

THE CORRELATION BETWEEN EMOTIONAL INTELLIGENCE AND STUDENTS' ACADEMIC ACHIEVEMENT

Case Study: Master-One Students of the Department of Mathematics-Computer-Science at the University of Ahmed Draia-Adrar- (South-West of Algeria)

Korichi Abderrazak
Ahmed Draia (Adrar) University
Education and Development Laboratory
(Adrar University)
ALGERIA
k.abder@uni-adrar.dz

Chouchane Mohamed Tahar
Ahmed Draia (Adrar) University
Education and Development Laboratory
(Adrar University)
ALGERIA
chouchane01@hotmail.com

ABSTRACT

While intelligence is very important to evaluate how people are intelligent, the success in life depends more on E.Q (Emotional Quotient) which is the ability to be conscious and aware of, understand and manage our emotions. Therefore, growing number researches suggested that Emotional Intelligence (E.I) is a key determinant of success in the life. Daniel Goleman was the first who brought 'emotional intelligence' to a wide audience. This paper aims to investigate the correlation between Emotional Intelligence and students 'academic achievement among the master-one students (2017-2018) of the department of Mathematics-Computer-Science, specialized in "System Intelligent" at the University of Adrar. For this reason, two research-instruments were designed to collect data and delivered to students (self-assessment questionnaire designed by Daniel Goleman to get thinking about the various competences of emotional intelligence) and teachers 'interview to evaluate their awareness about this concept. Finally, our study examined the reliability and validity of a new measure of Emotional Intelligence and concluded that success in life is largely, duo to the emotional Intelligence.

Keywords: Emotional Intelligence, self-assessment, competence, Validity, reliability.

INTRODUCTION

Emotional Intelligence (EQ) is relatively a new behavioral model, raised to evidence with Goleman's bestseller book entitled "Emotional Intelligence" in 1995, which argues that Intelligence Quotient (I.Q) is too narrow, shows and dictates how successful certain people are more than others in their life and possess the ability to reason about and use emotions to enhance thoughts more effectively than others. Some educators are aware of the importance of general intelligence in improving the level of their students, few of them try to incorporate another aspect of intelligence which is Emotional Intelligence (E.Q) in their classrooms to probably raise their students 'level and then the students ' achievement becomes better than with the classical system.

This study aims to investigate the correlation between Emotional Intelligence and students 'academic achievement of the master-one students at the department of Mathematics-Computer-Science, specialized in "System intelligent" at the University of Adrar, and focused on the following question: What correlation has the measured Emotional Intelligence (E.Q) on these students ?.

LITERATURE REVIEW

Emotional Intelligence remains a useful construct for assessing the individual's faculty to understand and control their feelings and can be a significant factor in helping them to become more effective in their today's stressfully environment.

Brackett, A.; Rivers, S.E.; & Salovey, P. (2011, p.89). "Emotional Intelligence was presented as a way to conceptualize the relation between cognition and affect. Historically, "emotion" and "intelligence" were viewed as being in opposition to one another (Lloyd, 1979)."

Because the concept of emotional intelligence is relatively recent, there is a controversy regarding the definition of this construct and the measures employed which led to numerous ways of defining it.

Definition of Emotional Intelligence:

A clear and scientifically useful definition of this concept deals very often with the term "emotion & intelligence" seriously.

Elbrahimi, M.R., Khoshsima, H.; & Zare-Behtash, E. (2018, p.438) mentioned that emotional intelligence can be defined as follows" The ability to one's own and other people's emotions, to discriminate between different emotions and label them appropriately and to use emotional information to guide thinking and behavior. E.I. also reflects abilities to join intelligence, empathy and emotions to enhance thought and understanding of interpersonal dynamics."

Branches of Emotional Intelligence

The psychologists such Mayer & Salovey in 1997 have defined four discrete mental abilities referred to as "branches" which comprises emotional intelligence and are as follows:

Salovey, P.; Caruso, D.; & Mayer, J.D. (2004, p.451).

Branch 1: Perceiving Emotion

- Faces: Identifying emotions expressed in faces
- Pictures: Identifying emotions suggested by photographs of landscapes and abstract artistic designs

Branch 2: Using Emotions to Facilitate Thought

- Sensations: Matching tactile, taste, and color terms to specific emotions
- Facilitation: Indicating how moods and emotions affect cognitive processes such as thinking, reasoning, problem solving, and creativity.

