



Connecting Thinkers...

Editors' Message



We are very happy to present the fifth issue of Thinklet. The research centre in focus for this month's issue is the Centre for Nano and Material Sciences (CNMS) which carries out collaborative research in order to formulate products and processes to efficiently solve the current problems related to health, energy and water. The centre offers P.G, Ph.D and Post- Doctoral programs and also has its Ph.D scholars being awarded foreign fellowships and a chance to work in reputed labs in China, Thailand, Malaysia, Brazil and Portugal.

We thank all the doctoral students and faculty who regularly send us their contributions and feedback on the newsletter. We at Thinklet would love to hear from all those who haven't yet shared their ideas with us. Team Thinklet says goodbye to one more of its editorial team members Mr. Azhar Khan C.A. who was a Research Assistant at CERSSE for the past one year and an integral part of all our research activities. We wish Azhar 'Good Luck' as he pursues his dream of higher education. At the same time we welcome Ms. Kriti Chopra to our team at CERSSE. Kriti has joined us as a Research Assistant from the month of April and we wish her All the Best in this journey of research.

Happy Reading!

Announcements

- Jain University in collaboration with Lokniti (CSDS), Delhi, will conduct Workshop on 'Analyzing Quantitative Data on Indian Politics' in Bengaluru from **6th to 17th July 2015**.

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Dean's Column

Business Analytics and its Scope in India

The era of 1980's started the advent of Information Technology and Software Development. Computers and Information Technology started substituting manual work and huge investments started in the Information Technology sector. From a waiting period of 10 years for a telephone line it has now become 20 minutes and new Hi Tech phones has become the trend. Like mobile applications, storage, cloud computing have become the new age concepts in Information Technology. Business Analytics is a new specialized discipline which has evolved for finding solutions for complex business issues and challenges. It refers to the skills, technologies and practices to examine the past business performance to obtain understanding, develop new experience/insights and drive business planning. Business analytics does broad application of statistical analysis, including explanatory and predictive modeling, and fact-based management for the end objective of scientific decision making. Good Business Analytics practices need a fair understanding of Management concepts and principles, and an application of Data Mining tools.

This discipline helps forecast future scenarios, identify opportunities, anticipate issues and enhance processes. After acquisition of Data, the Data is managed or stored properly so that the same can be retrieved for further application. This is called Data Base Management System. The stored Data is then processed with Data Mining tools for the purpose of identifying associations, patterns, trends etc for getting a deeper insight about the Data. Typically, Neural Networks, Machine Learning and the like are applied for Data Mining. Predictive Analysis and Forecasting is done with popular techniques like Multiple Regression, Logistic Regression, Time Series Analysis and Decision Tree Analysis. Genetic Algorithm is generally used for Optimization. This whole endeavour of Capturing data, Storing data, Analyzing data and Drawing meaningful conclusions for management decision making is called Business Analytics.

According to IBM's recent study, 83% of Business Leaders listed Business Analytics as the top priority in their business priority list. The importance of Data Mining was reinforced by a 2014 Bloomberg survey that showed 97% of companies with revenues more than US\$100 million use Business Analytics of one form or another. NASSCOM has estimated that from 50,000 today, the demand for Analytics professionals in India will grow to 2,50,000 in the coming two-three years. This clearly indicates the future of Business Analytics professionals in India and abroad. Most of Business Entities use Analytics as one of the tools for Business predictions. Our own Bollywood has started predictions on Box Office using Business Analytics.



Dr Easwaran Iyer
Dean of Commerce, *Jain University*

Construction and Demolition Waste

Construction and demolition (C&D) waste is generated whenever any construction/demolition activity takes place. In general, there are two sources for generation of waste materials, namely, bulk generators and small generators. Roads, bridges, flyovers, apartments, parks, malls etc. are the bulk generators whereas tenements and small shops and buildings are small generators. C&D waste consists mostly of inert and non-biodegradable material such as concrete, stones, and rubble generated during excavation, plaster, asphalt, metal, wood, plastics, fly ash etc. These wastes are heavy, having high density, often bulky and require considerable amount of space for storage.

