Impact of gadgets on emotional maturity, reasoning ability of college students

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Abstract
In the present era the introduction of modern technological gadgets has captured the attention of global population. The dependency of people on these technological gadgets and services provided by these has reached at such a level that, without these, they are unable to think a step forward in the direction of their growth. The degree of dependency is leading to addiction of the tech-devices and services. Youth is the most vulnerable group among the population to be addicted to technology. The study was design to examine the use of tech-devices by youth i.e., the time spent with the gadgets, their Emotional Maturity and Reasoning Ability. Using structured questionnaire, primary data was collected from 120 undergraduate students from different colleges of Hubli-Dharwad. The gadget use scale, Singh and Bhargav’s Emotional Maturity scale and David’s Battery of Differential Aptitude: Reasoning Ability scales were used to gather data. The respondents were categorized into two groups i.e., More Gadget Users and Less Gadget Users. The ‘t’ test was used for statistical analysis. Findings of the study showed that More Gadget Users have high emotional maturity and slightly high reasoning ability. The results are interpreted based on the current theories and implications for future are pointed out.

Keywords: Gadgets, Emotional Maturity and Reasoning Ability

Introduction
Technology is the energy that acts as the driving force to drive or to run our lives. It is nothing but the results of the innovations and creativity of human beings. It converts the natural resources into consumer goods which are used by the society and human beings. It has brought the automation level to such a height that human effort and his time has been saved to a great extent. Due to this, access to information has now become easier and the distant locations are getting closer. IT and communication system has provided such facilities that the world is now feeling like a small globe virtually. However not all technology has been used for peaceful purposes. The development of weapons of mass destruction has created serious threat to society throughout history.

Mobile/cell phone
Mobile phone or cell phone is a device that can make and receive telephone calls over a radio link while moving around a wide geographical area. Besides telephony it can also provide a variety of other services like text messaging, playing music, e-mail, internet access, infrared, Bluetooth, business applications, gaming and photography etc. It was first introduced in 1973 and in 1983 the first mobile phone was commercially available (Heeks, 2008) [18].

Computer/laptop
Computer is a general purpose device that can be programmed to carry out a finite set of arith thematic and logical operations. Computer can solve more than one kind of problem at a particular time as a sequence of operations can be readily changed. A laptop is a type of computer that can be folded and easily carried out due to its’ small size and battery support for energy, required to run it. The first laptop was invented in 1979 by British Designer Bill Maggridge. For the laptop producers the year 1989 was quite successful. Now the laptops are generally used for making programs, storing data, entertainment (music, videos), accessing net etc.

Smart Phone
A smart phone, or smart phone, is a type of mobile phone built on a mobile operating system with more advanced computing capability and connectivity than a feature phone.
Services: Internet
The internet is a huge network that links computers together all over the world using a range of wires and wireless technologies. The World Wide Web is the collection of linked pages those are accessed using the internet and a web browser. The purposes of using internet are online shopping, social networking, games, news, travel information, business, advertising and much more. One of the best common ways of finding information on the web is through the search engines like Google, Bing. A social networking service is a platform to build social networks or social relations among people who, for example, share interests, activities, backgrounds, or real-life connections.

Emotional Maturity
Emotion is the complex psycho physiological experience of an individual’s state of mind as interaction with biochemical (internal) and environmental (external) influence. In humans, an emotion fundamentally involves “physiological arousal, expressive behaviors and conscious experience.” Emotion is associated with mood, temperament, personality, disposition and motivation. Motivations direct and energize behavior, while emotions provide the affective component to motivation, positive or negative. A related distinction is between the emotion and the results of emotion, principally behaviors and emotional expressions. People often behave in certain ways as a direct result of their emotional state, such as crying, fighting and fleeing. If one can have the emotion without a corresponding behavior, then we may consider the behavior not to be essential to the emotion.

