International Journal of Latest Trends in Engineering and Technology
Vol.(11)Issue(1), pp.014-018
DOI: http://dx.doi.org/10.21172/1.111.03
e-ISSN:2278-621X

THE TIME -USE AND ITS INFLUENCE ON DIGITAL WELL - BEING OF CHILDREN USING DIGITAL DEVICES

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Abstract-The mission and a dream which started by great efforts of the Indian Government by bringing a "Digital Renaissance" started long time before the start of "Digital India" mission. Introducing them in Indian Education System to satisfy different stakeholders: educationists, policymakers, schools, organizations, and the most worried and concerned parents about the Time -Use and well -being of Indian children who were already spending a lot of their time on latest technologies. Many other international organizations like United Nations Educational, Scientific and Cultural Organization (UNESCO), United Nations Economic Commission for Europe (UNECE) are also interested in Time Use Survey as they help in understanding the well -being of children and explored the time allocations for various activities. Most preferable, economic, relevant methodology to collect the TUS in India is "Global Time Estimates". Multistage sampling design was used. The present study explored weekly "Time- Use" and its correlation with "Digital Well -Being". The data was analysed by calculating average number of hours spent in a typical week on Digital Devices and by conducting Pearson Correlation between "Time -Use" and "Digital Well- Being". The findings were positively correlated with "Digital Well- Being". The information about "Digital Well- Being" was provided by capturing various feelings acquired while using Digital Devices for various activities. The findings indicated that children developed positive feelings by using Digital Devices .Therefore, these devices particularly Tablets can be introduced in Indian schools converting them into e-schools extending the formal school time making our children feel positive, which is the ultimate aim of every education system creating a true Digital India giving them e-quity, empowerment and above all a Positive "Digital Well- Being". Indian Government is already in a process of reducing the curriculum to half by 2019, reducing the work load. The concept of E-schools will also make Indian education system nearly paperless in future reducing the heavy load of bags. "Workload "and "Bag-load" if reduced together it will surely make a difference. This paper is also beneficent to schools and organizations to introduce Tablet Devices in Indian schools.

Keywords: Time-Use Study(TUS), Tablet Devices (TD), Digital Devices(DD), A Typical Week, Time -Use, Digital Well-Being(DWB)

1. INTRODUCTION

The success often comes after failures, which started with launch of "Akash" Tablet, the world's cheapest Tablet technology. International organizations like United Nations Educational, Scientific and Cultural Organization (UNESCO), United Nations Economic Commission for Europe (UNECE) are interested in Time Use Survey by developing and the developed nations across the globe. No Time -Use Surveys have been conducted with Indian children, who are using digital devices. The major aim of TUS in present study is the record of time spent by children using digital devicesfor different activities in a typical week. How children spent their time weekly on Digital devices influencing their well-being. The guidelines for TUS data in the form of "Average Time spent" by children over a time -periodas recommended by the United Nations Guide to Producing Time Use Statistics (United Nations 2005a) and for "Well-Being" instructions from United Nations were followed(UN,2013). The present study followed the above guidelines. Through collaboration and the intentional infusing of technology into informal learning spaces, the innovations can be invented for digital learning. The 'Paperless Education' where tablets will replace the traditional classrooms burdened with text books in India. Reading without books or paperless books in developing countries is a dream which may come true in near future. The most motivating and the most functional concept would surely be «one student, one device» where each student would use a tablet computer during and after school time.

During 2015, Maylahn, P from COSN (Leading Education Innovation) senior delegation to India: described " INCREDIBLE INDIA: ENDLESS POSSIBILITIES." The pilot study Project on learning through digital deviceshave been carried out in an Indian school-Ramjus School, RK Puram.HP National Education Technology Assessment (HP NETA) to support and extend learning in a variety of situations empowering children through digital devices.The result has been greater student engagement and interest, higher motivation levels, increased confidence levels and ever- growing use of technology by teachers and students(Hatzigianni et.al.2016). ''Mood Room Project" was launched beginning from 2013 to 2014 at I.A.S.T. helped children in understanding emotions and making them happy(Turkle,2004).

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TUS gathersdata on well-being capturingthe feelings of respondent's at a specific time period to understand how performing differentactivities influence respondent's well-being (UN,2013).Data obtained from TUS can be used by economist, Government to make policies, policy makers ,principals ,teachers, ICT coordinators, psychologists, and also by companies like Apple, HP, Microsoft, Samsung etc. TPC devices are creating positive transformation in education by providing them content that was unreachable earlier. This bridge the educational gap providing them equity. This opportunity makes the impossible possible, unreachable reachable. Weekly Time Use is particularly important in the study of children's Digital Well -Being, since gooduse of time often results in educational, social, and economic benefits. TUSdata providesimportant information that can be utilised to explore how children makes best use of their time while using digital technologies, and how this usage was related with their well -being referred as Digital Well -Being in the present study.The heightened awareness, public concern and mostly parental concern about the children's Digital Well -Being to adapt in this digital era. The present study will provide to offer International organizations, Institutions, schools,policy makers, educators, parents, and public health groups a platform showing a positive relation between time spent on Digital Devices and the Digital Well -Being of children using them.

