality is the findings of Marie Clarie Gay et-al (2017). . They have taken six subscales as joy, tenderness, anger, fear, sadness and shame. Debra Trampe, Jordi Quoidbach and Maxime Taquet (2015) developed an emotion questionnaire that was fixed in a larger study. Specifically, which includes nine specific positive emotions such as amusement, alertness, awe, gratitude, hope, love, joy, pride, and satisfaction and nine specific negative emotions such as anger, anxiety, disgust, contempt, embarrassment, guilt, fear, offense, and sadness? The present study consists of two main positive emotions like happy and surprise and two main negative emotions like sad and fear. These main dimensions are further divided into small dimensions. This article and the following diagrams explains the divisions of the dimensions.

Figure 1 Dimensions of Emotions



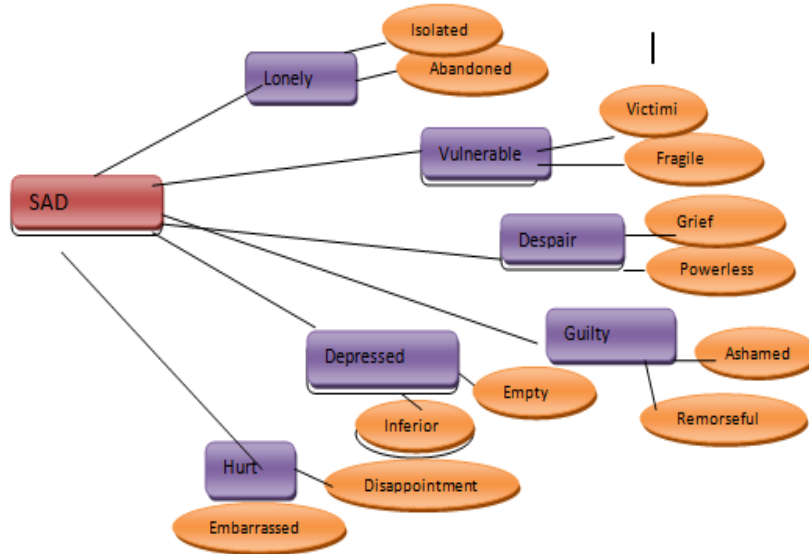
Happy: One of the core dimensions of eight emotions is happiness. It is known as positive emotion. Happy is further divided into nine components as playful, content, interested, proud, accepted, powerful, peaceful, trusting and optimistic. These components are further divided into eighteen sub components.

Figure 2 The Main component & Sub components (variables) of Dimension Happy



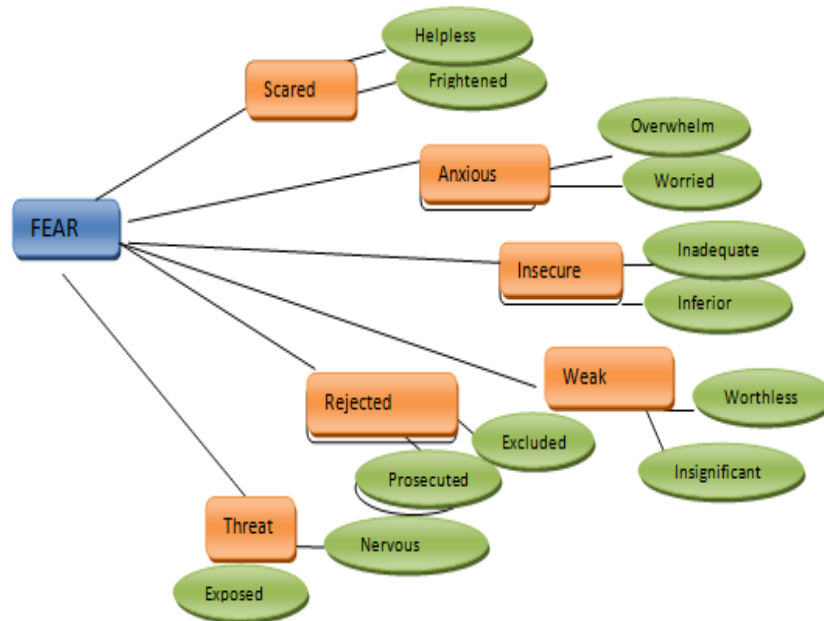
Sad: Sad is known as negative emotion which is the pair of happiness the positive emotion in the emotional wheel. This dimension sad is divided in to six components namely lonely, vulnerable, despair, guilty, depressed and hurt. These six components has 12 sub components as isolated, abandoned, victimized, fragile, grief, powerless, ashamed, remorseful, empty, inferior, disappointment and embarrassed. It is given in the below diagram.

