

# Effect of Information and Communication Technology on Emotional Intelligence among Adolescents

<sup>1</sup>Shoab Hasan & <sup>2</sup>PSN Tiwari

<sup>1</sup>Research Scholar, Department of Psychology, DDU Gorakhpur University, Gorakhpur (India)

<sup>2</sup>Professor, Department of Psychology, DDU Gorakhpur University, Gorakhpur (India)

---

## ARTICLE DETAILS

### Article History

Published Online: 13 March 2019

### Keywords

ICT, Emotional Intelligence, age, gender, adolescence

---

---

## ABSTRACT

Information and communication technologies (ICT) have vitally changed human society and that had been unknown in the previous years. Nowadays, ICT affected all aspects of our daily life and these alterations are in some cases good, while some have had contrary negative effect on adolescence. For that reason, it is important to examine the covert relationship between these exposures. Therefore, this study was planned to investigate the possible relationship between ICT uses and emotional intelligence among adolescence. A sample of 140 undergraduate students (male=52&female=88), studying in different departments of DDU Gorakhpur University, Gorakhpur were administered Information and Communication Technologies scale constructed by researchers and Schutte (2010) Emotional Intelligence scale. Obtained data was subjected to correlation and stepwise multiple regression analysis. Results revealed that there is strong relationship between ICT and Emotional Intelligence. It also showed positive relationship with Age. The implications of the findings are also discussed in the light of empirical evidences.

---

## 1. Introduction

As we know that an adolescent is a developmental stage which defined as starting with puberty and ending with the switch to adulthood almost ages 10-20 years. Evidence indicated that this stage is lengthening as individual start puberty earlier and transition to adulthood later than in the past historically. Literatures argued that puberty begins, on average, at age 10-11 years for girls and 11-12 years for boys. After the 19<sup>th</sup> century, this average age has decreased gradually three to four months per decade, which has been endorsed to a range of many factors containing better nutrition, fatness, increased father absence, and other environmental issues (Steinberg, 2013).

Adolescents are often described as a time of "storm and stress" because it's a period of noteworthy biological and social changes, (Hall 1904). It is a vital time for the overall development of an individual both mentally and physically. Boys and girls, both are interchanged from the infantile stage of life to a more complex stage of adolescence. In Piaget words, adolescence as the stage of life in which the individual's thoughts start taking more of an abstract form and the egocentric thoughts decrease. India Guide: Population of India: Census of India; (2011) described that one in five persons of the world today is an adolescent and eighty-seven percent of these adolescents live in developing countries while the adolescent population in India is 253 million, accounting for about 21% of total population. In addition, Karnataka has a current population of six crores eleven lac thirty thousand seven hundred four with adolescents about 18.9% of the population.

Information and communication technologies (ICT) have vitally changed human civilization and affected all aspects of our daily life. ICT has been widely used as a medium for communicating and networking. Adeniyi (2006) noticed that technology is a product of human thought or ideas; it is a tool

man has to develop, to perform certain tasks. For example, ICT use implies adaptation skills, enabling creativity, the development of solutions, group work flexibility, problem-solving and respect for interpersonal relationships differences. Technology also provides humans with the means of determining what is happening in the world as well as a means of changing the world to make it more suitable for our own purpose. ICT applications especially the use of the Internet becomes naturally justified in human life. ICT covers a wide variety of devices and applications that serve to ease and enhance proficiency in daily activities. Any sort of information and communication appliances, hardware and software such as smartphones, computers, radio, TV, and variety of applications, such as gaming, social networking, instant messaging, and texting could involve ICT. Compared to other age groups, An adolescent is the largest consumer of this technology. They spend more time online than adults and surpass all other age groups in their use of chat, instant messaging and other new forms of electronic communication (Montgomery, K., 2000).

