

Information Science & Technology Series

**Liberal Arts, Humanities &
Technology in Digital Age:
Few Selected Topics**

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Technology in Digital Age:
Few Selected Topics**

Editors
P.K. Paul
A. Bhumali
K.S. Tiwary
B. Satpathy



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Advancement and Changing Trends of Education, Platforms and Concentration

Education is changing rapidly. Today as far as India is concerned different types of higher educational institutes are offering programs of various levels. India is composed with institutes such as universities, colleges, institute of national importance etc. There are different changes are noticeable, initially only universities started UG and PG program but now colleges are also offers Masters, M.Phil. and Ph.D. programs. Similarly initially only regular mode of education considered as important and offered but now other mode of education became also popular *viz.* distance education, correspondence mode of education. Moreover other mode of education also been started in recent past *viz.* E-Learning, Online Education, Blended Education. The organizations and companies itself also engaged in another mode of education called Corporate Education, Industry Integrated Learning as well.

Apart from the changes and trends in educational institutes, and mode of educational program offering; another noticeable changes in subject and area of studies. Initially the degrees were offered in a subject in India *viz.* MSc in Botany, MSc in Zoology, MSc in Bio Chemistry etc. Another focus already long before started i.e. degree on a micro or specific areas *viz.* MSc in Microbiology, MSc Virology, MSc Nano Technology etc.

But in recent past the noticeable changes is in the nomenclature where broad areas are offered i.e. the field specific nomenclature like MSc Life Sciences/ MSc Bio Sciences in which the subject are offered as a major or specialization *viz.* MSc Life Science (Zoology), MSc Life Science (Bio Chemistry) etc. The same may also offered as Bio Sciences degree. The main benefit of such type of nomenclature is that the degree holders will be able to apply and engage the specific area (i.e. Zoology) but also in other areas of Life Science if he/she gathered additional skills etc.

The integration among the fields is an another advancement and noticeable affairs of the modern higher education system. Here integration of Science and Humanities can be seen in the recent degree

programs; and here a science graduates can opt any humanities or liberal arts or social science papers. Similarly, a commerce graduate can opt any technology paper. The core aim of this educational strategy is to enhance the education system with interdisciplinary culture development. Research based culture is another one, in which degree program comes with the concentration of research attributes. In recent past degrees are comes with the nomenclature like MSc (by Research) in Botany/Life Science etc. Even such are also available as other degree *viz.* MS, MTech etc.

Hence today's education systems attributed with full of different features that includes the diversity in—educational institutes and changing trend of level of programs, mode of education, types of nomenclature and concentration of a broad subject and a small or specific area. The integration of one field is another one is also noticeable. The interdisciplinary culture development is rising and growing rapidly. Similar to education systems diversity in a book also noticeable and in this book also such features are incorporated which include the diverse range of topics from liberal arts to humanities/ social science to language, from latest human technological development to ancient topics under one roof. Similarly, authors from different background and level also part of this edited version.

Editors

P.K. Paul

A.Bhuimali

K.S.Tiwary

B.Satpathy

About the Editors



Dr. P.K. Paul, PhD

IEST Shibpur, FBSS, FIARA
Executive Director, MCIS & Assistant Professor,
Dept. of Computer & Information Sciences
Information Scientist (Offg.)
Raiganj University,
West Bengal-733 134, India

Dr. P K Paul working as an Executive Director, MCIS & Assistant Professor, Dept. of Computer & Information Sciences, holds Ph.D.-Information Science and Technology (IST) from India's premier & oldest Public Engineering Institute IEST Shibpur (An Institute of National Importance), M.Tech. (By Research) in Information Science & Technology, M.Sc. (Double), MBA-InfoSys, is actively engaged in the research and academic activities in the field of IST and Engineering Sciences related with Information Processing and Management. He has been associated with Raiganj University, Raiganj, West Bengal for the teaching and learning activities. He is also CEO and VP of IST Foundation.