Branch 3: Understanding Emotions

- Blends: Identifying the emotions that may encompass a complex feeling state.
- Changes: Noticing how feelings and emotions progress or transition from one state to another.

Branch 4: Managing Emotions

- Management: Estimating the effectiveness of various strategies that could modify a person's feelings in various situations.
- Relations: Estimating the consequences of various strategies for emotional reactions involving other people.

Table 1: The Four-Branch Model of Emotional Intelligence as Operationalized by the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT V2.0)

Models of Emotional Intelligence

In the last decades, emotional intelligence raised into evidence and led to some emotional intelligence models and measures represented by three major perspectives, which are as follows:

- a) "The first model consists on Mayer, Salovey, & Caruso (2000) model that frames E.I. as a group of mental abilities that process emotions.
- b) The second model is the Bar-On (2000) model of emotional and social intelligence, which frames E.I. as the personal characteristics that allow one to adapt emotionally and socially challenges.
- c) The third model is Goleman & Boyatzis model (Boyatzis, Goleman, & Rhee, 2000) that frames E.I. as a group of abilities and skills in the emotional and social realm that predict career success."

Chang, K.B.T. (2006, p.3).

Daniel Goleman was the first who brought 'emotional intelligence' to a wide audience with his Best-seller book, published in 1995. He found that while the qualities traditionally associated with leadership such as intelligence, toughness, determination and vision are required for success, they are insufficient and they proposed these five emotional intelligence skills:

▪ **Self-Awareness (SA)**

The ability to recognize what you are feeling, to understand your habitual emotional responses to events and to recognize how your emotions affect your behavior and performance. When you are self-aware, you see yourself as others see you, and have a good sense of your own abilities and current limitations.

▪ **Self-Awareness (SA)**

The ability to recognize what you are feeling, to understand your habitual emotional responses to events and to recognize how your emotions affect your behavior and performance. When you are self-aware, you see yourself as others see you, and have a good sense of your own abilities and current limitations.

▪ **Motivating Oneself (MO)**

The ability to use your deepest emotions to move and guide you towards your goals. This ability enables you to take the initiative and to persevere in the face of obstacles and setbacks.

▪ **Empathy (E)**

The ability to sense, understand and respond to what other people are feeling. Self-awareness is essential to having empathy with others. If you are not aware of your own emotions, you will not be able to read the emotions of others.

▪ Social Skill (SS)

The ability to manage, influence and inspire emotions in others. Being able to handle emotions in relationships and being able to influence and inspire others are essential foundation skills for successful teamwork and leadership.

“Leadership Toolkit, (n.d), (E.I) Emotional Intelligence Questionnaire”

METHODOLOGY

This study is an investigation of the psychometric properties of E.I., that includes the analysis of the research design, the description of the population and sample, the explanation of the data collection and the instrumentation used as a major tool of collection data represented by Daniel Goleman Emotional Intelligence measure, the research variables, the discussion of the data analysis and then the conclusion.

The purpose of this correlational study is to explore the E.I. level of the targeted students participating in this work and seeks to explore the strength of the relationship existing between the two major variables “E.I scores of the participants measured by Daniel Goleman EQ.i and their final grades (GA) of the academic year (2017-2018).”

The population of interest for this study comprises:

- The master-one students (2017.2018)
- The teachers

These participants were selected and recruited according to their desire to participate to the study; their participation was strictly based on a voluntary. They have received an oral detailed explanation about the research such as the protection of the privacy, the right to withdraw of the research at any time and for any reason.

The demographics of this sample (25 students) was the master-one students of the academic year 2017-2018 having participated to our survey.

The teachers have collaborated freely, easily and seriously by providing their own ideas and collaboration. They were 13 teachers; most of them are specialized in Computer-Science with different level of graduation.

The instrumentation was represented by two questionnaires for both students and teachers of the same department. The selected instrument tool for the students was the Daniel Goleman E.Q.i, which consists of 50 items clustered under 5 scales that include 10 items.