2. THE PRESENTSTUDY (TUS)

TUS is well defined as "the area of social science that focuses on what we do with our time and why" (Farnworth & Fossey,2003. p. 150). Thedataprovided by TUS are quantitative summaries of how respondents "spend" their time over a specified period – typically in a typical week composed of 5 weekdays and 2 weekends (UN, 2004).

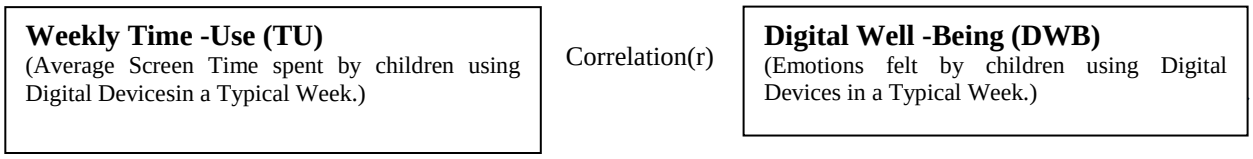

Figure -1: Simplified Conceptual Framework for this Study

The present study is designed to record weekly Time Use by children using digital devices.TUSdata have never been collected with 11- 17-year-old Indian children using digital devices after school time. They also help in understanding the well -being of children. How they behave while doing an activity. It is only through TUS that the whole picture of hidden and unaccountable activities is depicted. Therefore, the Digital Well- Being of children have become a hot topic of debate nowadays. The operational definitions of the key terms are :

A Typical Week: refers to all seven days in a typical week starting from Monday to Sunday.

Weekly Time -Use: refers to sum of average score obtained by calculating mean of the screen time spent for academics and leisure in a typical week.

Digital Devices: refers to the use of Tablet devicesfor after school activities.

Children: refers to children of age group 11-17 years using digital devices at home.

Digital Well- Being: In this study digital well- being was measured by rating the positive feelings achieved focusing on children's feelingswhile using digital devices.Digital well -Being was scored by rating certain positive feelings while performing educational activities (i.e. Web- research to inspire, reading e-books for their contentment, watching educational videos for motivation, doing home -work boosting confidence)) and certain positive feelings while performing leisure activitiesin a typical week(i.e. Playing games for enjoyment, recreational surfing arousing excitement, listening songs for relaxation ,using Social-Media for happiness.)The digital well- being was obtained by calculating the average score by respondents by using the tool developed.

3. OBJECTIVES OF THE STUDY

To study the Weekly Time -Use andthe Digital Well- Being ofchildren using digital devices.

To study the Digital Well- Being of children using digital devices.

To find the correlation between Time- Use and Digital Well- Being of children while using digital devices.

SAMPLE

Time -Use data are being collected from Indian children using digital devices. Multistage sampling design was used in present study. This study was conducted fora sample of 200 children using digital devicesenrolled in two Districts of Delhi namely South Delhi and South -West Delhi purposively selecting four Public Schools, where children were using digital devices at home for various educational and leisure activities. All the participants in this study were segregated age-wise belonging to two age groups 11-14 years and 15-17 years as part of the cross- sectional survey conducted during the academic sessions (2015-16). The present study explored the Weekly Time Use by the respondents and its influence on their Digital Well- Being which is the aim of present study.

4. INSTRUMENT

Self -made questionnaire used to collect Time -Use data from children using Digital Devices. The TUS questionnaire had 22 items rating the self- estimates to explore the Weekly Time-Use by children using digital devices in a typical week.To study the Weekly Time- Use for academics as well as leisure byusing global time self -estimates rated from 0(=0 hours spent in a typical week) to 7(≥6 hours spent in a typical week by children using digital devices after school time by rating scale. Responses were sought on 22 closed-ended items comprised of 6 academic and 5 leisure activities recording the average time spent in number of hours spent in a typical week. In addition, the questionnaire also had 8 itemsratingseven levels (positive feeling from 0=lowest level to 7=Highest level) ofDigital Well- Being experienced by children using digital devices in a typical week.To study the Digital Well- Being of children using digital devices after school time by rating Respondents used global time self-estimates to give record of the time they spent on a list of predefined activities in a typical week. Two categories of Time Use were created for school related academic work and leisure. Measures range from 0 hour to more than 6 hours in a typical week which includes academic and leisure activities.

5. ANALYSIS AND INTERPRETATION OF DATA

Objective 1: To Study the Weekly Time Spent by Children using Digital Devices.

The TUS data analysis below shows the response to each question Time- Usefor academics and leisure while using digital devices .