Virtually he is among the few Indian Information Science professional who holds Post Graduate Qualification in all the dimensions of Information Sciences; ranging from Computer Sciences, Management Science, Information Studies and Information Technology. He is in favor on starting programs and specialization in emerging IT & Computing subjects that are applied and having social and business touch. He was engaged as consultant for designing country's first MBA-Information Management programme for VMS University, Sikkim. He is also mastermind for designing India's first interdisciplinary Masters (MSc) program on computing i.e. MSc-Computer & Information Science based on principles of interaction of information-technology-people. The first of its kind program already been started in the Government University RGU, India. He has credited many writing/research first and few among the Indian Researcher which including; first research/ policy paper

on Cloud Computing Applications in Information Science, Systems, Information Centre/ Green Computing or Green IT in Information Field/ I-Schools aspects/ Usability Engineering in Information Science and Services/ HCI in Information Uses/ Information Science Educational aspects/ [IST]/ Information Scientist/ Geo-Information Science, Quantum Information Science and so on. He is Associate Chief Editor of IJASE, New Delhi, India. He is also responsible as Associate Chief Editor for IJISC, New Delhi, India. He is also involved as Editorial Board Member and Reviewer of more than 70 National and International Journals in diverse field ranging from Computer Science, Informatics, Management, Engineering Science to Education, Social science, Health Science, Pharmacy and so on like Journal of Organizational and End User Computing, International Journal of E-Adoption, International Journal of Web Services Research, International Journal of E-Health and Medical Communications, International Journal of Healthcare Information Systems and Informatics, JECO, IJIRR, IJHCITP, IJOSSP, IJMDEM, IJTHI, IJDET, IJITPM, IJISSCM, IJISSS, IJBDCN, IJWP published from United States, Dubai, India, Nigeria, South Africa and so on.

Moreover he has also performed with several international conferences and event as committee members, chairs, reviewers etc and among these few important are International Conference on Computer and Digital Manufacturing (ICCDM 2017), 4-6th May, 2017, Singapore, Fourth International Conference on Artificial Intelligence and Applications (AIAPP 2017), 25-26 March, 2017, Geneva, Switzerland, 5th International Conference on Information Technology and Science (ICITS 2017), 25-27 June, 2017, Beijing, China, 2nd International Conference on *Information Systems Engineering* (ICISE2017), 1-3 April, 2017, South Carolina, USA, Sixth International Conference on Software Engineering and Applications (SEA-2017), 25-26 March, 2017, Geneva, Switzerland, IND-17 Lisbon, Portugal, 7th International BDSM-17, Spain, 5th International Conference on Information and Computer Networks (ICICN 2017) 26-28 February, 2017, Bangkok, Thailand, 8th International Conference on ICT: Big Data, Cloud and Security (ICT-BDCS 2017), 21-22 August, 2017, Singapore and other 50+ reputed International events. He was also served in various visiting, invited and guest position in various events and few important are

ICRDSTHM-17, Kuala Lumpur, Malaysia 28-29th April, 2017, NSETRAR-17, Tamilnadu, India, ICIRHT-17 etc. He has done many Invited Talk in leading and reputed academic and industrial establishments viz. SRM University, Sikkim University, VIT University, Srinivas University, Mangalore University, TCG Digital, CloudNet India. He has received many Awards and Fellow position such as Best Researcher Award in Information Sciences (from IARA, Trichy), David Clark Blair Young Scientist Award in Computer & Information Science (from BSS, India), International Young Scientist Award (from ISROSET) for the contribution in Health Informatics, Citation Award (from SSCET/ Sri Sai University) Distinguished Young Information Science & Computing Academician in Asia (from IRDP) and so on.



Prof. Dr A Bhuimali, PhD, D.Litt.
Vice Chancellor,
Raiganj University, Raiganj
West Bengal, India

Prof. Dr A Bhuimali is the Vice Chancellor at the Raiganj University, Raiganj in the State of West Bengal in India. He is one of the dedicated educationist, economist in the region. Dr. Bhuimali holds MA (Economics) and PhD (Economics) from the University of North Bengal. Prof. Dr A Bhuimali also received the prestigious Post Doctoral Degree— D.Litt (Economics) from The Vidyasagar University, West Bengal, India. He joined teaching profession in the University of North Bengal and held the position of Head, Department of Economics, North Bengal University from various period. He was also the coordinator of Special Assistance Program (SAP-DRS-III) in the Department of Economics for five years.