Meaning and Definitions of Emotional Maturity
According to Walter D. Smithson (1974) emotional maturity is a process in which the personality is continuously striving for greater sense of emotional health, both intra-psychically and intra-personally. Kaplan and Baron elaborate the characteristics of an emotionally mature person, say that he has the capacity to withstand delay in satisfaction of needs. He has the ability to tolerate a reasonable amount of frustration. He has belief in long-term planning and is capable of delaying or revising his expectations in terms of demands of situations. An emotionally mature child has the capacity to make effective adjustment with himself, members of his family and his peers in the school, society and culture. But maturity means not merely the capacity for such attitude and functioning but also the ability to enjoy them fully.

Reasoning
Reason or “reasoning” is associated with thinking, cognition, and intellect. Reason is the capacity for consciously making sense of things, applying logic, establishing and verifying facts, and changing or justifying practices, institutions, and beliefs based on new or existing information. It is closely associated with such characteristically human activities as philosophy, science, language, mathematics, and art and is normally considered to be a definitive characteristic of human nature. The concept of reason is sometimes referred to as rationality and sometimes as discursive reason, in opposition to intuitive reason. Psychologists and cognitive scientists have attempted to study and explain how people reason, e.g. which cognitive and neural processes are engaged, and how cultural factors affect the inferences that people draw. The field of automated reasoning studies how reasoning may or may not be modeled computationally. Animal psychology considers the question of whether animals other than humans can reason.

Review of Literature

Gadget Use
Magwa Simuforosa (2013) [29] studied the impact of modern technology on the educational attainment of adolescents. The purpose was to examine the relationship between adolescent usage of computers and academic performance. Within the qualitative research the case study design was adopted. Interviews and focus group discussions were the primary tools used to gather data. The study found out that modern technology impacts learning both positively and negatively. Jyoti Ranjan Muduli (2014) [35] studied Addiction to Technological Gadgets and Its Impact on Health and Lifestyle of College Students. Primary data were collected from 150 respondents of NIT, Rourkela. Findings of the study showed that most of the young respondents spend a large amount of their time with their tech-gadgets and services provided by them. Tessa Jones (2014) [54] studied Students’ Cell Phone Addiction and Their Opinions. The author conducted field observations to examine Elon students’ behavior while walking around campus, along with an online survey. Findings suggest that students seem to be addicted to their cell phones, with 64 percent of students observed on campus interacting with their device one way or another. Nevertheless, a survey of students found that they believe that the need of self-gratification achieved through excessive cell phone use has negative psychological effects on them. Tanvir Singh, Amit Kumar, Dr. Yunfei Liu (2015) [50] have done study on the topic Personal Electronic Gadgets: A Comprehensive Study on their Addiction and Sustainable Usage. They have carried out a comprehensive study on the issue to aware the society about the unnoticed ‘Gadget Addiction’ and the possible precautions that the society can take to make sustainable usage of these unavoidable personal electronic gadgets.

Emotional Maturity
 Gurmit Singh (2014) [49] studied Mental Health of Adolescents In Relation To Emotional Maturity and Parent Child Relationship. The sample comprised of 200 9th class adolescents (100 boys and 100 girls) from Government Secondary Schools of Moga district the data was obtained by using Emotional Maturity Scale (2011) by Singh and Bhargava, Parent Child Relationship Scale (2011) by Rao and Mental Health Battery (2012) by Singh and Gupta. The results of the study showed positive and significant relation between Mental Health with Emotional Maturity also between Mental Health and Parent Child Relationship. Mojtaba Noorani, Zhaleh Refahi and Abass Gholtash (2014) [33] studied A comparison of propensity for marriage and emotional maturity between men and women. The aim of this study was to compare the propensity for marriage and emotional maturity between male and female students in Marvdasht Azad University. The research plan was descriptive – causal and the sample included 123-people. Dr. K. Rajendran (2014) [24] studied emotional maturity stage of athletes and non-athletes. The purpose of the study is to find out the emotional maturity between Athletes and non-Athletes. To achieve the purpose of the study 100 Athletes and 100 non-Athletes colleges’ students were selected at