Figure 3 the Main component & Sub components (variables) of Dimension Sad



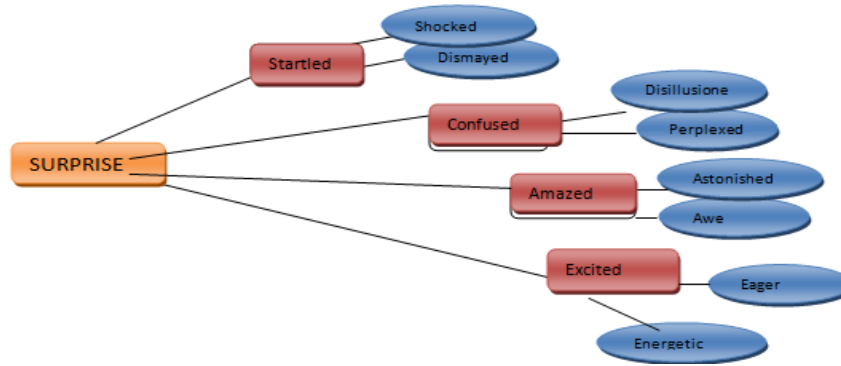
Fear: Fear is one of the core emotions among eight core emotions in the emotional wheel and it is consider as negative emotion. This dimension fear is divided in to six components namely scared, anxious, insecure, weak, rejected and threatened. These six components has 12 sub components as helpless, frightened, overwhelmed, worried, inadequate, inferior, worthless, insignificant, excluded, persecuted, nervous and exposed. It is given in the below diagram.

Figure 4 The Main component & Sub components (variables) of Dimension Fear



Surprise: Surprise is one of the core emotions among eight core emotions in the emotional wheel and it is consider as positive emotion. This dimension surprise is divided in to five components namely startled, confused, amazed and excited. These five components has further divided into 10 sub components as shocked, disillusioned, dismayed, perplexed, astonished, awe, eager and energetic.. It is given in the below diagram.

Figure 5 The Main component & Sub components (variables) of Dimension Surprise



Objectives

The following objectives has formulated by the investigators

1. To construct emotional scale for prospective teachers.
2. To standardize emotional scale for prospective teachers.

Steps for Standardization Process

Emotional scale was constructed to measure the emotions of prospective teachers.

The steps followed for its construction and standardization are as follows.

1. Setting up
2. Preparation for preliminary forms
3. Pre try out
4. Editing
5. Pilot study
6. Item analysis
7. Trainingforfinalform

Setting up

An article about emotion divided emotion into two categories. They are basic emotions and emotion-cognition interaction or emotion schema. Basic emotions are further divided into positive emotions and negative emotions. They listed some basic positive emotions as joy and interest and some basic negative emotions as sad, anger and fear (Carroll, E. Izard 2009). The present study focuses on two basic positive (happy and surprise) and two basic negative emotions (sad and fear). The emotional scale is planning to evaluate 4 core emotions of the prospective teachers' namely happy, sad, fear and surprise. Hence, it was plan to properly and the statements were taken regarding to the emotional wheel of Robert Pultchik as reference.

Preparation of Preliminary form

The investigators developed the preliminary form of emotional scale for prospective teachers with 60 simple statements. The respondents were graded regarding the options "strongly agree, agree, no opinion, dis agree and strongly dis agree. The positive scores are 5, 4, 3, 2 and 1. The negative scores are 1, 2, 3, 4 and 5 respectively. Based on the four dimensions happy, sad, fear and surprise the statements were taken.

Pre try out for validity

The preliminary forms of the emotional scale of the prospective teachers were given to the subject experts in the field of education and Psychology to check the clarity of the subject content and language. Based on their suggestions the research tool was further edited.

Editing

Based on the expert's suggestions in the pre try out stage 10 items were rejected and 50 items were selected for pilot study.

Pilot Study

For standardization, the investigators conducted a pilot study. The scale was administered to 47 prospective teachers in Gandhigram Rural Institute-Deemed to be University in the year 2019-20. The teachers were asked to put their responses in the scale. And it was instructed by the investigators that their responses will be kept confidential. They took 45 minutes to answer the emotional scale. Their responses were then scored according to positive and negative scoring procedure.