Subscales	Items Number
Self-awareness (SA)	1.6.11.16.21.26.31.36.41.46
Managing Emotions (ME)	2.7.12.17.22.27.32.37.42.47
Motivating Oneself (MO)	3.8.13.18.23.28.33.38.43.48
Empathy (E)	4.9.14.19.24.29.34.39.44.49
Social Skills (SS)	5.10.15.20.25.30.35.40.45.50

Table 2 : Daniel Goleman E.Q.i subscales

RESULTS AND DISCUSSION

This part of the study concerns the scores achieved by the students in the EQ.i inventory, the analysis, and the interpretations of the teachers' interviews and focuses on testing the hypotheses mentioned above as well as giving the answers to the research questions related to these research hypotheses. We need to mention, that in this work, we have used these scores to assess the students, which are:

- 1 indicates that the statement does NOT apply at all
- 3 indicates that the statement applies about half the time
- 5 indicates that the statement ALWAYS applies to you

These scores were attributed an order of 1, 2, 3, 4, 5. After that, the SPSS process was practiced to analyze the data.

Section One: The analysis of the EQ.i inventory. (Students' Questionnaire)

Reliability Analysis

The reliability of the instrument measure "EQ.i" Inventory" is determined by the application of Chronbach's Alpha Coefficient, which provides with the properties of the items of each scale. For this reason, SPSS (Version: 20) Reliability Analysis was conducted and calculated to check the reliability coefficient of the questionnaire. Chronbach's Alpha values equal or above 0.6 are considered reliable. Thus, the results obtained from this study showed that Chronbach's Alpha is positive .963, so the results of the items were reliable. "See Table 3 below

Case Processing Summary

	N	%
Valid	25	100.0
Cases Excluded ^a	0	.0
Total	25	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.963	50

Table 3: Reliability Statistics

Descriptive Statistics

The descriptive statistics used to analyze the data are represented as follows:

- maximum, minimum, mean, and standard deviation
- The statistical summaries of the final grades (GA) and EQ.i scales (Self-awareness: SA, Managing emotions: ME, Motivating oneself: MO, Empathy: E, Social skills: SS) are given in the table below:

	N	Minimum	Maximum	Mean	Std. Deviation
SA	25	2.4000	4.9000	4.144000	.6652568
ME	25	2.5000	4.8000	3.944000	.5627907
MO	25	2.2000	4.6000	3.908000	.6231105
E	25	2.2000	4.4000	3.772000	.5111425
SS	25	2.1000	4.5000	3.912000	.5540156
Total	25	2.5200	4.5800	3.945600	.5235303
GA	25	5.2850	16.1450	11.851600	2.1183684
Valid N (listwise)	25				

Table 4 : Descriptive Statistics

- ✓ The values of GA (General Average) are from (5.28) to (16.14) with a mean of (11.85).
- ✓ The mean scores of the five emotional scales are respectively: (4.14); (3.94); (3.90); (3.77); (3.91).
- ✓ The main values of total EQ.i are ranged from 2.52(126) to 4.58(229) with a mean of 3.94(197).