Adolescence has access to a variety of information through the internet which contains different materials that are made available for the general public, with no restriction on age. These have brought some vices among adolescence nowadays. The alterations of ICT in the different aspect of our lives are in some cases good, while some have had the contrary negative effect on adolescence. So, the researcher carried out the study, in order to find out the relationship between Information and Communication Technology and Emotional Intelligence among adolescence. In this context, the term ICT mainly refers to the use of the internet, mobile phones, computers, laptops for calling, texting, gaming, browsing and using various social networking sites, etc. for both occupational and leisure purposes and the time spent by them on many different ICT devices.

Emotional intelligence is the ability to identify and manage your own emotions and the emotions of others. It is generally said to include three skills:

1. Emotional awareness, including the ability to identify your own emotions and those of others;
2. The ability to harness emotions and apply them to tasks like thinking and problem-solving;
3. The ability to manage emotions, including the ability to regulate your own emotions, and the ability to cheer up or calm down other person.

In general emotional intelligence is the ability to detect and accomplish our own feelings and emotions and the emotions of others, which usually included three skills: First, emotional awareness, including the ability to recognize your own feelings and emotions and same of others; second, the ability to harness emotions and apply them to tasks like thinking and problem-solving; and third the ability to manage emotions, including the ability to regulate your own emotions, and the ability to cheer up or calm down other person. Salvoes and Mayer (1990) argued that, "emotional intelligence take in an ability to monitor one's own and others' feelings and emotions, to distinguish among them and to use this info to guide one's thinking and activities".

Some studies have shown that people with high EI have greater mental health, typical job performance, and more effective leadership skills. For instance, Goleman's addressed in his research volume that, "in work with emotional intelligence, showed that EQ accounted for 67% of the abilities deemed essential for superior performance in leaders, and signified two times as much as technical capability or IQ". Researchers have shown that emotional intelligence predicts academic performance and other cognitive outcomes (Adenuga&Ayodele, 2009; DenizTras&Aydogan, 2009; Berenson, Boyles & Weaver, 2008; Harrod&Scheer, 2005). Emotional Intelligence has reaped attention from psychologist, educators, leadership theorists and business leaders (Burbach, et. al 2003). Similarly, Irvin JL, Richardson TL.( 2002) showed in his studies that emotionally literate students have mastered the emotional abilities that inoculate them against the turmoil and pressure they are about to face during life transitions. If we are to understand the schooling of young adolescents, then we must understand how they respond to their learning environment and we must be aware that there are reasons why students respond differently.

## 2. Objectives of the study

The researcher came up with the following objectives.

1. To point out the gender difference between information and communication technology among adolescence.
2. To know the gender difference between emotional intelligence and its different dimensions among adolescence.
3. To examine the relationship between information and communication technology and various dimensions of emotional intelligence.
4. To know the contribution of ICT in various dimensions of emotional intelligence.

## 3. Research Questions

For the purpose of this study the following questions were raised.

1. What is the gender difference between information and communication technology among adolescence?
2. What is the gender difference between male and female on Emotional Intelligence among adolescence?
3. What is the relationship between information and communication technology and Emotional Intelligence among adolescence?
4. What is the contribution of ICT in emotional intelligence and its various dimensions?

## 4. Research Hypotheses

For the purpose of this study the following hypotheses were raised.

1. Information and communication technology will show positive and significant relationship with emotional intelligence among adolescence.
2. There will no significant gender difference found in information and communication technology among adolescence.
3. Gender will differ significantly on various dimensions of emotional intelligence among adolescence.
4. ICT will significantly play a role in predicting different type of emotional intelligence i.e., appraisal and expression of emotion, regulation of emotion in self and others, and utilization of emotion

## 5. Methodology

### Research Design

The course of this study first was to select the sampling group to carry out the study. In this case, the sample included a group of adolescents of the age group 11-19 years. The study then included the selection of the appropriate methods like scales to assess the variables to be measured. Following the assessment of the variables, a right statistical approach was taken to authenticate the results for their significance. At last, the proposed hypothesis as well as the old literature was crosschecked with the original results to elucidate the purposeful result.

