ThinकL€N

Connecting Thinkers…

Editors' Message

Dear Thinkers,

Through our Editorials, we try to bring to light the various aspects of Research that are significant and essential to research in almost all domains. In the past few months, we have written about noteworthy aspects such as writing and publishing, and have received encouraging responses from Guides and Scholars alike. With this issue, we would like to highlight one of the most undermined and overlooked parts of Research: YOU- the Researcher.

While we all search for knowledge and resources emphasizing on how to do research, we often ignore the physical and mental health and wellness aspects of the Researcher. There are various wellness techniques we can include in our daily life, by just giving half an hour to ourselves in the whole day, and making minor changes in our routine. We do read about all these but don't always act on them.

There is an overdose of information available on the internet regarding this matter. They range from dietary tips for a healthy living to exercise and workout regimen. A lot of us believe in incorporating a physical exercise routine in our day, while others give importance to yoga and meditation. Whichever one you choose, it is essential that we get some 'alone' time with ourselves. This will help us get a clearer perspective in all that we do, whether it is our professional life, personal life or research life.

Some of the scholars working on stress management, work-life balance etc, are ironically stressed themselves and under a lot of pressure. We at Thinklet encourage you to give time and attention to yourselves, because we don't want you to forget that the most essential element in Research is You.

Inside the Issue

GUIDE'S COLUMN
Do You Always Get Research Results as Planned?

In the fields of <u>observation</u> chance favours only the prepared <u>mind</u> – Louis Pasteur
My strength lies in my tenacity – Louis Pasteur

Dear researcher (guide and student), consider the following situations you encounter in your research career. First, you want to secure a PhD degree, as a part of which you submit a synopsis of your plan of work and the results expected to be achieved. Later, you aspire to get into an academic or a research institution, for which you will have to submit to the employer your re-search plan including the anticipated results and their possible applications. Soon after, while trying to become an independent researcher, you will apply for financial support for your research activity from funding organizations. Here again, you are re-quired to submit a detailed step-wise plan of research that would contain the background, data collection and analysis, and the results expected to come out. In all these cases, you can clearly see that there is a grand assumption that the results are clear-cut and quite predictable. The confidence in our ability to foresee the outcome of the proposed research plan is based on the scien-tific facts, hypotheses and the theories prevalent at the time of the proposal. In fact, one of the hallmarks of a good scientific theory or hypothesis is its potential to predict the outcome of research study undertaken. Such research moves very much on the planned lines and yields expected results is called "goal-oriented research", and in many cases it does happen so, which proves or validates the correctness of the theory. This gives satisfaction to the researcher, as one finds oneself in expanding the usefulness of the theory in achieving a desired goal. However, in reality it does not always happen this way, particularly in the area of natural sciences (chemistry, biology, physics and other related fields of science and technology), and we quite often encounter research projects throwing up most unexpected results that challenge the established theory.   The unexpected re-sults may be trivial and may not be of much consequence or very profound and would necessitate modification of the current theory or formulation of a new theory. They become basis for expansion of scientific knowledge and turning points in the ad-vancement of the relevant fields.

Exceptional outcomes, while being reported in journals, conferences etc., find such expressions like, "An unusual reaction of...", "To our pleasant surprise...", "The results are quite unexpected/unprecedented", "A novel observation...", "A remarkable transformation...", or other similar ones. (In fact, I have used most of these phrases in my publications, including titles, one of which runs like this: "An unusual ring opening..."). Employment of such phrases implies that an initially envisioned research goal was not realised, but something quite different from the anticipated happened. A look at the published literature indicates that such unusual outcomes are not really all that uncommon, and most of the scientists would get this experience sometime or the other during the course of their scientific investigations. The new finding may be trivial or very profound. If it is the former case, some new knowledge is added to the existing one in the field under study; however, if it is the latter case, it would be-come a magnificent turning point in the path of scientific and technological development.

Our scientific knowledge can grow in depth and degree, and branch off in all directions when some idea suddenly strikes dur-ing the process of a virtual or thought experiment, or something unanticipated is observed in the results of an actual experiment in which we can find meaning and formulate a new hypothesis. Even the actual experiments are initiated in our thought proc-ess, which then are translated into actual physical experiments that are planned and executed by using necessary materials and equipment or mathematical procedures or physical models. In the class of thought experiments that are revolutionary in the advancement of science, Kekule's ideas of bonding between carbon atoms and of ring structure for benzene that came to him through the images he visualised in his dreams are fascinating and famous. Einstein's thought experiments that led to the dis-covery of theory of relativity are also well known. There are many more such examples.

Anyway, the point is that one may find a solution to a scientific problem in a flash and quite accidentally. When a well planned research is expected to yield a certain result, but you end up getting something new that is interesting and important, it is called "serendipitous discovery".

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This article will be continued and concluded in the next issue.