Item Analysis

For item analysis the investigators used "t" test to test each and every responses. They were arranged in the highest to lowest scores. After this the investigators took up 27% of the top samples- the high scorers and the bottom 27% - the low scorers. The high and low groups were segregated as criterion groups. And the "t" difference between them were found. The results were tabulated here under.

Table-2 t-test values of emotional scale

S.NO	Variab les	Main Emotio n	Sub Emotions	Statements	t	Sig	Result
1	H1	Playful	Aroused	I have intense interest to do things properly.	.866	.397	NS

2.	H2		Cheeky	I am not rude to others.	.000	1.00	NS
3.	H3	Content	True	I am contented with what I am living	2.308	.032	S(h3)
4.	H4		Joyful	I am doing my duty cheerfully	.265	.793	NS
5.	H5	Interest ed	Continuous	I am interested to inspect the work of other	2.606	.017	S(h5)
6.	H6		Inquisitive	I have concern about others person's problem	2.410	.026	S(h6)
7.	H7	Proud	Successful	I will successfully reach my goal	2.309	.033	S(h7)
8.	H8		Content	I am bold enough to do anything properly	.000	1.00	NS
9.	H9	Accepte d	Respected	I respect others opinion.	2.095	.044	S(h9)
10.	H10		Valued	I value the culture of others	2.091	.043	S(h10)
11.	H11	Powerfu l	Courageous	I will speak against injustice.	2.203	.033	S(h11)
12.	H12		Creative	I always want to be	-.577	.570	NS

				creative			
13.	H13	Peaceful	Loving	I love others truly and selflessly.	1.185	.250	NS
14.	H14		Thankful	I always thankful to others who did bravery works	.830	.416	NS
15.	H15	Trusting	Sensitive	I am so sensitive in my works	3.689	.001	S(h15)
16.	H16		Intimate	I value the intimacy of others	2.002	.045	S(h16)
17.	H17	Optimistic	Hopeful	I always have positive outlook	.250	.805	NS
18.	H18		Inspired	I want to be role model of others.	2.094	.049	S(h18)
19.	S1	Lonely	Isolated	I feel that I am in isolation	2.096	.049	S(s1)
20.	S2		Abandoned	I feel that I am neglected	2.264	.035	S(s2)
21.	S3	Vulnerable	Victimized	I never deceive others	1.029	.316	NS
22.	S4		Fragile	I feel that I am so weak	2.675	.015	S(s4)
23.	S5	Despair	Grief	I used to mourn when I feel sad.	2.646	.016	S (s5)

24.	S6		Powerless	In hard situations I am powerless	3.660	.002	S(s6)
25.	S7	Guilty	Ashamed	If I do wrong I will regret	2.261	.035	S (s7)
26.	S8		Remorseful	I used to ask sorry if I did wrong	.707	.488	NS
27.	S9	Depressed	Empty	I feel myself worthless	4.085	.001	S(s9)
28.	S10		Inferior	I feel vacuum when I am depressed	.350	.730	NS
29.	S11	Hurt	Disappointment	I was too embarrassed to admit that I'd forgotten.	4.608	.000	S(s11)
30.	S12		Embarrassed	I feel disappointment when I am hurt.	1.163	.258	NS
31.	F1	Scared	Helpless	In fearful situations I feel helpless.	2.711	.013	S(f1)
32.	F2		Frightened	I feel that something frightening me	2.346	.029	S(f2)
33.	F3	Anxious	Overwhelmed	I was overwhelmed by fear of falling.	3.525	.002	S(f3)
34.	F4		Worried	I used to worry about my future	3.158	.005	S(f4)
35.	F5	Insecure	Inadequate	I feel incapable when I	3.629	.002	S(f5)

				speak to others.			
36.	F6		Inferior	I feel inferior.	3.975	.001	S(f6)
37.	F7	Weak	Worthless	I feel that my speech are worthless.	4.224	.000	S(f7)
38.	F8		Insignificant	I feel that my works are made insignificant by others	3.525	.002	S(f8)
39.	F9	Rejected	Excluded	I feel that I am excluded by my relatives	4.608	.000	S(f9)
40.	F10		Prosecuted	I won't persecute anybody based on race or religion.	1.250	.226	NS
41.	F11	Threatened	Nervousness	I am made nervous by my friends' actions.	3.737	.001	S(f11)
42.	F12		Exposed	I exposed to fear when someone threatens me.	1.969	.063	S(f12)
43.	Su1	Startled	Shocked	I was shocked to see the wonders of the nature	3.660	.002	S(su1)
44.	Su2		Dismayed	I won't upset when others speak ill of me.	.567	.577	NS
45.	Su3	Confuse	Disillusioned	I've become very	2.748	.012	S(Su3)