### Sample

A heterogeneous sample of 140 students (male= 52 & female= 88) of undergraduate, studying in different departments of DDU Gorakhpur University, Gorakhpur took part in this study.

### Measures

Keeping our variables, the aims of the study, and the nature of the sample, appropriate tools were selected. For measuring information and communication technology usage and emotional intelligence, Information and Communication Technologies Scale constructed by researchers and Shrutt Emotional Intelligence Scale (2010) are given as follows:

**Information and Communication Technology usage Scale:** The scale is developed by researchers to measure an individual's information and communication technology use. The 4- point Likert type scale consists of 21

items. The reliability analysis of the scale gives a Cronbachalpha reported as .68 for total score.

**Emotional Intelligence Scale by Schutte et-al (2010):**

The scale is developed by Schutte (2010) to assess a broad range of emotional intelligence responses. The emotional intelligence scale is comprised of 20 four item scales that assess a variety of emotional intelligence. I used 'trait like' version in respondents indicate how frequently they engaged in each emotional intelligence on a 4-point scale anchored by "usually do not do this at all" and "usually do this a lot". The measure has good psychometric properties with alphas ranging from .45 to .92, test-retest reliabilities ranging from .46 to .86, and strong evidence of discriminant and convergent validity, with constructs such as hardiness, optimism, control, and self-esteem. The emotional intelligence scales has following dimensions:

The Appraisal and Expression of Emotion in Self and Others

The Regulation of Emotion in Self and Others

The Utilization of Emotion in Solving Problem

**6. Procedure**

The above mentioned questionnaires were compiled in order as follows: Information and Communication Technologies Scale and Emotional Intelligence Scale and the personal data sheet and informed consent form' consisted of the demographic information about the participants followed by an informed consent. Participants were explained the purpose of the study, eligibility criteria, the voluntary nature of participation and the procedure participants would be involved in. After this information, the potential participants were asked to indicate whether they agree to participate in the study, individuals who did not want to participate in the study were thanked for their time. The psychometric tests were administered to participants either individually or in small groups of 3 to 4 persons. Instructions related to each scale were clearly explained to each participant and their queries (if any) were attended appropriately. The obtained data were subjected to One way ANOVA, bivariate correlation and stepwise multiple regression with the help of IBM SPSS 20 statistical package.

**7. Results**

To tap the nature and magnitude of Emotional Intelligence across genders, one way ANOVA was performed and the result are presented in table- 1

*Table .1- Means and SDs of dimensions of Emotional Intelligence as a function of Gender*

Emotional Intelligence & it's dimensions	Gender	Mean	SD	N
Appraisal and Expression of Emotion	Male	31.46	3.03	52
	Female	29.36	5.08	88
Regulation of Emotion in Self and Others	Male	22.15	3.51	52
	Female	20.31	3.63	88
Utilization of Emotion	Male	18.69	2.45	52
	Female	16.04	3.14	88
Emotional Intelligence Total	Male	72.30	7.10	52
	Female	65.72	8.24	88

Note-  $p < 0.01$  \*\*  $p < 0.05$ \*

The one-way ANOVA evinced that the male and female adolescents differ significantly on the various dimension of Emotional Intelligence i.e.; Appraisal and Expression of Emotion [ $F(1,38) = 7.30, p < .01$ ], Regulation of Emotion in Self

and Others [ $F(1,38) = 8.55, p < .01$ ], Utilization of Emotion [ $F(1,38) = 27.10, p < .01$ ] and Emotional Intelligence total [ $F(1,38) = 23.02, p < .01$ ] (see table- 2).