Table 4.1: Time- Use (Average Screen Time in Hours spent in A Typical Week) for Activities performed by Children using Digital Devices(N=200)						Weekly Time Use TU= ATU+ LTU
Academic Time-Use (ATU)	Mean Weekly Hours	SD	Leisure Time-Use (LTU)	Mean Weekly Hours	SD	
Reading E-books	4.5	1.7	Listening Songs	3.6	1.6	8.1
Sharing notes	4.3	1.4	Playing games	2.8	1.8	7.1
Web- Research	5.1	1.7	Recreational Surfing	3.4	1.7	8.5
Educational Videos	5.3	1.7	Recreational Videos	3.3	1.6	8.6
Doing Home Work	5.3	1.8	Social-Media	3.0	1.7	8.3
PreparingPower-Point	4.4	1.6	Leisure Time	3.2	1.7	8
Academics Time	4.8	1.7	Weekly Time Use = 8 hours/Week			

EA=EducationalActivity, LA=Leisure Activity, ATU=Academic Time Use (Average of all 6 EA/Week), LTU=Leisure Time Use (Average of all 5 LA/Week), TU (Time Use) = (ATU+LTU) Source: Compiled from Collected Data

Table 4.1 depicts, the average screen time spent for academics was for watching educational videos and for doing home -work (M=5.3 hours in a typical week)was highest whereas the lowest average screen time spent for doing academics was for preparing Power-Point Presentations by children using digital devices.The average screen time spent for leisure was highest for listening songs (M=3.6 hours in a typical week)and lowest for playing games (M=2.8 hours in a typical week) by children using digital devices.The above table also shows, the Academics Time i.e. average screen time spent for all 6 educational activities was (M=4.8 hours in a typical week)which was 1.6 hours more than Leisure Time spent (M=3.2 hours in a typical week). The Weekly Time -Use for academics as well as leisure activities was 8 hours in a typical week). The above table presents a snapshot on Weekly Time- Use of digital devices.

Objective 2: To Study the Digital Well -Being of Children using Digital Devices.

Table 4.2: Digital Well-Being of Children using Digital Devices in A Typical Week							
Educational Activities	DWB for specific EA			Leisure Activities	DWB for specific LA		
	Feelings	M	SD		Feelings	M	SD
Web- Research	Inspiration	2.9	2.0	Playing games	Enjoyment	3.0	1.8
Reading E-books	Contentment	2.8	2.2	Recreational Surfing	Excitement	3.2	1.8
Educational Videos	Motivation	3.3	2.0	Listening Songs	Relaxation	3.9	1.7
Doing Home-Work	Boost Confidence	3.6	1.8	Social-Media	Happiness	4.3	1.6
DWB (EA)=Mean DWB for EA		3.2	2.0	DWB (LA)=Mean DWB for LA		3.6	1.7

EA=Educational Activities, LA=Leisure Activities,DWB (EA) =Mean Level of DWB for EA, DWB (LA) =Mean Level of DWB for LA, DWB= DWB(EA)+ DWB(LA),Source: Compiled from Collected Data

Table 4.2depicts, the mean level of Digital Well -Being(DWB)was for children using Digital Devices(DD) was highest while doing leisure activities,feeling of enjoyment showed highest level while feeling happiness while using social media (M= 4.3in a typical week). Enjoyment level (M=3.0in a typical week) influenced children's DWB least while they played games for leisure. While doing educational activities by using DD,the DWBinfluenced least while reading e-books for contentment(M=2.8in a typical week). The usage of DD boosted the confidence of children to the highest level while doing home -work..The mean level of DWBfor doing academics as well as leisure activities wasM=3.4 in a typical week.

Objective 3: To Study the correlation between Time -Use and Digital Well -Being ofChildren using Digital Devices.

Table 4.3: Variables Compared	Pearson Correlation (r)	Level ofSignificance
Weekly Time -Use & Digital Well -Being	+0.8	0.01(**)

Table 4.3 depicts, the positive correlation between Weekly Time -Use andDWB was positive as well as highly correlatedand significantp level 0.01 level (2-tailed).

6. CONCLUSION AND IMPLICATIONS

The findings of this TUS add to understanding of why and for how long children used DD in a typical week in the Indian context influencing their DWBpositively.It captures feelings (level of happiness, relaxation, enjoyment, excitement while leisure; motivation, boost confidence, inspiration and contentment while doing academics). Positive feelings were stimulated more while using digital devices for leisure than for academics. Children's influence while using digital devices tends to be overwhelmingly positive, a high level of motivation was felt when watching educational videos.Children's confidence levelboosted while doing home- work with the help of digital devices. Also,children felt extremely happy while using social -media. The level of DWBexperienced while spending time on digital devices influences certain positive feelings. This finding runs parallel with the findings of Duman et al. (2016),showing that mobile technologies can enhance the level of motivation and enthusiasm. Positive relationship of Time-Use existed with DWB. This finding is consistent with the research conducted by Turkle (2004), who found the positive usage of technologyresulting in positive emotions. Positive influence on children's DWBis opening doors of excellent opportunities for children who are using digital devices. This study re-shapes Digital India's missionby transforming children into "DigitallySmart-Children"taking care of their healthy Digital Well-Being.

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8. WEB RESOURCES

- http://www.cora.ucc..ie
- http://www.unece.org
- http://www.statisticsnz.govt.nz
- http://www.unstats.un.org
- http://www.cei.int
- http://www.sms.sagepub.com