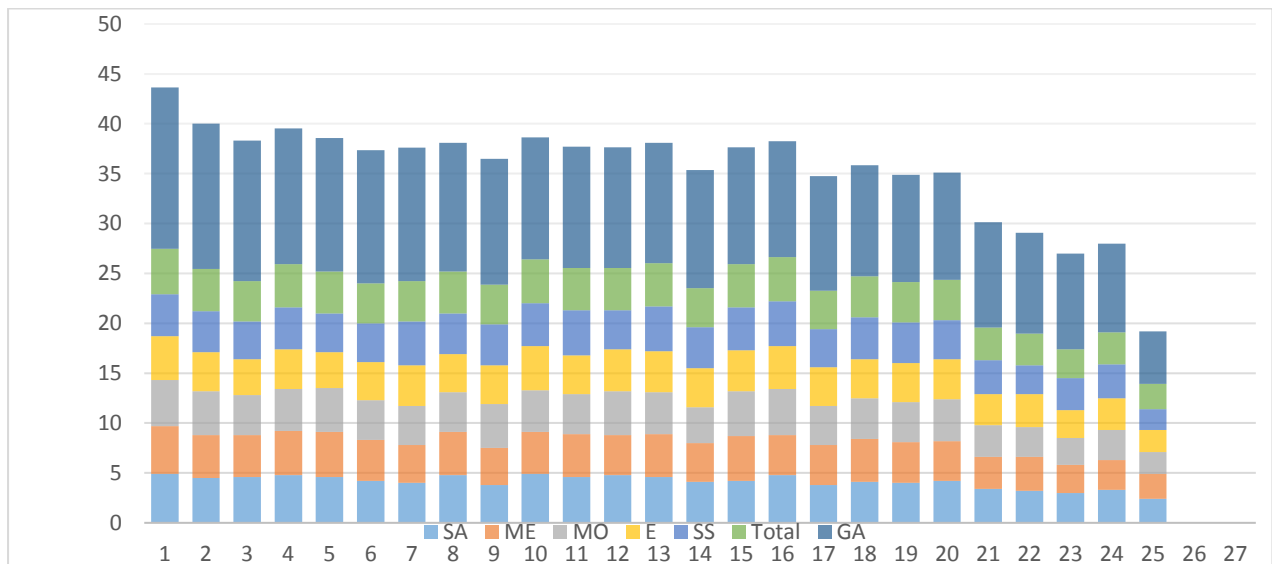


Figure 1: Total for each area of competency

35---50	This area is a strength
18---34	Giving attention
10---17	Make this area a development priority.

Table 5: Summary for each area of competency

EQ.i	Class	Number of students	Percentage %
35--50	Strength area	21	84%
18--34	Giving attention	4	16%
10--17	Development priority.	0	0%

Table 6: Students 'EQ.i scores

This table indicates that 21 students (84%) belong to the strength area of Emotional Intelligence while 04 students (16%) need attention to use their Emotional Intelligence but no one of the total students requires specific interest to develop and use their Emotional Intelligence.

CONCLUSION

The most majority of our sample representing 84% are strong in their Emotional intelligence and their results show clearly those students with strong Emotional Intelligence achieve better their results.

Correlation between EQ.i Scores and Final Grades(GA): The two Variables.

		SA	MO	ME	E	SS	Total	GA
SA	Pearson Correlation	1	.896**	.883**	.857**	.833**	.949**	.807**
	Sig. (2-tailed)		.000	.000	.000	.000	.000	.000
	N	25	25	25	25	25	25	25
MO	Pearson Correlation	.896**	1	.900**	.840**	.813**	.942**	.822**
	Sig. (2-tailed)	.000		.000	.000	.000	.000	.000
	N	25	25	25	25	25	25	25
ME	Pearson Correlation	.883**	.900**	1	.907**	.863**	.963**	.790**
	Sig. (2-tailed)	.000	.000		.000	.000	.000	.000
	N	25	25	25	25	25	25	25
E	Pearson Correlation	.857**	.840**	.907**	1	.905**	.949**	.735**
	Sig. (2-tailed)	.000	.000	.000		.000	.000	.000
	N	25	25	25	25	25	25	25
SS	Pearson Correlation	.833**	.813**	.863**	.905**	1	.929**	.724**
	Sig. (2-tailed)	.000	.000	.000	.000		.000	.000
	N	25	25	25	25	25	25	25
Total	Pearson Correlation	.949**	.942**	.963**	.949**	.929**	1	.822**
	Sig. (2-tailed)	.000	.000	.000	.000	.000		.000
	N	25	25	25	25	25	25	25
GA	Pearson Correlation	.807**	.822**	.790**	.735**	.724**	.822**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	
	N	25	25	25	25	25	25	25

** . Correlation is significant at the 0.01 level (2-tailed).

Table 7: Correlations between the two variables

CONCLUSION

These results showed that good positive correlations are found between the five emotional intelligence scales and the final grades or "General Average" synonym of the good achievement of the participants.

Multiple Linear Regression Model

After conducting the Multiple Linear Regression (MLRA) on the candidate model represented by the five emotional intelligence scales as determined by Daniel Goleman, the results are as follows:

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.840 ^a	.706	.628	1.2918991

a. Predictors: (Constant), SA, ME, MO , E , SS.

Table 8 : Model Summary

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	75.989	5	15.198	9.106	.000 ^b
	Residual	31.711	19	1.669		
	Total	107.700	24			

a. Dependent Variable: GA

b. Predictors: (Constant), SA, ME, MO , E , SS.

Table 9: ANOVA^a (Analyze Of Variance)

The results obtained and shown in the table above (Table 9) revealed that the value (Sig) in the ANOVA table is less than 0.01 (1%) indicating that there is statistically significant correlation between the five emotional intelligence skills and the students' final grades (GA) i.e. students' academic achievement at the level of 99%.