*Table .2- Summary of One-Way ANOVA for Emotional Intelligence with its dimensions*

Source of Variance		SS	df	MS	F
Appraisal and Expression of Emotion	Between Groups	143.856	1	143.856	7.30**
	Within Groups	2721.29	138	19.719	
Regulation of Emotion in Self and Others	Between Groups	110.140	1	110.140	8.55**
	Within Groups	1777.86	138	12.883	
Utilization of Emotion	Between Groups	228.991	1	228.991	27.10**
	Within Groups	1166.895	138	8.456	
Total Emotional Intelligence	Between Groups	1415.35	1	14.15.35	23.02**
	Within Groups	8484.53	138	61.48	

Note-  $p < 0.01$  \*\*  $p < 0.05$ \*

According to table- 1, male adolescents indicated more appraisal and expression of emotion in comparison to female participant. While regulation of emotion in self and others, male adolescents scored higher than female. Similarly, for utilization

of emotion and emotional intelligence total, adolescents scored higher than female.

To explore the interrelationships among ICT and various dimensions of emotional intelligence, a bivariate correlation was computed and results are presented in table- .3.

**Table .3-Coefficient of Correlation between ICT, and EI**

Variables	Appraisal And Expression Of Emotion	Regulation Of Emotion In Self and Others	Utilization of Emotion	EI
ICT	0.128	0.483**	0.200**	0.355**

Note-  $p < 0.01$ \*\*  $p < 0.05$ \*

The result revealed that ICT positively and significantly correlated with emotional intelligence ( $r = 0.355^{**}$ ) and their two dimension i.e., regulation of emotion in self and others ( $r = 0.483^{**}$ ), and utilization of emotion ( $r = 0.200^{**}$ ).

To examine the relative significance of ICT in predicting emotional intelligence, a set of stepwise multiple regression analyses were performed using ICT as predictor variables and appraisal and expression of emotion, regulation of emotion in self and others, and utilization of emotion as criterion variables. The results are presented in tables- 5

**Results of Stepwise Multiple Regression analyses using dimensions of forgiveness as predictors and coping strategies as criterion variables**

**Table- 5.1: Criterion Variables: Appraisal and Expression of Emotion.**

Predictors	R	R2	R <sup>2</sup> change	Beta	t	F
ICT	0.976	0.953	0.953	0.976	52.96**	2804.77**

Table-5.1 evinces that appraisal and expression of emotion were found to be predicted by ICT; which explain 95.3 % variance. The Beta value ( $\beta = 0.976$ ), suggested that above

mentioned variables have positive correlation in the prediction of appraisal and expression of emotion.

**Table- 5.2: Criterion Variables: Regulation of Emotion in Self and Others.**

Predictors	R	R2	R <sup>2</sup> change	Beta	t	F
ICT	0.483	0.234	0.234	0.483	6.489**	42.10**

Table-5.1 evinces that regulation of emotion in self and others were found to be predicted by ICT; which explain 23.4 % variance. The Beta value ( $\beta = 0.483$ ), suggested that above

mentioned variables have positive correlation in the prediction of appraisal and expression of emotion.

**Table- 5.3: Criterion Variables: Utilization of Emotion.**

Predictors	R	R2	R <sup>2</sup> change	Beta	t	F
ICT	0.200	0.040	0.040	0.200	2.40**	5.76**

Table-5.3 evinces that utilization of emotion were found to be predicted by ICT; which explain 40.0 % variance. The Beta value ( $\beta = 0.200$ ), suggested that above mentioned variables

have positive correlation in the prediction of appraisal and expression of emotion.

**Table- 5.4: Criteria on Variables: emotional intelligence.**

Predictors	R	R2	R <sup>2</sup> change	Beta	t	F
ICT	0.355	0.126	0.126	0.355	4.467**	0.355**

Table-5.4 evinces that emotional intelligence were found to be predicted by ICT; which explain 12.6 % variance. The Beta value ( $\beta = 0.355$ ), suggested that above emotional intelligence have positive correlation in the prediction of appraisal and expression of emotion.

has gradually turned into an important instrument for adolescents to interact and entertain with their nobles. ICT such as Facebook, WhatsApp may help students with social emotional and behavioral difficulties, especially those of high school age [Fovet, F. (2009)]. A survey result advocates that Facebook has become an important tool for adolescents for adaptation to school and their management of peer relations. Using this social network platform, they show complex patterns of variation of self-image and vigorous envelopment with nobles. Similarly, another survey on 1530 students shows that the influence of media in the formation of adolescent behaviour is at the medium level. Five factors were investigated that may give influence on students' behaviour: teachers, media, family, friends and school culture. Findings indicated that the highest contribution to the moral appreciation of the students comes from friend (30.4%), followed closely by school (30.3%), then family (28.3%), media (25.0%) and teachers (19.8%). To end with, Ibn Khaldun, A.R. Mukaddimah Ibn Khaldun.

