JETIR.ORG ISSN: 2349-5162 | ESTD Year : 2014 | Monthly Issue
JOURNAL OF EMERGING TECHNOLOGIES AND INNOVATIVE RESEARCH (JETIR)
An International Scholarly Open Access, Peer-reviewed, Refereed Journal

Impact Of Mobile Uses On The Adolescent, Early Adulthood Age Group's Cognitive Process.

Dr. Mahavir Ghiya,M. D.(HOM), M.A. (Psychology), M. A. (pub. Admin.)

HOD/Professor, Repertroy dept.

Government Homoeopathic Medical College & Hospital

Dethali, Tal. Siddhpur, Dist. Patan. Gujarat

Abstract : Cognitive process involves many psychological processes. Recent advancement in communication technology (Smartphone) has made impact on cognitive development of human being. Very specifically of adolescent, early adulthood. This study through Dr. Praveen kumar Jha's cognitive style inventory check the cognitive score of 78 (N=78) mobile users. Some of them were low and some are high users. Results show significant difference of score in heavy (154) and low users (137). This leads to conclusion that mobile can act informative device to enhance the cognitive function.

Key word : Cognitive, Mobile phone, Adolescent, Praveenkumar Jha, Inventory, Cognitive score

Introduction:- Cognitive process involves the total psychological processes-from sensation to perception, neuroscience, pattern recognition, attention, consciousness, learning, memory, concept formation, thinking, imaging, remembering, language, intelligence, emotions, and developmental process of human mind. (Solso, 2002)

Humans are social creatures with a universal need to connect with others. Recent advancements in communications technology have enabled billions of people around the world to fulfil this need using mobile phones ((Pryzybylski A. K., 2013). However, although people are attracted to these devices as a means for sociability and interpersonal closeness (R., 2000), there is uncertainty as to whether phones actually serve this purpose. "Ironically, a smartphone can change from the status of an instrument that supports social exchanges to an object than indubitably interferes with them" (J., 2012). Social engagement through the use of phones has become main-stream. This changing nature of communication styles and preferences raises questions about the impact it has on real-life social interactions.

However, education and acquired knowledge and experience are not the only determinants of cognitive development. Since it occurs over time, cognitive development is also simultaneously the effect of achieved developmental level and of age and maturity. Studies of the Piagetian type from the 1970s were already suggesting that intellectual functioning was dependent on age.

Different extrinsic factors also plays their role in the development of the cognitive function of the human being (M., 2017), and mobile phone is one of the indispensable device which has a very definite impact. If this is an abnormal impact on health of the mobile use then one should see what it can impact on the normal psychological development process in special reference to the cognitive function of the adolescent. Cognitive function and the Mobile use in form of low or heavy user is consider for the study in this project.

Keeping the above fact in mind it is decided through this project to find is there any difference in cognitive function of adolescent/ early adult who are using mobiles for few hours or more hours i.e. low user or heavy user is observed.

Aim : To find out the impact of mobile using on the cognitive functioning of the early adolescent age group
Objectives: - This study attempts to compare the cognitive function of adolescent/ early adult of two groups who are low user of mobile and heavy user in terms of hours in a day of mobile in day-to-day life respectively.

Secondly to explore the relationship of mobile using and cognitive process of users.

Hypothesis :

Research question: Can the use of cellular mobile phone has some impact on the cognitive functioning developing of adolescent, early adulthood age group's

Hypothesis: Use of cellular mobile phone increases the cognitive functioning in adolescent, early adulthood age group.

Null Hypothesis: There is no difference in cognitive function of Cellular mobile phone user and less Cellular mobile phone user.

Methods & Materials:

Variable : 1) Mobile using Hrs. (low/ heavy) – Independent variable

2) Cognitive function – Dependent variable

Operational definition:

Mobile (Cellular Phone): A *cellular phone* is a telecommunication device that uses radio waves over a networked area (cells) and is served through a *cell* site ((https://www.techopedia.com/definition/6413/cellular-phone)

Adolescent: Person of age group 10 and 19 years.