Identity –Based Cryptography

Password authenticated key exchange (PAKE) is where two or more parties, based only on their knowledge of a password, establish a cryptographic key using an exchange of messages, such that an unauthorized party one who controls the communication channel but does not possess the password cannot participate in the method and is constrained as much as possible from brute force guessing the password. In two-server password-authenticated key exchange (PAKE) protocol, a client splits its password and stores two shares of its password in the two servers, respectively, and the two servers then cooperate to authenticate the client without knowing the password of the client. In case one server is compromised by an adversary, the password of the client is required to remain secure. To secure communications between two parties, an authenticated encryption key is required to agree on in advance. So far, two models have existed for authenticated key exchange. One model assumes that two parties already share some cryptographically-strong information: either a secret key which can be used for encryption/authentication of messages, or a public key which can be used for encryption/ signing of messages. These keys are random and hard to remember.

First to introduce PAKE, where two parties, based only on their knowledge of a password establish a cryptographic key by exchange of messages. A PAKE protocol has to be immune to on-line and off-line dictionary attacks. In an off-line dictionary attack, an adversary exhaustively tries all possible passwords in a dictionary in order to determine the password of the client on the basis of the exchanged messages. In on-line dictionary attack, an adversary simply attempts to login repeatedly, trying each possible password. By cryptographic means only, none of PAKE protocols can prevent on-line dictionary attacks. But on-line attacks can be stopped simply by setting a threshold to the number of login failures.

A PAKE protocol has to be immune to on-line and off-line dictionary attacks

Earlier password-based authentication systems transmitted a cryptographic hash of the password over a public channel which makes the hash value accessible to an attacker. We need an identity-based signature scheme (IBS) as our cryptographic building block. A high-level description of our compiler in which the client C and two servers A and B establish two authenticated keys, respectively. If we remove authentication elements from our compiler, our key exchange protocol is essentially the Diffie-Hellman key exchange protocol. We present the protocol by describing initialization and execution.

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Jain University is happy to announce the holding of the Research Retreat on 12-13 August 2017. Researchers whose proposals have been approved for presentation have been invited for the Retreat. Guides are also being invited for the event. We will carry a report on the Retreat in the September issue.

The Minefield that is Data Analysis

In the previous issue of Thinklet, I wrote about the difficulties that arose during the process of data collection in the field of Social Science Research. This time around, I felt it necessary to elucidate on the next step- process of data analysis. So with data collection done, I had 600 survey questionnaires with me along with six hours of transcript of my Focus Group Discussion- enormous data in two different mediums which had to be analyzed in different ways. Then began the process of coding and data entry.

One of the things I have been thankful for was that I had decided on the coding process at the time of designing the survey itself- which made it much easier for me to enter the data into my system. I found this process much more efficient and less confusing to be done before the data actually arrives. So with the entry done, the process of choosing the right statistical techniques was the next challenge. Just because I had so much of data with me, it was very tempting for me to try all the statistical techniques I knew and understood simply because the software was doing it for me. But it is important to remember what our objectives are and only use those techniques that can help test our hypotheses or fulfill our objectives.

When social scientists work with numbers, they tend to get overwhelmed by different components of statistics, resulting in panic and avoiding numbers altogether

One of the things I have observed is that when social scientists work with numbers, they tend to get overwhelmed by the different components of statistics. This results in either panic and avoiding numbers altogether or else getting someone else to work the statistics for them without attempting to personally understand its implications. Either option is not conducive for good research. In the former, you are giving up on a valuable source of data and in the latter, your inferences will be limited based on the statistician. So take the time to understand what the numbers mean. With qualitative data, it is appealing to reduce the data to only a very basic level. Again this results in the loss of so much of essential data that can perhaps change perspectives. So before one starts the actual analysis, it is necessary to spend some time on planning for how the analysis would best serve the objectives of the research. Only when one is confident of this should you allow yourselves to go ahead with it. Make the attempt to learn the techniques and more importantly the logic behind using these techniques and your research will be the best it can be!

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Corrections

In the July issue of Thinklet, we inadvertently published the research scholar's name as 'Mr.' Gulshan Khalique whereas it should have been Ms.

Also, Mr. Nitin K.S. belongs to Life Sciences– Zoology department and not Physics as published in July Thinklet.

We apologise for the mistakes to the concerned research scholars and readers.

Lessons from Thesis Writing

Often, we find ourselves postponing writing the chapters of our thesis as a research scholar. While this can be easily blamed on the complicated life and innumerable responsibilities one is shouldering at home and work, this does not excuse our role in writing the chapters in the required fashion. When I started the work on the same, one of the first things I noticed was dedicating some amount of time towards this consistently, apart from data collection, learning analysis, etc. Thanks to the regular visits to my guides and their mentoring, I was in fact able to submit the thesis according to the plan. A few takeaways for me were:

◊ It is important to set a plan in place and link up the chapters to establish the intellectual flow through them.

◊ Always ask yourself, how would I understand this if I were a reader and not the researcher. And what if the reader is from a different domain?

◊ Jot down all important points by creating separate sections in a word document and add references as well for further scrutiny later. This works in your favour at a later stage when you are compiling the thesis and may have forgotten the reference source.

◊ Read your objectives and hypotheses once every week and definitely once before finalizing on any chapter

◊ Ask yourself: Have I addressed all the key variables in my study? Have I added anything unnecessary or missed out anything important?