**8. Discussion**

The aim of the present piece of work was to explore the relationship between information and communication technology (ICT) and emotional intelligence. Results indicate that information and communication technology positively and significantly correlate with emotional intelligence. In the light of the literature on the altering nature of socialization due to new technologies (Junco 2012; Lam 2012; Rouis et al. 2012; Van-Vooren and Bess 2013; Wang and Woo 2007), it could be considered that people have positive attitude to getting into contact with the world through the ICT and media tools. ICT use

DewanBahasanPustaka, Kuala Lumpur; (2002) notice that the process of human moral development is effected by parents, teachers, peers, society and the numerous types of media that a person is bare to while mounting up.

Further, gender varies significantly with various dimensions of emotional intelligence among adolescence. Male adolescents showed more appraisal and expression of emotion, regulation of emotion in self and others, utilization of emotion in comparison to female participant that means male adolescents scored higher in emotional intelligence than female. Some studies also find the same results which revealed that men have better self-perception (Kong, Zhao, & You, 2012; Mikolajczak, Luminet, Leroy, & Roy, 2007; Shi & Wang, 2007). The neurological and psychological difference between male and female may also a cause overdue growing levels of emotional intelligence of male. Besides this our culture and family also trains male children to be stronger their emotions. In the other hand Bar-On (1997b) states that women are more emotionally aware, display more empathy and relate better to others, whereas men are better at managing and regulating emotions. Women tend to score higher than men on the interpersonal scale whereas men tend to achieve higher

scores for self-perception on the intrapersonal, adaptability and stress management scales (Bar-On, 1997b; Bar-On, Brown, Kirkcaldy, & Thome, 2000; Ugarriza & Pajares, 2005). Keefer et al. (2013) found that women score higher on the intrapersonal and interpersonal scales while men score higher for adaptability.

## 9. Conclusion

The present piece of work to explore the relationship between information and communication technology (ICT) and emotional intelligence, it specifies that there are positive relationships between information and communication technology and emotional intelligence because, social networking sites have increasingly become an important tool for adolescents to interact and entertain with their nobles.

This study also introduced gender difference between emotional intelligence, which contributed to the research evidence an understanding about emotional intelligence and gender differences. The study revealed that there are significant relationships between emotional intelligence among male and female sample of adolescents.