With increasing amount of C&D wastes, recycling of C&D waste material is the only option left to reduce the demand-supply gap in the construction materials. Controlled Low Strength Materials (CLSM) is a fluid mixture made of Portland cement, water, and fine aggregate or fly ash or both. Although CLSM costs more per cubic yard than most soil or granular backfill materials, its many advantages result in lower in-place costs. The enormous quantities of demolished concrete at various construction sites are now posing a serious problem of disposal in urban areas. This can easily be recycled as aggregate and used in concrete (Hansen 1992). The use of recycled aggregates conserves natural resources and reduces the space required for the landfill disposal. However, more research for application of recycled aggregates is needed for modifying our design codes, specifications and procedure for use of recycled aggregate concrete.

Since India is a developing nation, it is expected that the construction activities would result in millions of tons of waste annually.

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Knowing Alternate Medicines

We assume living gods as Doctors. Though it is a service oriented profession, it has become a business oriented profession. There have been continuous study and improvements made to save the most valuable human life. The life saving medical facilities is available only for the rich people. If we go for fever in a multi specialty hospital, often we are forced to do basic tests. It costs some few hundreds to thousands. Even worst cases though we had a CT scan for a particular problem in other medical centers still we have to repeat again just to make profits. Most of the times, medicines prescribed are made by Multi National Companies (MNC's) that are costly compared with the medicines made by Indian pharmaceutical companies.

Presently there are many service oriented doctors who are prescribing the alternate Indian medicines that cost reasonably less than the MNC make medicines.

There is an application called "Health Kart Plus". All android mobiles can install this. The uniqueness of this App is that one can get the important information of any medicine like Chemical Composition, Precautions, Availability, and more importantly, the Equivalent medicines with cost savings. After analyzing the alternate medicines, we have to consult with the doctors to use the alternate low cost medicine.

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My Research Journey Thus Far

Some new experiences on & off stage and many intriguing, unanswered questions prompted me to take up research in dance. While artists prefer to render performances, I decided to view the dance form in a different light, through a formal research course. The research methodology classes not just give insights into the many aspects of research like a research design, ethics, tools and techniques, but also on how they needed to be used. By the time we reach MPhil, most of us are aware of many such terms, but the why and how of all these and more was learnt.

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The research temperament that is required to approach any aspect of dance, theoretically or practically, is something that I learnt. Similarly, in the case of the Core Paper, a broad spectrum of culture was introduced which helped me in getting a bird's eye view of my subject. It also introduced me to many aspects of other disciplines thus providing ideas for future research. Research gives a holistic and balanced approach to a performance dominated field like dance. Such coursework becomes a necessity for taking up research in dance as it aids in developing a culture that enhances the knowledge of an artiste and inspires him/her to offer the best of the art form. I can safely say that life skills were learnt through these classes – for, now, one's conscience doesn't permit any topic to be discussed without a thorough research.

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Research Guidance – An Experience

My experience as a duly recognized Research Guide in English literary Studies began in the year 1997. There are two phases to this experience. One is the phase when many University Departments of Languages practiced a sparsely structured research programme. It was a study conducted through discussions between the respective research guide appointed and the candidate. I was part of this phase till 2007. The second phase is one the UGC has reworked where there is a clearly defined structure with steps and stages. I got to experience this phase of research guidance in 2010 as a Research guide in Jain University. During this phase, however, guides and candidates were dependent upon books stocked up in University libraries and one or two local libraries. Or we looked up to centers devoted to research either in Hyderabad or Mysore. I would describe it as the 'hunter gatherer' phase of research history in India.

The idea is to empower young research scholars to explore areas in Literary Studies hitherto unexplored or under explored. The knowledge about 'who we are' is key to a productive research culture in our country.