		d	d	disillusioned with politics.			
46.	Su4		Perplexed	I am not confused to take decision making.	2.094	.049	S(Su4)
47.	Su5	Amazed	Astonished	I am astonished to see the creative works of others	.201	.843	NS
48.	Su6		Awe	I was in awe of my grandparents.	.415	.682	NS
49.	Su7	Excited	Eager	I am eager to know many things	.284	.779	NS
50.	Su8		Energetic	I am energetic to do any thing	2.390	.027	S(Su8)

H-Happy, S-Sad, F-Fear, Su-Surprise; S-Selected, NS-Not Selected

Debbi R.Johnson (2015) explained that students are suffering with internal stress. This is called as intra personal emotions. This is because of the competition in their academics, home situations, adolescent problems, peer group pressure etc. Hence it is necessary to measure one's own emotions to avoid stress and anxiety. Even teachers nowadays often fell into work pressure. This will lead to stress, anxiety etc. The amygdale which is the center of emotions will get damaged if over stress is given (Goleman. 2000). Goleman in his famous book quoted that self awareness is the prime component of

emotional intelligence. To know one's own emotion plays the vital role to manage our own emotions and express it in a proper way.

Table 3 Description of emotional scale

S.NO	Dimensions	Items selected	Total No. of Items
1.	Happy	H3,h5,h6,h7,h9,h10,h11,h15, h16,h18	10
2.	Sad	S1,s2,s4,s5,s6,s7,s9,s11	8
3.	Fear	F1,f2,f3,f4,f5,f6,f7,f8,f9,f11,f12	11
4.	Surprise	Su1,su3,su4,su8	4
		Total	33 items

Training of Final Form

After item analysis the final item to measure the emotions of prospective teachers were prepared with items.

Validity of the Tool

Validity refers to the degree of accuracy of the item. On the basis of the emotional wheel the scale contains the content validity and it was verified by two assistant professors in Education. The items were constructed on the concept and dimensions proposed by Dr. Robert Plutchik and Dr. Gloria Wilcox. So the tool possesses content validity. And on the suggestions of the experts the tool was modified. So the tool has face validity also.

Reliability of the Tool

The reliability of the tool was found by Cronbach Alpha method using SPSS version 20. The reliability of the tool was found to be 0.721. Hence, the developed tool was highly reliable.

Result and Discussion

Tables 2 and 3 revealed that in the positive emotion happy, out of 18 sub components or variables only 10 are selected. The components h1, h2, h4, h8, h12, h13, h14 and h17 are not selected as their significant values are 0.397, 0.1.00, 0.93, 1.00, 0.570, 0.250, 0.416 and 0.805. In another positive emotion surprise, out of 8 sub components or variables, only 4 are selected as their significant values are less than 0.05. In the case of negative emotions sad and fear, out of 12 variables (sub components) 8 and 11 variables are selected. The selected components t values are higher than 1.96 (table value) and the significant values are lesser than 0,05. This shows that there is more significant difference between the mean scores of negative variables than the positive variables. So lot of negative emotional variables is selected than the positive variables. Positive Psychological approaches that arose from positive emotions are reducing or even neutralizing the impact of emotional experiences (Gay et al 2017). Gay et al also confirms that anxiety is the vulnerable factor for depression. So the negative emotions should be assessed and found to lessen the symptom. The present study paves a way to find out the negative emotions correctly by using more number of negative variables.

Uses of the scale

This scale can be used for

- Research and survey purposes.
- It can also be used for personal assessment.
- It is useful for groups as well as individual testing.

Conclusion

The ability to symbolize feelings and put them into words provides a powerful tool for emotion regulation, influencing emotion-cognition relations, and developing high-level social skills (Carroll, E. Izard 2009). The education of people largely depends on their emotions. The students' mind is full of apprehensions and if it is not motivated properly they are unable to achieve their goal. Hence, a lot of highly intelligent students who are not emotionally well give poor performance in academic achievement. Using this emotional scale, the prospective teachers can be able to measure their positive and negative emotions and also change their negative emotions into positive one to attain their goal in life. Hence, this tool is used to evaluate the self assessment of one's own emotion known as self – awareness and also helps to correct his/her way of life.

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