He has authored several research papers, policy papers, review papers in several conferences, seminar of national and international repute. Dr. Bhuimali's work spread over economics to development studies to Information Management. He has authored and edited several National text and research based books from time to time. At his new job he is actively engaged in infrastructure development of the Raiganj University towards a modern experience of learning from Bachelors to Doctoral level from the foundation year of the University. Till date under the Vice Chancellorship of Prof. Bhuimali 15 Department started MPhil and PhD Program and about 20 Academic Units started PG degrees leading to MA/MSc/MCom/LLM. He has striking experience in guiding Doctoral students as well. He has guided about 25 PhD students in different Interdisciplinary subjects. He is also member of several societies and organization of national and international repute. His work and administration widely appreciated and therefore in many colleges, universities and projects he has involved as an advisors, consultant and member.

Naturally due to his contribution and dedication he has received many prestigious national and international award among them few (received recent past) are Ambedkar Social Service Award, (From IARA at Trichy, India) Outstanding University Administrator and Academic Excellence Award (From SRD at Malaysia), Paul Samuelson Economist Award (From SAMA at Bangkok), Parul Samman (The University of Calcutta, India), Life Time Achievement Award (The Confederation of India, New Delhi) and so on. He has been offered Fellow position to many organizations as well such as Fellow of ISROSET, India, Fellow of IARA, India and so on.



Prof. Dr. Kalishankar Tiwary, PhD, D.Sc.
Dean, Faculty of Science and Management
Raiganj University, West Bengal, India

Professor Dr. Kalishankar Tiwary has brilliant careers. He is a professor of the Department of Mathematics, Raiganj University, West Bengal, India. Professor Tiwary obtained his post graduate (MSc), undergraduate (BSc) and Doctor of Philosophy (PhD) from the university of Kalyani, West Bengal, India. He obtained his D.Sc. Degree in Mathematics from Raiganj University, West Bengal, India. He stood first in order of merit in post graduate and 2nd in undergraduate examinations. He was awarded National Merit scholarship in School as well in University examinations. He was Research Associate of CSIR.

He has supervised a number of students for Ph.D. Degree in different universities of West Bengal. Professor Dr. Kalishankar Tiwary has research collaborations with many eminent research workers in India and abroad. He has a credit of nearly eighty publications in India and abroad. He is associated with many research societies. Apart from this he is keen interested in History and literature. Professor Dr. Kalishankar Tiwary has many articles and a book on political affairs as well. He was associated with Lions club. He is associated with St John's Ambulance. Currently He is the Dean of the Faculty of Science and Management of Raiganj University, West Bengal. Additionally he is also Head of the Computer and Information Science, Director IQAC and Coordinator of NAAC. He has worked in different organizations and conferences as a committee members. He is also Editorial Board Members in different Journals of repute. He has participated in many research conferences. His current research area is Analysis, Topology and Graph theory etc.



Dr. Biswajit Satpathy, D.Sc.
Prof. Dept. of Business Administration
Sambalpur University, Odisha, India

Dr. Biswajit Satpathy had his schooling in Kendriya Vidyalaya, Sambalpur. He graduated in Mechanical Engineering in 1985 from the University College of Engineering, Burla, securing a first class. Dr. Satpathy was selected as a Management Trainee and was posted as an Engineer in the Small Parts Division of Hindustan Aeronautics Limited, (HAL) at Sunabeda, Odisha. Later on he joined Talcher Thermal Power Plant as an engineer. Thereafter he switched over to the profession of academics. He was appointed Lecturer at the University College of Engineering, his alma mater, in 1987, where he completed his M.Sc. degree in Production Engineering in the year 1991 with first class. In 1994, Dr. Satpathy became Reader in Production and Operations Management in the P.G. Department of Business Administration, Sambalpur University. He pursued his doctoral research in the same institution and obtained his Ph.D. In 2002, he became Professor in the same Department. Dr. Satpathy's field of research has been Productivity Management, and he has produced a number of PhDs in this field. His major research work on the application of the principles of Productivity Management in the field of Agriculture has earned him a good name. In the year 2008, he obtained his Doctor in Science (D.Sc.) Degree in Management on the topic "*Transformational Management Through The Bhagavad-Gita Worldview*". Dr. Satpathy's works on the Productivity Management relating to Agriculture, Banking and various Management Projects have been widely acclaimed. Dr. Satpathy was invited by the Pokhara University, Nepal, in 2008 to deliver talks on Productivity Management.