Today, the challenges are different. The research guide and the candidate have easy access to information and books through the internet and e-commerce options and the software available for quality academic output. In the new scenario the guide has to be several steps ahead of the candidate in keeping abreast with the latest developments in all areas affecting research. Many candidates, however, find it difficult to prioritize their research life as most important for that particular duration of time. Those who survive the pressures and beat the indifferent attitudes manage to complete their research very successfully. I can proudly name three such candidates who completed their research successfully under my supervision in Jain University, Dr. H.N.Prakrithi, Dr. Shireen Nedungadi and Dr. Sreedevi Santosh.

*Dr. K.G.Bhuvana Maheshwari
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Lessons from the Epics

Ace automobile racer Bobby Unser famously said, “*Success is when Preparation and Opportunity meet*”. Nobody has ever succeeded in their endeavors without preparing for an opportunity. In fact, this “preparation” has a long history which can be dated back to the Hindu *Puranas* or epics such as Mahabharata and Ramayana. Frequent battles between Lord Sri Ram and Ravan, characters from the Ramayana were engrossed in an epic combat that culminated with Ravan dying after one powerful arrow from the bow of Sri Ram pierced through his chest. Just while the battle would have begun we would have witnessed that each one of the warring individuals would have started to use different types of ammunitions to outsmart the other and eventually win the duel. In

It is imperative for us to learn from epics that even thousands of years ago, importance was given to preparation before succeeding

this riveting contest, at one point, after the protagonist would feel that his opponent is smarter than he had imagined, he would start pulling out from his quiver some specially designed arrows which he uses effectively and ensures the antagonist would be fatally hurt or killed leading to the good prevailing over evil.

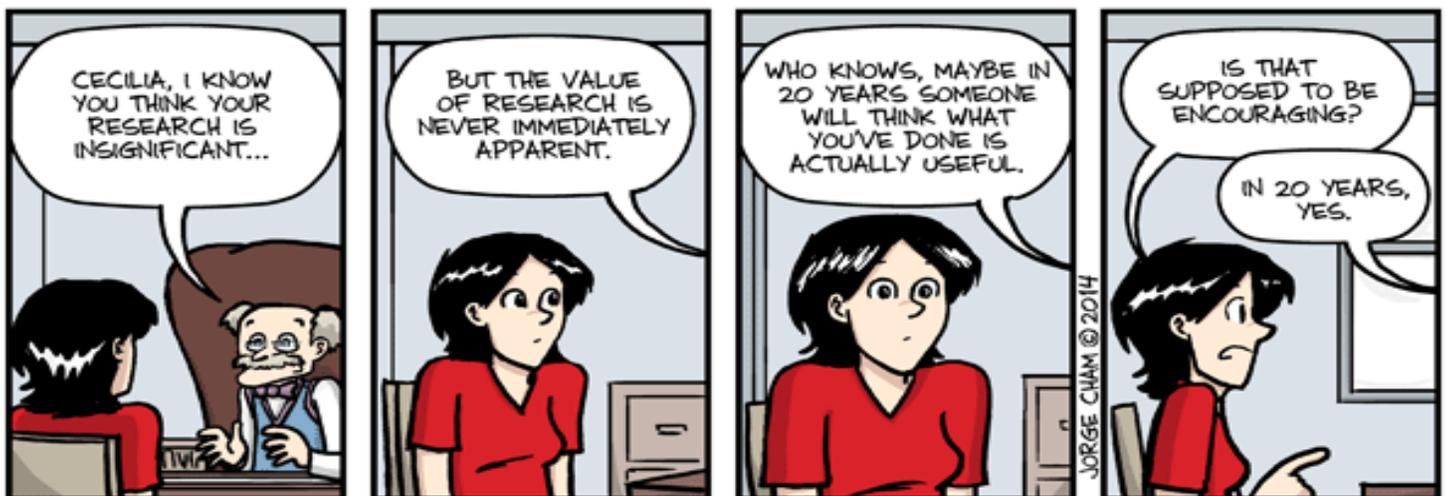
The moral of the stories have been that one has to meticulously understand the opponents and never underestimate their abilities. In our lives too, we come across several such challenges which are actually opportunities that aid us to grow. Hence, it is imperative for us to learn from such epics that even thousands of years ago importance was given to preparation before succeeding and today too we have to prepare or equip ourselves with such powerful ammunitions that can help us in success-

fully meeting life’s challenges.