~ 750 ~
random from different colleges and university from Tamil Nadu. The result of the study revealed that there is a significant difference between Athletes and non-Athletes in their Emotional instability, Emotional Regression, social maladjustment, personality disintegration, lack of independence and emotional maturity. It is found that Athletes are more emotionally matured than non-Athletes. Dimpy Mahanta and Vikasni Kannan (2015) [32] Emotional Maturity and Adjustment in First Year Undergraduates of Delhi University: An Empirical Study. The sample for the study consisted of 80 first year undergraduates from various colleges of Delhi University. The age ranged between 17-19 years. The sample was selected through incidental sampling technique. They were administered the Global Adjustment Scale(Studnet Form) by Sanjay Vohra and Emotional Maturity Scale by Singh and Bhargava to measure adjustment and emotional maturity, respectively. The results showed a significant positive correlation between emotional maturity and various dimensions of adjustment. Mukhtar Ahmad Wani, Prof. Aejaz Masih (2015) [36] studied Emotional Maturity across Gender and Level of Education. The sample for the present investigation was randomly drawn from different department of Jamia Millia Islamia New Delhi. A total sample of 100 (50 male & 50 female) including Post Graduates and Research Scholars were selected. The data was collected by administering the Emotional Maturity Scale developed by Prof. Yeshver Singh & Prof. Mahesh Bhargave (1990). The findings of the study revealed that majority of the post graduate students and research scholars of the university are emotionally unstable. The findings also showed that male students are emotionally immature than females on personality disintegration dimension of emotional maturity. Significant difference was also found between post graduates and research scholars on personality disintegration dimension of emotional maturity. On other dimensions of emotional maturity no difference was found between males and females and post graduates and research scholars.

**Reasoning Ability**

David P. McCabe and Alan D. Castel (2007) [13] did research under the topic seeing is believing: The effect of brain images on judgments of scientific reasoning. One-hundred fifty-six Colorado State University undergraduates between the ages of 18 and 25 participated for study. Results were significant. Meltem Baser (2007) [31] studied the contribution of learning motivation, reasoning ability and learning orientation to ninth grade international baccalaureate and national program students’ understanding of mitosis and meiosis. Participants of the study were 472 ninth grade students from a private high school in Ankara. 219 students were in International Baccalaureate Program and 253 were in National Program. Multiple regression analysis revealed that achievement was explained in positive direction by formal reasoning ability and in negative direction by active learning strategies and rote learning in National Program classes. Self-efficacy and formal reasoning ability had significant contributions to achievement for International Baccalaureate students. Daniela Mayer, Beate Sodaon, Susanne Koeber, Knut Schwippert (2014) [12] studied Scientific reasoning in elementary school children: Assessment and relations with cognitive abilities. One hundred fifty-five fourth graders were tested on 20 recently developed paper-and-pencil items tapping four different components of scientific reasoning (understanding the nature of science, understanding theories, designing experiments, and interpreting data). As confirmed by Rasch analyses, the scientific reasoning items formed a reliable scale. Model comparisons differentiated scientific reasoning as a separate construct from measures of intelligence and reading skills and revealed discriminate validity.

**Methodology**

**Need For the Study**

In the present era the introduction of modern technological gadgets has captured the attention of global population. The dependency of people on these technological gadgets and services has reached such a level that, without these, they can’t think a step forward in the direction of their growth. The degree of dependency is leading to addiction of the tech-devices and services. Youth is the most vulnerable group among the population to be addicted to technology. The study was designed to examine the use of tech-devices by youth i.e. the time spent with the gadgets and their emotional maturity and reasoning of young adults, especially focusing on faculty and gender.

**Objectives of the Study**

The present study includes two major objectives:
1. To investigate the emotional maturity and reasoning ability of the undergraduate less and more gadget users.
2. To investigate the difference between emotional maturity and reasoning ability of students of different faculty.

**Research Questions**

From the above objectives the following research questions are raised:
1. Do less and more gadget users differ significantly in their Emotional Maturity (Dimension wise and in overall scores also)?
2. Do less and more gadget users differ significantly in their Reasoning Ability?
3. Do the undergraduate students of different faculty differ significantly in their Emotional Maturity?
4. Do the undergraduate students of different faculty differ significantly in their Reasoning Ability?