He has been continuously engaged in research in the chosen area of specialization, guiding Ph.D. degrees, supervising M.Phil.

Projects and teaching at the Postgraduate and M.Phil. levels. Over 100 MBA projects and 12 Doctorates, 2 D.Litts testify to his research expertise. Dr. Satpathy has so far published more than 60 papers in national and international journals and conferences. He has published research papers in collaboration with the faculties from foreign universities such as Swinburne University of Technology, Sarawak, Malaysia and Swinburne University of Technology, Australia. He has attended a number of conferences and has chaired various technical sessions. He has organized a good many conferences and workshops. Dr. Satpathy is a member of many Professional Societies. Apart from teaching he has occupied all the academic administrative post of the university and for a brief period he was Vice Chancellor I/C of Sambalpur university. Presently he is a syndicate member of Sambalpur university and was a member of Board of Management of VSSUT Burla.

He has also authored several popular books and a book on Indian Ethos and Values. Students at the Undergraduate and Postgraduate levels find his book on E-Commerce immensely useful. Apart from editing several Proceedings he has also served as a Member of the Editorial Boards of several National and International Journals. His current research areas of interest are Productivity Management, Quality Management, Indian Ethos and Values in Management and Composite Materials in Engineering.

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The effect of climate changes by noise pollution on the musical human being

Suparna Chatterjee

*Assistant Professor (Music), Nistarini College,
Purulia, West Bengal, India.*

Abstract

In this work, the author makes an analytical survey over the various negative effects of the curse of ever increasing menace of pollution caused by the growing industries who keep producing their commodities with an ulterior motive of monetary gains without giving any serious thought that the eco-terrorism will eventually be a perennial hazard for any living species for their sheer survival and also discusses how it is going to affect the patterns of music produced by maestros dedicated to the society with a view to creating an effect of ecstasy or solace in the peak of joy and abyss of bereavement. The author also discusses the effect of music utilized by the world of medical science to ameliorate the mental and physical trauma of the suffering human beings in all corners of the planet due to ceaseless escalation of the high decibel sounds by manufacturing units, transport system and the uncontrollable festive activities indulging in the reckless explosion of crackers and bombs.

1. Introduction

Since the decades of the seventies of the twentieth century, the conscious scientific community has been raising a clamor over the relentless rate of pollution of the environment in the name of developing the economy of the countries by erecting industrial units for widening the periphery of employment, inventing the lethal insecticides in the name of assuring bumper harvests without taking into cognizance of the fact that the venom left behind such immediate gain is going to bring forth an effect of devastating threat to the human society by reckless destruction of the flora and fauna of the earth that give an ameliorating effect to the mankind whenever the latter is subject to an adverse manmade artificial exposure such as toxic fumes and chemicals and radiation hazards.

It has long been established that the climate change is caused by the accumulation of greenhouse gases ^[1] from burning fossil fuels such as coal and wood and the roasting of minerals in industrial furnaces and the destruction of green areas that absorb massive amounts of carbon like the world's rainforests.

The author instead of analyzing the scientific causes of the contamination of nature with a host of scientific data and graphic presentation tries to establish a relation between this menace and the response of human being to the effects of musical resonance under the eyes of the grimacing demon of the pollution inkling toward a threat of “more flooding, more drought, more disease, more famine and more war, creating hundreds of millions of refugees and causing the destruction of entire ecosystems and species” ^[2].

2. Effect of noise on human health and psyche

As proposed by Goines et.al ^[3] in their work the noise can be described as undesirable harmful sound which goes a long way to damage and destroy the natural traits of the human beings leading to serious social problems by causing chronic interruptions in sleep, power of concentration, ability to communicate and impedes the process of recreation through which human being can relieve of their stress levels and lead a salubrious life. The same authors ^[3] are of the opinion that overexposure to noise may cause partial or total dumbness along with the menace of irregular sleep, fatal diseases of cardiovascular nature, retarded learning capability, general apathy towards life, drug addiction and criminal tendencies. A recent study by Khaiwal et.al ^[4] reveals that hospitals in India are not also free from the hazards of the noise pollution belying the universal expectation of a calm and serene atmosphere to be prevalent in the abodes of recovery and recuperation from the physical and psychological traumas. Incorporating the message of Florence Nightingale, the mother figure of the helpless ailing masses, that “Unnecessary noise is the most cruel abuse of care which can be inflicted on either the sick or the well”, they ^[4] regret that “little attention has been paid towards mitigating the hazards of noise pollution in hospitals.”