Section Two: Teachers 'Interviews

Most of the teachers participating to this interview are male, having different teaching experiences and no one of them has had any kind of training related to this concept, but all have already heard of emotional intelligence during their career.

The majority of them think that emotions influence student's outcomes, mentioned that emotions are the drive of their daily decisions and a student's appetite to learn is deeply affected by the emotions, which are an important factor that affects the student's level. They also strongly agree that every teacher should take care of their students' emotions, should also perform that on case-by-case basis, and it would be helpful to include some activities to enhance this faculty for a better learning performance especially in classrooms. They suggested some activities to enhance the student's emotional intelligence, such as scientific competitions, sport activities, and a completely healthy environment between students by developing good relations between them and their teachers.

Finally, all teachers supported the concept of emotional intelligence and its application in different areas of education from primary schools to universities in order to improve the process of teaching and learning.

GENERAL CONCLUSION

The objective of the study conducted in this research is to answer the research questions and to assess the proposed assumptions. The main purpose is to determine the possible existence of effects

between E.I. and student's academic achievement as well as the correlations of E.I. scales and the student's final grades.

The first part attempts to review the literature related to the independent variable, which is E.I., and give a general idea about the emotional intelligence measure used in this work and consists of Daniel Goleman test.

The second part attempted to identify the student's E.I. degree through Daniel Goleman test in order to compare these degrees with the student's general average (GA) i.e. final grades and to examine the relationship between these two variables.

On the other side, an interview has been conducted with the teachers of the same department in order to pick up information concerning our subject by revealing the teachers' awareness towards the concept of E.I.

As a conclusion, the results showed valuable existence of relationship between E.I. and students 'academic achievement and E.I. is a major factor to improve their performance since strong positive correlation exists between these two variables.

APPENDICES

Appendix A: Students 'Emotional Intelligence Questionnaire: EQ.i "Daniel Goleman Test"'.
Instructions

Instructions

Read each statement and decide how strongly the statement applies to you. Mark your choice by putting tick mark (✓) in front of each statement. Make sure that there should be only one tick mark in front of each statement. There are neither right or wrong answers nor good or bad choices. Answer carefully and honestly by showing how you actually are and not how you would like to be.

Score yourself from 1 to 5 based on the following guide:

1- Does not apply 3- Apply half a time 5- Always applies

How much does each statement apply to you

Mark your score

		1	2	3	4	5
1	I realize Immediately when I lose my temper	1	2	3	4	5
2	I can 'reframe' bad situations quickly	1	2	3	4	5
3	I am able to always motive myself to do difficult tasks	1	2	3	4	5
4	I always able to see things from the other person's viewpoint	1	2	3	4	5
5	I am an excellent listener	1	2	3	4	5
6	I know when I am happy	1	2	3	4	5
7	I do not wear my 'heart on my sleeve'	1	2	3	4	5
8	I am usually able to prioritize important activities at work and get on with them	1	2	3	4	5
9	I am an excellent at empathizing with someone else problem	1	2	3	4	5
10	I never interrupt other people's conversations	1	2	3	4	5

11	I usually recognized when I am stressed	1	2	3	4	5
12	Others can really tell what kind of mood I am in	1	2	3	4	5
13	I always meet deadlines	1	2	3	4	5
14	I can tell if someone is not happy with me	1	2	3	4	5
15	I am good at adapting and mixing with a variety of people	1	2	3	4	5
16	When I am being 'emotional' I am aware of this	1	2	3	4	5
17	I rarely 'fly off the handle' at other people	1	2	3	4	5
18	I never waste time	1	2	3	4	5
19	I can tell if a team of people are not getting along with each other	1	2	3	4	5
20	People are the most interesting thing in life for me	1	2	3	4	5
21	When I feel anxious I usually can account for the reason's'	1	2	3	4	5
22	Difficult people do not annoy me	1	2	3	4	5
23	I do not prevaricate	1	2	3	4	5
24	I can usually understand why people are being difficult towards me	1	2	3	4	5
25	I love to meet new people and get to know what makes them 'tick'	1	2	3	4	5
26	I always know when I'm being unreasonable	1	2	3	4	5
27	I can consciously alter my frame of mind or mood	1	2	3	4	5
28	I believe you should do the difficult things first	1	2	3	4	5
29	Other individuals are not 'difficult' just 'different'	1	2	3	4	5
30	I need a variety of work colleagues to make my job interesting	1	2	3	4	5
31	Awareness of my own emotions is very important to me at all times	1	2	3	4	5
32	I do not let stressful situations or people affect me once I have left work	1	2	3	4	5
33	Delayed gratification is a virtue that I hold to	1	2	3	4	5
34	I can understand if I am being unreasonable	1	2	3	4	5
35	I like to ask questions to find out what it is important to people	1	2	3	4	5
36	I can tell if someone has upset or annoyed me	1	2	3	4	5
37	I rarely worry about work or life in general	1	2	3	4	5