## References

1. Aboulghasemi, A. & Nadjarrian, B. (1999). Test Anxiety: Causes of Assessment and treatment, *Psychological Researches*, 82-95.
2. Adeniyi, E.F. (2006). Computer Literacy and Interpersonal Relationships: Challenges of Technological Development for Psychology: *Educational Journal*.
3. Adeyuni, J.L and Egbedokun, A.O (2002). Using information and communication technology. (ICT) to improve the Training productivity of the graphic Artist. *Nigerian Journal of educational Media and Technology* .10(1).
4. Ahmad Munawar, I., Mohamad Zaid, M.Z., Muhd Najib, A.K. Broadcasting Media Impact to Malay Students Behavior in Malaysia, *Journal of Applied Sciences Research*, 8(5); 2012. p. 2596-2600,
5. Austin, E. J. (2008). A reaction time study of responses to trait and ability emotional intelligence test items. *Personality and Individual Differences*, 36, 1855-1864.
6. Barkley, A. P. & Forst, J. J. (2004). The determinants of first-year academic performance in the College of Agriculture at Kansas State University, 1990-1999. *Journal of Agricultural and Applied Economics*, 36 (2), 437-448.
7. Bar-On, R. (1997). Development of the Bar On EQ-i: A measure of emotional and social intelligence.
8. Brackett, M. & Katulak, N. (2007). "Emotional intelligence in the classroom. Skill-based training for teachers and students". In: Ciarrochi, Joseph/Mayer, John (eds.): *Applying emotional intelligence*. New York: 1-28.
9. Bhat. R. H. (2017). Emotional Intelligence of Adolescents in Relation to Their Test Anxiety and Academic Stress. *Rehabilitation Sciences*. Vol. 2, No. 1, , pp. 21-25.
10. D. Goleman, *Emotional Intelligence*, Lisboa: Temas e Debates, 2009.
11. D. Martin and K. Boeck, *What is the emotional inteligância*, 2nd Edition, Lisboa: Pregaminho, 1999.
12. Fovet, F. (2009) "Impact of the Use of Facebook amongst students of High School Age with Social, Emotional and Behavioural Difficulties (SEBD)", 39th ASEE/IEEE Frontiers in Education Conference, October 18 - 21, , San Antonio, TX;
13. Hairulliza Mohamad Judi et.al. (2013). Framework of ICT Impact on Adolescent. *Procedia Technology* 11 1034 – 1040 Available online at [www.sciencedirect.com](http://www.sciencedirect.com)
14. Ibn Khaldun, A.R. Mukaddimah Ibn Khaldun. Dewan Bahasan Pustaka, Kuala Lumpur; (2002)
15. India Guide: Population of India: Census of India; 2011. Available from: <http://www.censusindia.gov.in>. [Accessed on July 2015].
16. Irvin JL, Richardson TL. (2002). The importance of emotional intelligence during transition into middle school. *Middle School Journal*.; 33:55-8.
17. Junco, R. (2012). The Relationship between Frequency of Facebook Use Participation in Facebook Activities, and Student Engagement, *Computers & Education*, 58, 162-171.
18. Lam L. (2012). Review of Use of Animation as a Supplementary Learning Material of Physiology Content in Four Academic Years, *The Electronic Journal of E-Learning*, 10(4), 377-386.
19. Mayer, J., Salovey, P., & Caruso, D. (2008). Emotional intelligence: New ability or eclectic traits? *American Psychologist*, 63 (6), 503-517.
20. Montgomery, K. (2000). Youth and Digital Media: A Policy Research Agenda, *Journal of Adolescent Health*, 27(2); p. 61-68.
21. R. Bar-On and J. D. A. Parker, *Handbook of Emotional Intelligence: Theory and Application at Home, at School and at Work*, Porto Alegre: Artmed, 2002. [2] P. M. Graells. (2010). Impact of ICT in education: functions and limitations. Department of Applied Pedagogy, Autonomous University of Barcelona. [Online]. [http://www.pangea.org/peremarques/siye\\_du.htm](http://www.pangea.org/peremarques/siye_du.htm)
22. R. Bar-On, "The impact of emotional intelligence on subjective well-being," *Perspectives in Education*, vol. 23, no. 2, pp. 41-61, 2005.
23. Rouis S, Limayem M and Salehi-Sangari E (2011) Impact of Facebook Usage on Students' Academic Achievement: Role

- of Self-Regulation and Trust, *Electronic Journal of Research in Educational Psychology*, 9(3), 961–994.
24. Salovey, P. & Mayer, J. (1990). Emotional intelligence. *Imagination, Cognition and personality*, 9, 185-211.
  25. Van-Vooren C and Bess C (2013) Teacher Tweets Improve Achievement for Eighth Grade Science Students, *Systemics, Cybernetics and Informatics*, 11(1), 33–36.
  26. Wang Q and Woo H L (2007) Systematic Planning for ICT Integration in Topic Learning, *Educational Technology & Society*, 10(1), 148–156.
  27. Warschauer M (1996) Comparing Face-to-Face and Electronic Communication in the Second Language Classroom, *CALICO Journal*, 13(2), 7–26.