Donáth, T, and Orvosi Hetilap^[5] have established in their work that

From the environment surrounding us, there are different sounds, noises as physical waves, which are arriving to the living organism. These dissonant and consonant inputs have a negative or a positive

effect on the quality of life, respectively. The noise, as a dissonant sound has always a negative effect, while music, in the majority of cases, a positive effect. Both the professional and the non-professional noise as a pollution by its stress-provoking effect seriously damages the health. Therefore there is an important endeavor fighting against noise pollution to improve the quality of life. Well-selected music, by means of neurochemical transmissions, strengthens the immune system of the brain in all periods, from the intrauterine period to the end of life--it has a positive effect on the quality of life ^[5].

Cabrera and Lee ^[6] in their work suggest for the introduction of a “department assigned to (1) control the amount of noise in a hospital and (2) provide a center of music therapy for all individuals in the hospital setting, including in-patients, out-patients, doctors, and staff. Due to the large specificity of these areas, this unifying source, or ‘Department of Sound,’ for the greater benefit of the patients in healing up both their mental debility and physical weaknesses and ailments.

Limalemla et.al. ^[7] referring to the WHO report states that the noise level of 30 dB is permitted in bedrooms to ensure a sound sleep to shake off the physical fatigue and rejuvenation of the psychic state to encounter the challenges of another day of life, and the interference of noise should not exceed 35 dB with a view to eliminating the distracting effect of the annoying noise that deters the efforts of concentration to study and attention to teachers. They ^[6] cite further the recommendation of WHO mentioning that the noise level outside the bedroom also should not go beyond 40 dB on an average annually so as to permit the least possible requirement of tranquility throughout the neighborhoods of the human habitations.

The people in general in India seem to be unaware of the increasingly deleterious effects of the noise pollution which is evident from the ceaseless explosions of crackers not only during the major festivals but in any joyous celebrations like marriage, victory processions of elections, in the congregation of fairs which abound throughout the year in nook and corner of India.

3. Effect of music on the development of the human brain

It goes without mention that the controlling factor that drives the human being into any sort of physical or mental action is governed by the impulses of the brain, but it may be unknown to a large chunk of

earthlings that music plays a very crucial role in the gradual maturity of the human beings from their infancy to their adulthood.

As proposed by E. Georgieva^[8], music plays a very dominating role in shaping both physical and mental aptness of a growing child in the manner “that music has effect on digestion, inner secretion, circulation, feeding and breathing ..”. So it is evident not only from this investigation, but also is affirmed by the conviction of Plato who has pronounced in the remote past at the prime of the Greek civilization (Georgieva), that,

Musical training is a more potent instrument than any other, because rhythm and harmony find their way into the inward places of the soul...”. The music inspires a loving couple, a bereaved mother, a martyr fighting against injustice, and the bands of soldiers sacrificing their lives marching to the tune of music in the frontiers of the battle fields since the concept of nationhood has taken a deep seated root in the mindsets of the people of different ethnic groups.

It will, therefore, be not an irrelevant exercise in admitting the proposition of the Author, speaker, producer & composer Goldstein^[9] as to “how music affects the brain and mood by engaging emotion, memory, learning and neuroplasticity, and attention.”

3.1 Emotion

This is a fact to which every human is a witness in the sense that all of us have watched how a child reacts to the rhythm of music with a glittering smile and dances to the tune of the music and the lullaby that is sung in a soft voice to the orifice of the auditory organ of a child controls his restlessness leading to the profundity of a quiet slumber. As reported by Goldstein^[9] an audition to the music “can create peak emotions which increase the amount of dopamine, a specific neurotransmitter that is produced in the brain and helps control the brain’s reward and pleasure centers”, and he adds further stating that music augments the emotional response of children suffering from autism and that the autistic children can understand the sadness betrayed by the music of Beethoven and identify the joy of happiness in the composition of Pharrell Williams.