Early Adulthood: Person of age group 19 and 30 years

Cognitive Function: Cognition is a term referring to the mental processes involved in gaining knowledge and comprehension. These processes include thinking, knowing, remembering, judging and problem-solving. (S., 2017)

Sample : for the study purpose mention C N Kothari Homoeopathic medical college, Vyara, Dist. Tapi is selected where 400 students are there in the desired age group (adolescent & early adulthood). Sample size is calculated from https://www.surveysystem.com/sscalc.htm which is 78. These 78 students are consider for the study among all the students of the college who are using mobile in day today life from more than two years regularly. These 78 student are selected after all the population undergone the screening test (appendix-1) .Through this screening test mobile users with their hrs. /week can be identified. Then by the way of systemic convenience sampling as per the decided inclusive & exclusive criteria mobile user will be selected in two group's i.e. low & heavy mobile users as per the hrs. Mention in the screening test they have undergone. Low users are those who uses the Cell phone less than 2 hrs. per day in week & more than that consider as heavy users.

Research design: Cross Sectional Observational

Tests/tools : To Assess Cognitive process *Cognitive style inventory (CSI)* developed by Dr. Praveen Kumar Jha (2001)will be used, which measures the ways of thinking, judging, remembering, storing information, decision making and believing in interpersonal relationship. The CSI is designed on the basis of the rationale as

conceived by Martin (1983) that implies cognitive style as preferred and consistent patterns of responses. The inventory consists of five dimensions of cognitive style viz. systematic, intuitive, integrated, undifferentiated and split cognitive style. **Then with cognitive measuring test both the group members will be tested for cognitive process and result will be obtained.**

The CSI is standardized for Indian population by Praveen Kumar Jha (2001). It is a self-report inventory of the ways of thinking, judging, remembering, storing information, decision making, and believing in interpersonal relationships. The CSI comprises 40 statements from which 20 statements are related to Systematic Style and the other 20 statements to Intuitive Style and are to be responded on five-point scale running from 'Strongly Agree' to 'Strongly Disagree' with three middle responses of 'Agree', 'Undecided', and 'Disagree'. It enables to assess the five styles, namely, systematic style, intuitive style, integrated style, undifferentiated style, and split style. A. Systematic Style: An individual who typically operates with a systematic style uses a well-defined step-by-step approach while solving a problem; looks for an overall method or pragmatic approach; and then makes holistic plan for problem solving. B Intuitive Style: An individual with intuitive style uses an unpredictable ordering of analytical steps when solving a problem, depends on experience pattern characterized by universalized areas or hunches and explores and abandons alternatives quickly. C. Integrated Style: A person with an integrated style is able to change styles quickly and easily. Such style changes seem to be unconscious and take place in a matter of seconds. The result of this 'rapid fire' ability is that it appears to generate energy and a proactive approach to problem-solving. In fact, integrated people are often referred to as 'problem-seekers' because they consistently attempt to identify potential problems as well as opportunities in order to find better ways of doing things. D. Undifferentiated Style: A person with such style appears not to distinguish or differentiate between the two style extremes, that is, systematic and intuitive, and therefore, appears not to display a style. In a problem-solving situation, he/she looks for instructions or guidelines from outside sources. Undifferentiated individuals tend to be withdrawn, passive and reflective and often look to others for problem-solving strategies. E. Split Style: A person with split style shows fairly equal degrees of systematic and intuitive characteristics. However, persons with split-style do not possess an integrated Behavioural response; instead they exhibit each separate dimension in completely different settings using only one style at a time based on the nature of the asks. In other words, they consciously respond to problem-solving by selecting the most appropriate style.

Result :