**Hypotheses**

Following hypotheses are formulated and tested on above raised research question:

- **H₀₁:** Less and more gadget users differ significantly in their Emotional Maturity (Dimension wise and in overall scores also).
- **H₀₂:** Less and more gadget users differ significantly in their Reasoning Ability.
- **H₀₃:** The undergraduate students of different faculty differ significantly in their Emotional Maturity.
- **H₀₄:** The undergraduate students of different faculties influence significantly on their Reasoning Ability.

**Research Design**

- Independent variable: Extent of Gadget use.
- Dependent Variable: Emotional Maturity and Reasoning Ability.

**Ethical Issue**

1. The nature and purpose of the study was explained before administering the scales.
2. Confidentiality was assured.
Sample
A sample of 120 undergraduate students studying in different colleges of Hubli-Dharwad has been selected for the study. From each faculty i.e., arts, commerce, science and management 30 students were randomly selected. In each group there were equal number of boys and girls.

Instruments
1. Gadget use scale: The gadget use scale has 2 sections, i.e., section-A and section-B. Section-A consists a list of 12 devices and services. In this section each device or service is to be rated on 1-4 range, the weight age is to be given as follows, 1-2 hours=1, 2-3 hours=2, 4-6 hours=3, above 6 hours=4. In Section-B there are 10 items and responses are to be given on the basis of 5 point scale. Strongly disagree=1, Disagree=2, Can’t say=3, Agree=4, Strongly agree=5. Higher the score greater the impact of Gadgets. The scale is not a standardized one, it was previously used by Jyoti Ranjan Muduli (2014) [35] in their study on Addiction to Technological Gadgets and Its Impact on Health and Lifestyle of college students.

2. Emotional Maturity: The Emotional Maturity (Singh and Bhargav) scale is a 5-point scale with 48 items, where subjects are provided with 5 alternatives to choose from i.e., very much, much, undecided, probably, never. The weight age of marks for each item ranges from 5 to 1, i.e., very much=5, much=4, undecided=3, probably=2 and never=1. The maximum possible score for this scale is 240 and minimum is 48. The lesser the score on the scale greater the emotional maturity. This scale consists of five dimensions, i.e., Emotional Instability, Emotional Regression, Social Maladjustment, Personality Disintegration and Lack of Independence. The dimension wise scores are to be obtained by adding the scores of all the items constituting each dimension. The total score for this scale is calculated by adding the scores of all the five dimensions.

3. David’s Battery of Differential Aptitude: Reasoning Ability: The scale consists of 12 rows of letters. Each row having five sets of letters. Four of the five sets follow a certain rule, one set does not. Subject is required to mark the letter of the one set that does not follow the rule. For every right answer 1 mark.

Statistical Analysis
The obtained scores of all the scales were analyzed using ‘t’ test to verify Ha 1 and Ha 2. ANOVA was used to verify Ha 3.

Results and Interpretation
Table 3.1: Showing the Mean and SD for Emotional Maturity and Reasoning Ability