3.2 Memory

Goldstein^[9] in his discussion has further garnered from the scientific experiment of Petr Janata of the University of California that

“that there is a part of the brain that ‘associates music and memories when we experience emotionally salient episodic memories that are triggered by familiar songs from our personal past.’” And thus the listening to the music of the bygone days helps in recuperating the dementia of the Alzheimer’s patients.

3.3 Learning and Neuroplasticity

The neuroplasticity (Goldstein ^[9]) is “brain’s ability to reorganize itself by forming new neural connections throughout life, and can be greatly affected by the harmony of music and the brain.” And in case of any brain injury, the neuroplasticity enhances the patient’s ability to find “new pathways to function properly. Amazingly, music can provide the stimuli to create these new pathways.”

4.4 Attention

A group of research workers in a medical team of Stanford University (Goldstein ^[9]) has proved it beyond any iota of doubt that music enhances the power of attention and concentration and thereby improves the performance of students actively engaged in research and studies.

4. Deleterious effect of pollution on music

Alessandra Potenza ^[10] in her work, *Listen to music made to the rhythm of global warming*, made a categorical affirmation of the deleterious effects of global warming on the changing trends in the music produced, which are practically leading to a tardy generation of a chaotic raucous in place of an inspiring and heart soothing melodies. Potenza narrates the experience of the musician Crawford^[10] in the following manner.

The (musical) piece starts with calming strings that slowly build over the gentle sounds of birds chirping. As carbon dioxide concentrations steadily go up, starting in the mid-1800s during the Industrial Revolution, the tempo increases. The music grows more and more discordant in the early 2000s; by the 2030s, it’s so fast and distorted its anxiety inducing. And at the end of the century, when temperatures have increased by almost 9 degrees Fahrenheit, it’s more noise than music, like the static of a TV.

Rappler ^[11] investigated the effect of change in climate on the response of musical sound to the common human being. They found

by analyzing a database of 15000 pop songs that “finding statistical backing for the assumption that our moods are strongly swayed by the weather.” In the same vein, it has been reported the following by the same authors:

In Europe, “people are like: ‘Oh, yes!’ when it’s summer,” she said. “But if it’s going to be 40 degrees (Celsius, 104 degrees Fahrenheit) every summer for 10 years... that might change how people feel about the weather and the emotions they link to it.”

These investigations are vociferous in sending the message of omen that may be fall us with the concepts of season with steep global rise of temperature. The song that produces a soothing effect attuned to the advent of Spring, eulogizing the charms of the most enjoyable season of the year may appear to be nauseating to the public at large due evidently to the hike in temperature that constantly diverts their attention from the melody of the song to the trauma of a burning sensation due to the torrid atmosphere.

There has been attempt from the countries all over the Earth to reduce the pollution and save the mankind from extinction before the doomsday cast its spell on us. In this respect, it is heartening to note that the maestros in music are coming forward to make people aware of the colossal problem and trying to inspire the people to fight the menace. It is imperative to remember here the “Earth song” rendered by Michael Jackson, where he reminds us of our moral obligations to fight the menace of pollution which is going to destroy our humane feelings of solidarity through its suffocating thrust, through his inimitable voice asking us

Did you ever stop to notice, all the blood we’ve shed before.

Did you ever stop to notice, the crying Earth, the weeping shores?
(BBC news^[12]).

However, it is a matter of great hope and exultation to note that there is now a worldwide campaign launched by the music maestros to fight the explosion of pollution.

Conclusion

In the present state of affairs of combating the menace of pollution that lacks in sincere implementation of the schemes drawn in the weather summits in different corners of the globe, it is now incumbent upon the groups of lyricists and composers along with the

celebrity singers to come forward to make every earthling conscious of the prevailing danger in order to curb the menace of pollution without much lapse of time. It must be kept in mind that the extinction of melodious tunes under the brunt of the global warming or so to say a ubiquitous polluting effect may lead to the growth of robot like creatures who will fail to appreciate nuances of the smoothening effect of music, due no fault of their own, but to the fact that by then the structure of musical notes may have undergone a sickening distortion under the booming guns of unchecked global warming.

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