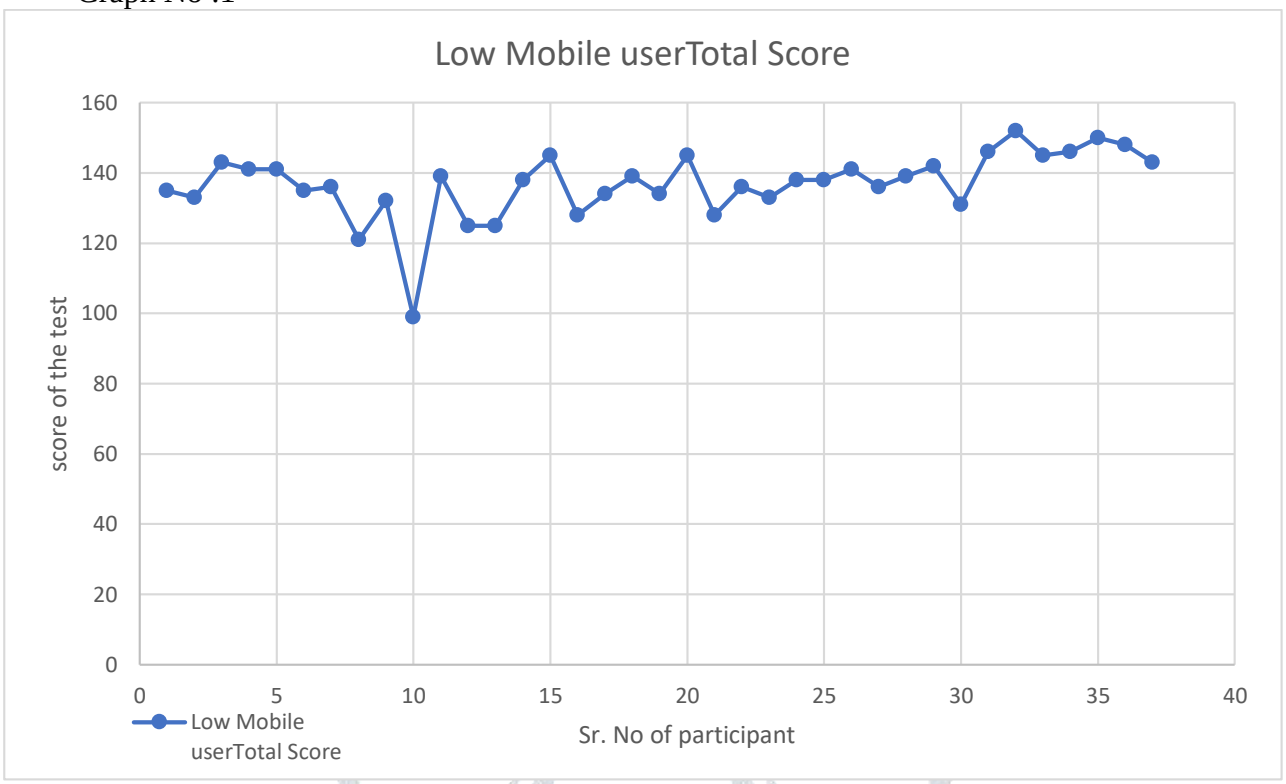
In this project student/ Adolescent sample (N=78) were given the cognitive test booklets to know their cognitive score. These students are divided in to two groups (Heavy Mobile Users & Low Mobile users) as per the selected study design. Score of both the group is as in the Graph One and Two.

Mean score of Low mobile user and Heavy mobile user is 137 & 154 respectively as from Table 1.These two groups were studid to found that is Heavy Mobile using shows any changes in the cognitive function as compare to Low Mobile user.ANOVA singhle factor test was perform on the recorded score. (Table 1),Which shows the F value – 69 which is more than the Critical f 3.9.So there is definate diffrence between the two groups in their cogntive score this can be dereived.Hence the Null Hopothesis is rejected and Alternative is accepted.

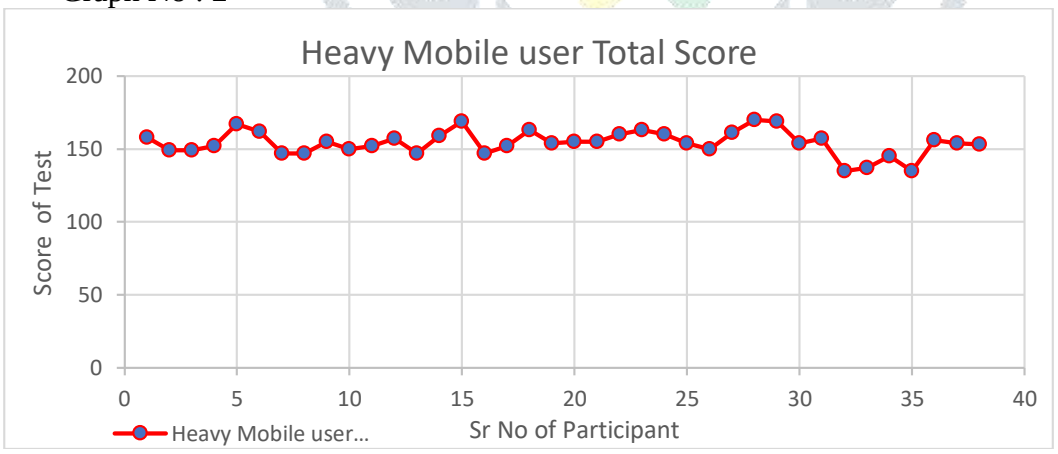
By F test also the critical value of p at level of 0.05 is 1.3 (Table 2) which is more than the C I stated level which show there is definate diffrence between the socre of the two group.