38	I believe in 'Action this Day'	1	2	3	4	5
39	I can understand why my actions sometimes offend others	1	2	3	4	5
40	I see working with difficult people as simply a challenge to win them over	1	2	3	4	5
41	I can let anger 'go' quickly so that it no longer affects me	1	2	3	4	5
42	I can suppress my emotions when I need to	1	2	3	4	5
43	I can always motivate myself even when I feel low	1	2	3	4	5
44	I can sometimes see things from others' point of view	1	2	3	4	5
45	I am good at reconciling differences with other people	1	2	3	4	5
46	I know what makes me happy	1	2	3	4	5
47	Others often do not know how I am feeling about things	1	2	3	4	5
48	Motivations has been the key to my success	1	2	3	4	5
49	Reasons for disagreements are always clear to me	1	2	3	4	5
50	I generally build solid relationships with those I work with	1	2	3	4	5

Appendix B: Teacher's questionnaire

This questionnaire aims to shed light on the student's emotional intelligence and its influence on their outcomes. Please, read carefully the following questions and answer them honestly, as much as you can. Your answers will be treated anonymously and will not be published at any time and for any reasons. Thank you in advance.

Q 1: Teacher's background information

- Gender:
- Specialty M F
- Domain of teaching
- Diplomas.....
- Teaching experience (Number or years).....
- Modules taught.....
- Universities of the formation.....

Q 2: Have you heard of emotional intelligence during your career of teaching?

Q 3: Do you ^{Yes} of training on emoti ^{No} nce?

Q4: Do you think that ^{Yes} ons have an influence on stud ^{No} outcomes?

If yes, expl No

Q5: According to you, what are the effects of emotional intelligence on student's results?

.....

Q6: Do you agree that the teacher should take care of their student's emotions in the classroom?

Strongly agree
 Agree
 Strongly Disagree
 Disagree

Q7: Is it important and explicit to design some activities that enhance student's emotional intelligence?

Yes

If yes, why: explain

.....
Q8: What are the activities that enhance student's emotional intelligence?

.....
Q9: As teacher, does emotion affect the way you teach and how?

.....
Q10: Your comments and suggestions.

Thank you

REFERENCES

- 1- Brackett, A.; Rivers, S.E.; & Salovey, P. (2011). *Emotional Intelligence: Implications for Personal, Social, Academic, and Workplace Success*. Social and Personality Psychology Compass 5/1 (2011) : 88–103, 10.1111/j.1751-9004.2010.00334.x.
- 2- Chang, K.B.T. (2006). *Can We Teach Emotional Intelligence*. Faculty Publications - Psychology Department. Department of Psychology. George Fox University, kchang@georgefox.edu.
- 3- Ebrahimi, M.R.; Khoshsima, H, & Zare-Behtash, E. (2018). *The Impacts of Emotional Intelligence Enhancement on Iranian Intermediate EFL learners Writing Skill*. International Journal of Instruction. January 2018 • Vol.11, No.1e-ISSN: 1308-1470 • www.e-iji.net p-ISSN: 1694-609X .pp. 437-452.
- 4- Leadership Toolkit ,(n.d). *(E.I) Emotional Intelligence Questionnaire* , available from the world wide web: https://w.w.w.drugsandalcohol.ie/.../1/Emotional_intelligence_questionnaire-LAL1.pdf
- 5- Salovey, P.; Caruso, D.; & Mayer, J.D. (2004). *Emotional Intelligence in Practice*. C H A P T E R 2 8. Positive Psychology in Practice. Edited by P. Alex Linley and Stephen Joseph. Copyright © 2004 John Wiley & Sons, Inc.