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Groups Based on Duration of Use</th>
<th>N</th>
<th>Mean</th>
<th>S.D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emotional Instability</td>
<td>Less User</td>
<td>53</td>
<td>17.09</td>
<td>2.323</td>
</tr>
<tr>
<td></td>
<td>More User</td>
<td>67</td>
<td>16.33</td>
<td>1.744</td>
</tr>
<tr>
<td>Emotional Regression</td>
<td>Less User</td>
<td>53</td>
<td>15.51</td>
<td>2.423</td>
</tr>
<tr>
<td></td>
<td>More User</td>
<td>67</td>
<td>14.93</td>
<td>2.176</td>
</tr>
<tr>
<td>Social Maladjustment</td>
<td>Less User</td>
<td>53</td>
<td>15.30</td>
<td>3.232</td>
</tr>
<tr>
<td></td>
<td>More User</td>
<td>67</td>
<td>14.48</td>
<td>2.619</td>
</tr>
<tr>
<td>Personality Disintegration</td>
<td>Less User</td>
<td>53</td>
<td>13.72</td>
<td>2.560</td>
</tr>
<tr>
<td></td>
<td>More User</td>
<td>67</td>
<td>12.72</td>
<td>1.791</td>
</tr>
<tr>
<td>Lack of Independence</td>
<td>Less User</td>
<td>53</td>
<td>12.74</td>
<td>2.021</td>
</tr>
<tr>
<td></td>
<td>More User</td>
<td>67</td>
<td>12.37</td>
<td>2.411</td>
</tr>
<tr>
<td>Total</td>
<td>Less User</td>
<td>53</td>
<td>74.36</td>
<td>8.458</td>
</tr>
<tr>
<td></td>
<td>More User</td>
<td>67</td>
<td>70.82</td>
<td>6.293</td>
</tr>
<tr>
<td>Reasoning Ability</td>
<td>Less User</td>
<td>53</td>
<td>48.0164</td>
<td>9.88750</td>
</tr>
<tr>
<td></td>
<td>More User</td>
<td>67</td>
<td>51.5691</td>
<td>9.88023</td>
</tr>
</tbody>
</table>

An observation of table 3.01 reveals that less gadget users have shown high scores in all dimensions of emotional maturity and even in overall scores. In contrast more gadget users have shown low scores in all the dimensions and also in overall scores. It indicates that more gadget users have higher emotional maturity than less gadget users.

More gadget users have high score for reasoning ability compared to less gadget users.

The electronic gadgets are used much in social networking. More gadget users have higher emotional maturity than less gadget users; it could be because of the fact that they are more actively involved in social networking which enhances their interpersonal relations, skills in turn facilitating the development of emotional maturity.
An above observation Table 3.2 reveals that the difference between less gadget users and more gadget users is significant at the .000 level thus Ha5 is accepted. For Emotional Instability (t=4.12) and is significant at .045 level thus Ha5 is accepted. The less gadget users have significantly lower Emotional Maturity than more gadget users' Emotional Maturity is significant (p<0.05) and is significant at .000 level so Ha5 is accepted. The ANOVA test was used to verify the difference between less gadget users and more gadget users’ reasoning ability is not significant. Ha1 is accepted. The results are useful to take up some intervention studies to enhance emotional maturity and self-esteem of those students who are addicted to gadgets.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Groups Based on Duration of Use</th>
<th>N</th>
<th>MD</th>
<th>SEM</th>
<th>'t' value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emotional Instability</td>
<td>Less User</td>
<td>53</td>
<td>-3.766</td>
<td>.384</td>
<td>1.997*</td>
</tr>
<tr>
<td></td>
<td>More User</td>
<td>67</td>
<td>-3.766</td>
<td>.371</td>
<td></td>
</tr>
<tr>
<td>Emotional Regression</td>
<td>Less User</td>
<td>53</td>
<td>-3.584</td>
<td>.426</td>
<td>1.371</td>
</tr>
<tr>
<td></td>
<td>More User</td>
<td>67</td>
<td>-3.584</td>
<td>.421</td>
<td></td>
</tr>
<tr>
<td>Social Maladjustment</td>
<td>Less User</td>
<td>53</td>
<td>-3.824</td>
<td>.547</td>
<td>1.506</td>
</tr>
<tr>
<td></td>
<td>More User</td>
<td>67</td>
<td>-3.824</td>
<td>.534</td>
<td></td>
</tr>
<tr>
<td>Personality Disintegration</td>
<td>Less User</td>
<td>53</td>
<td>-1.001</td>
<td>.414</td>
<td>2.416*</td>
</tr>
<tr>
<td></td>
<td>More User</td>
<td>67</td>
<td>-1.001</td>
<td>.398</td>
<td></td>
</tr>
<tr>
<td>Lack of Independence</td>
<td>Less User</td>
<td>53</td>
<td>-3.653</td>
<td>.405</td>
<td>.896</td>
</tr>
<tr>
<td></td>
<td>More User</td>
<td>67</td>
<td>-3.653</td>
<td>.413</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>Less User</td>
<td>53</td>
<td>-3.538</td>
<td>1.393</td>
<td>2.539*</td>
</tr>
<tr>
<td></td>
<td>More User</td>
<td>67</td>
<td>-3.538</td>
<td>1.347</td>
<td></td>
</tr>
</tbody>
</table>