Comparing the mean of both goroup 134 Vs 154 (Graph -3) also show that those who are heavy mobile users show the higher side score.

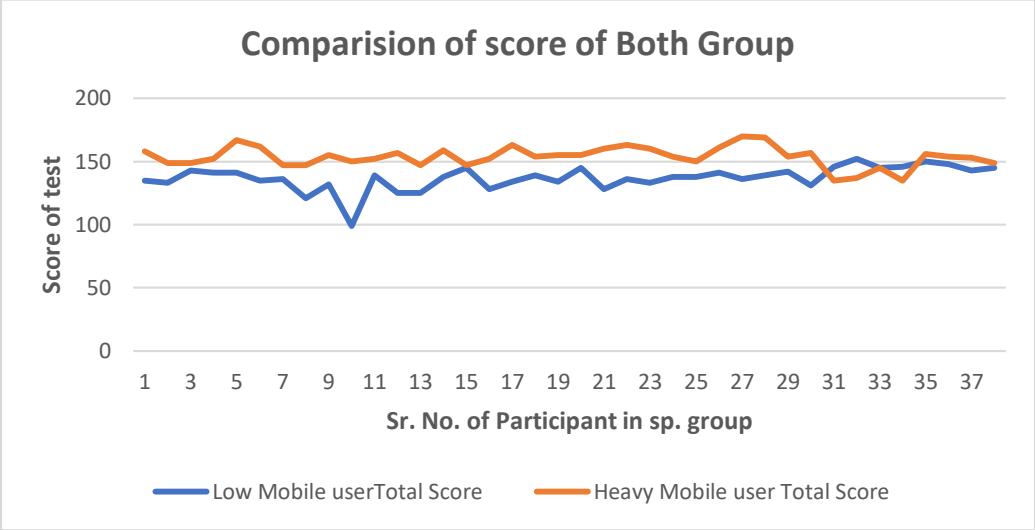
- Graph No :1



- Graph No : 2



- Graph No : 3



- Table No : 1

Anova Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Low Mobile user Total Score	38	5205	136.97	90.95
Heavy Mobile user Total Score	38	6008	154.05	70.94

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	5613.21	1	5613.21	69.46	2.76E-12	3.97
Within Groups	6060.87	75	80.81			
Total	11674.08	76				

- Table No : 2

F-Test Two-Sample for Variances		
	Low Mobile userTotal Score	*Heavy Mobile user Total Score*
Mean	137.0	154.1
Variance	90.9	70.9
Observations	38.0	38.0
df	37.0	37.0
F	1.3	
P(F<=f) one-tail	0.2	
F Critical one-tail	1.7	

Conclusion :

The present work shows definite change in cognitive score among the low mobile user and heavy mobile user. The cognitive score of heavy mobile user was high as it indicates that mobile can acts as one of the easiest source for information which is helpful for cognitive development and also growing the perception of surroundings. The present review considers intensifying though still limited, area of research exploring the potential cognitive impact of smart phone related habits and seeks to determine in which domain of functioning there is accruing evidence of significant relation between Smartphone and cognitive performance.

Bibliography

J., B. (2012). Problamatic use of mobile phone: a literature review and a pathway model. *Current Psychiatric review*, 299-307.

M., M. P. (2017). *Cognitive psychology, learning and memory.* New Delhi: Indira Gnadhi National Open University.

Pryzybylski A. K., W. N. (2013). How the prescence of Mobile communication techonology influences face to face conversation. *Journal of Social and Personal relationship*, 237-246.

R., L. L. (2000). Uses and gratification of cellural phone. *Journalism and mass communication quarterly*, 308-320.

S., S. D. (2017). *Lifespan Pyschology.* New Delhi: Indira Gandhi Open University.

Solso. (2002). *Cognitive Psychology.* New Delhi: Pearson Education.