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“It is a thousand times better to have common sense without education than to have education without common sense.”

~Robert G. Ingersoll



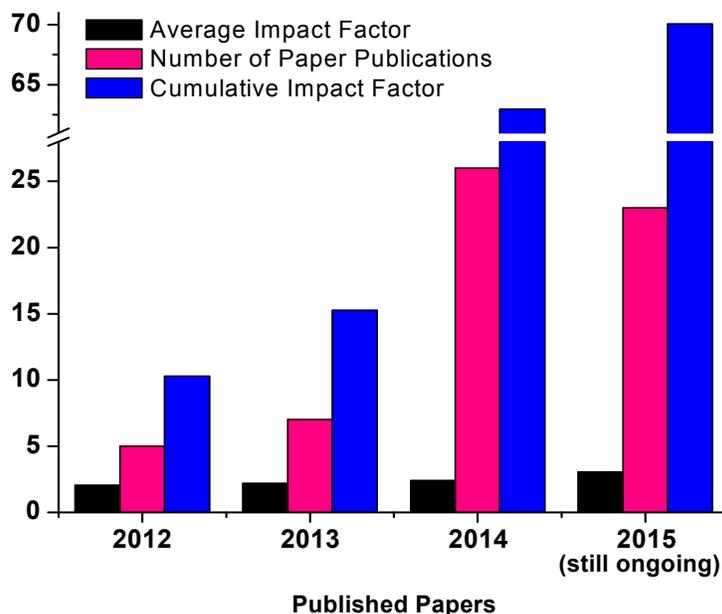
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Centre for Nano and Material Sciences

Centre for Nano and Material Sciences (CNMS) is a dedicated research centre supported by ten Professors as core faculty and five as senior Research Associates. The centre offers programs in Post Graduation, Doctoral and Post Doctoral disciplines with a strong co-ordination of learning, teaching and research at all levels. Our quality of life is increasingly dependent on the enabled advanced materials and we have chosen the pathway of research and collaboration to make these materials. A hallmark of our centre has always been a strong collaboration with scientists (across the globe), who have realized the need for construction or modification of materials at atomic /molecular scale in order to enhance the end products and processes efficiently to solve some of the current problems related to health, energy and water.



The centre is presently at its infant stage where, each faculty is focused in making their concepts and fundamentals very strong to build good confidence and knowledge so as to take his or her innovations into technology at a later stage. This is quite evident from its track record of research results being published as shown in the adjacent graph:



The graph displays a progressive growth, favourable to leap up and take up bigger challenges ahead. The Ph D scholars have won many foreign fellowships competing with tough players like IISC, CSIR, DFRL, DRDO and IIT fellows. To name a few, Manjunath, Ravishankar Asha Murali, Alamelu and Jyothi, have been assigned to various reputed labs in China, Thailand, Malaysia, Brazil and Portugal. The centre has been able to attract Rs. 2.86 crores of funding from external funding agencies with 1.78 crore being sanctioned presently. This has facilitated well equipped laboratories to synthesize and characterize advanced materials for thrust applications, as in liquid junction solar cells, organic solar cells, battery materials, hydrogen generation, water remediation / separation/ treatment / disinfection metal sensing, gas sensors, biosensors, micro fluidic devices, therapeutic agents as anticancer, anti diabetes and anti-alzheimer drugs. In the years to come, CNMS visualizes to be one of the “DREAM RESEARCH HUB for materials” where every researcher / technologists / entrepreneur / would wish of getting access to.

Team Thinklet

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Articles for the next issue should be sent by **May 20, 2015**, in not more than **250 words**.

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