◊ Do 'grammar check' at least a dozen times on every chapter and yet don't expect it to be free of errors!

◊ Fight with alignment challenges, preferably before showing it to the guide for approval. Till then keep the mess safe!

◊ Present key aspects as a diagram or as a flowchart to catch the reader's eye just at the right time.

◊ With all best intentions, the writer usually is unable to see their own flaws (at least a few). So, exchange it with your colleagues, other scholars and well-wishers who can track some silly mistakes and save you a ton of embarrassment. You can complement them by doing the same when they have the need. I particularly remember Dr. Shastri stating that it is a learning experience when one interacts with a research scholar from a different domain for discussing their work and this is so true.

When you are finally ready to send the document for printing, applaud yourself for all the strenuous work and sacrifices you have put in! More importantly, enjoy the published piece of work.

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Success does not lie in Results, but in Efforts.

Being the best is not so important; Doing the best is all that matters.

Convergence of Text and Context in Identity Politics Today

As neo-liberal globalisation aggressively re-maps the nations and re-defines the geographical and cultural identity which go on unperturbed for a very long period, the time has already elapsed for the critical consciousness to make adequate intervention to revert the process. At this juncture what could be the approach of researchers towards this pernicious tendency? When it comes to research in English Literature the common practice was to undertake an analysis of the literary landscapes – narrative style, metaphor, symbols, recurring motifs – painted in the selected texts during the fact-finding mission.

But over a period of time it has become clear that 'entextualisation' alone will not provide the evidences to save the 'bioregions' from 'de-territorialisation'. It is worth to remember Edward Said who has ascertained the 'worldliness' of texts. And hence 'contextualisation' of the textualised lived-experiences that are embedded in the re-presented world of literature began as a suitable methodology to seek truth about the existing social reality. The lived experiences that are being explored are: spatiality, temporality, corporeality and rationality which are in connection with the populace depicted in the text.

The unitary framework of text and context has a paramount importance in the current social, political and economical scenario

The unitary framework of text and context has a paramount importance in the current social, political and economical scenario. The context-driven critical explorations on textual evidences would definitely help in dismissing the disruptive agenda unleashed by the perpetrators of pseudo- nationalism and globalism and also in preserving the rich and diverse cultural practices that make each nation unique in its own way.

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Developing Skills at Every Step of the Research Journey

Skill development is the need of the hour. Manufacturing sector requires continuous update of skill to meet the dynamic market requirements. Every organisation runs with a set of skills that help in the progress of the organisation. Mapping each one of the skill set and threading them into a systematic flow chart is where the role of a researcher comes in.

As a researcher, we need to be ahead in terms of pre-empting the needs of the organisation and grab a suitably skilled candidate that can benefit the particular organisation. In order to fish the exact skill requirement for a particular organisation we need to talk to various cadres of people. This requires lots of considerations and communication with people ranging from operators to the managing director of the organization. During this

Research is also a never ending journey of developing skills at every step

course, we come across lots of ideas and cross connection of skills. This increases our commitment to research, self-management, time management, prioritizing things, work life balance and so on.

Jain University's skill development program aims at helping every researcher in showcasing their best performance. Under the guidance of experts and persistent hard work, research work will take the shape that benefits industry and society overall. Our research journey improves our communication skills, creative thinking, flexibility, patience, never-give-up attitude, critical thinking, independent working and list goes on. Thus, as learning is an ongoing process, research is also a never ending journey of developing skills at every step.

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Publications and Achievements

◊ Ms. Aparna Ramaswamy, M.Phil Scholar in Psychology (Batch of 2015), Jain University has recently published a paper titled 'Purchase of Team Merchandise, Dislike Towards Rival Team, Team Affiliation and Sport Consumer Motives with Respect to the Levels of Team Identification among Team Sport Fans' in the UGC approved Journal *Personality Study and Group Behaviour.* The article is co-authored by Dr. Santhosh.

◊ Ms. Madhavi R, Research Scholar in Commerce, Jain University, has recently published an article titled 'Relationship of Spirituality, Emotional Intelligence and Productivity among Academicians in Higher Education – A Socio-demographic Analysis' in GE-IJMR *International Journal for Management Research*. The article is co-authored with Dr. Easwaran Iyer and Dr. Shailaja Shastri.

◊ Mr. Shivaputra, Research Scholar in Electronics Engineering, Jain University, has secured second place at the KSTA national conference on 'Impact of Science and Technology on Society and Economy' in the Poster Presentation category organized by Karnataka Science and Technology Academy (KSTA), Govt. of Karnataka, in March 2017.

THINKLET Congratulates all the Achievers and Wishes them All the Best in their future endeavours.

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ARTICLES FOR NEXT ISSUE SHOULD BE SENT BY **August 20, 2017** WITH **NOT** MORE THAN **250** WORDS
PLEASE INCLUDE YOUR NAME, E-MAIL ADDRESS AND THE KNOWLEDGE DOMAIN OF YOUR INTEREST