* p<0.05 significant

An above observation Table 3.2 reveals that the difference between less gadget users and more gadget users is significant (p<0.05) for Emotional Instability (t=1.997) and Personality Disintegration (t=2.416). Emotional Regression (t=1.371), Social Maladjustment (t=1.506) and Lack of Independence (t=.896) are not at significant level. Difference between less gadget users and more gadget users’ Emotional Maturity is significant (p<0.05) t value is 2.539 so the Ha1 is accepted.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Groups Based on Duration of Use</th>
<th>N</th>
<th>MD</th>
<th>SEM</th>
<th>'t' value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reasoning Ability</td>
<td>Less User</td>
<td>53</td>
<td>3.55269</td>
<td>1.81702</td>
<td>1.955</td>
</tr>
<tr>
<td></td>
<td>More User</td>
<td>67</td>
<td>3.55269</td>
<td>1.81687</td>
<td></td>
</tr>
</tbody>
</table>

An above observation Table 3.3 reveals that the difference between less gadget users and more gadget users’ reasoning ability is not significant. Ha5 is rejected. It could be because of the availability of information is possible in fraction of seconds. As the technology is growing human beings have stopped thinking rationally and they are completely dependent on gadgets and technology.

The ANOVA test was used to verify the difference between Emotional Maturity and Reasoning Ability of Undergraduate Arts, Commerce, Science and Management Students. For Emotional Maturity the F-ratio is 58.15 it indicates that they (Arts, Commerce, Science and Management Students) differ significantly at p<0.001 level so Ha3 is accepted. For Reasoning Ability the F-ratio is 4.12 and is significant at p<0.05 level thus Ha5 is accepted.

<table>
<thead>
<tr>
<th>Source of variance</th>
<th>Sum of Square</th>
<th>Degree of freedom</th>
<th>Mean of square</th>
<th>F-ratio</th>
<th>Level of significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emotional Maturity</td>
<td>Between The Group</td>
<td>2620.8</td>
<td>3</td>
<td>2620.86</td>
<td>58.15</td>
</tr>
<tr>
<td></td>
<td>Within Group</td>
<td>2677.5</td>
<td>116</td>
<td>23.08</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>6704.3</td>
<td>119</td>
<td>97.91</td>
<td></td>
</tr>
<tr>
<td>Reasoning Ability</td>
<td>Between The Group</td>
<td>403.67</td>
<td>3</td>
<td>403.67</td>
<td>4.12</td>
</tr>
<tr>
<td></td>
<td>Within Group</td>
<td>11358.4</td>
<td>116</td>
<td>97.91</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>11900.0</td>
<td>119</td>
<td>97.91</td>
<td></td>
</tr>
</tbody>
</table>

*p< 0.05 significant

Summary and Conclusion
The obtained results and discussed facts have led to the following conclusion:
- The less gadget users have significantly lower Emotional Maturity than more gadget users in all dimensions such as Emotional instability, Emotional Regression, Social Maladjustment, Personality Disintegration and Lack of Independence as well as in overall scores.
- More gadget users have slightly high Reasoning Ability than less gadget users.
- Students of different faculty such as Arts, Commerce, Science and Management differ significantly in their Emotional Maturity.
- Students of different faculty such as Arts, Commerce, Science and Management differ significantly in their Reasoning Ability.

Suggestions of future research
1. This study can be conducted on a larger sample to arrive at definite conclusion.
2. Correlation studies also can be done to check the relationship between Emotion Maturity and Reasoning Ability.

Social Implications
The results are useful to take up some intervention studies to enhance emotional maturity and self-esteem of those students who are much addicted to gadgets.

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