



Connecting Thinkers...

New Year Greetings from Thinklet!

Message from the Chancellor



It is a privilege to extend my greetings to each one of you for a happy, healthy and harmonious 2021. We have just completed an eventful year (2020) that was one of its kind. The year was filled with challenges but also brought many opportunities. As a University, JAIN made every effort to reach out to all stakeholders and continue to focus on imparting quality education and undertaking research of a high standard. Each one of you has contributed to augmenting the research output of the University. As a University we have committed ourselves to Innovation and research is a key area in which we hope to see this reflecting itself. My best wishes to you all!

Dr. Chenraj Roychand
Chancellor, JAIN (Deemed-to-be University)

Message from the Pro – Chancellor

Greetings!

I extend my warm New Year greetings to the Thinklet team, Research guides and Research scholars.

Firstly, I would like to acknowledge the sincere efforts of the Research Team in their collective efforts in contributing to the realization of the Research Mandate of the University. The year 2020 was filled with various landmarks and achievements.

Looking ahead, 2021 should reflect a radical change in the focus and attitude through a marked commitment to research, innovation, leadership, integrity, commitment and professionalism. I am sure that the Research team would contribute meaningfully and in tangible ways to the growth of the University, which they have already been doing.

There are numerous opportunities for growth and development in the field of research and innovation. Our efforts in technology development, incubation, transfer and commercialisation, research and innovation become the bedrock of our very existence and the reason for our success. The magazine enables the readers to access information about the challenges and priorities the year will bring in the research domain and offer views and comments. In this direction Thinklet has served as a very good platform for all the Researchers of JAIN University to share their knowledge.

I wish to acknowledge and thank all of them who have contributed at each and every step to this research magazine and are committed to the mandate in our academic programmes and research, development and innovation outputs in the year 2020. I trust they will continue the same in 2021. I sincerely hope the Thinklet team will strive to execute more effectively the opportunity bestowed upon them. It is my pleasure to wish a glorious New Year to the Advisors, Editors and all those who are involved in contributing towards the continuing success of this magazine.

I once again wish the entire team “A VERY HAPPY NEW YEAR -2021”.

GOOD LUCK!



Col. (Hony.) Dr. N. Sundararajan
Pro-Chancellor, JAIN (Deemed-to-be University)

Message from the Vice – Chancellor

December 2020 issue of THINKLET was the first issue I had opportunity of going through and of relishing the contents therein. The topics covered were ranging from the process of finalizing topic of the Ph.D research to highly technical writings by the guides and the researchers to Hindi poems expressing powerful human emotions made me feel that the publication called THINKLET says, “Let Thinking be the Way!” How important it is indeed in any research activity to often find intellectual debates to churn the ideas and thoughts to convert them into a process leading to new perspective, new frameworks and possibly new products and services for the benefit of the industry, the community and the society at large!



It was just during the third week of December 2020 when I was talking to one of my senior colleagues in the University who is a veteran engineer currently involved in the study of history of science through Sanskrit literature in an effort to find the missing links in the history. The joy of listening to him can be felt rather than being expressed in words. As he eloquently spoke about the advancements in science and technology through the history as seen through

the eyes of Sanskrit scholars, Rishis and Munis, one of the feeling was to appreciate the beauty of interdisciplinarity of academic discussion and discourse, an extremely important ingredient of the process of conception, creation and deliverance of innovations through research as we try to make our world a better place than it has been until yesterday. An innovation, as defined by a technocrat friend of mine from Chennai, is something that we lived without till yesterday but cannot think of living without from tomorrow!

As we emerge out of the year 2020, to be known as “not the year to get everything we want but the year to appreciate what we have”, and enter 2021 the year of hope, we will need, more than ever before, the power of ideas, the power of intellectual deliberations, the power of embracing the diversity in an already diverse and beautiful country, the power of innovation, the power of creation and above all the power of self-reliance by engaging in a globalized and digitally connected world.

I wish everyone a Happy and Thinking 2021! Let THINKLET enliven the power of thinking as we unleash the full potential of research!

Prof. Raj Singh

Vice Chancellor, JAIN (Deemed-to-be University)

Message from the Pro Vice – Chancellor

Welcoming 2021!

While bidding goodbye to 2020 and stepping into 2021, one experiences mixed emotions. It is the earnest hope of all that the pandemic (that was so crucial to defining what happened in the year just gone by) would be a matter of the past, the news of a `second` allegedly more infectious corona virus strain has once again heightened public tensions. Thus enter the New Year with Mixed Feelings – Some Anxieties, Some Apprehensions, Some Hopes and Some Expectations. This is in some ways the reality of life – an element of uncertainty, a constant search for redefining our paths and goals and a indomitable spirit of resilience. This would be our greatest strength as we move forward in 2021. Innovation has become the buzzword of JAIN 2.0. As researchers we are constantly seeking to innovate. Our search for new ideas, our attempts at approaching contemporary challenges from a refreshingly different perspective, our searching second look at our research methods and our focus on the application of our research to solve societal challenges keeps the spirit of innovation alive. We have also come to realize that Innovation is Work in progress! Every success brings a new challenge! Every achievement leads to raising the bar higher! There never ceases to be a dull moment. At JAIN, we have conscientiously attempted to build a research culture that fosters collaboration, encourages innovation and has social utility at its core. This research culture has influenced our researcher in the choice of their research themes, in the exploration of their research methods and in the sophistication that has been embedded in their complex analysis. This research culture has allowed us to aspire for greater heights of success and achievement. It is my wish and prayer that 2021 further expands our collective efforts and enhances our research output and we all reach the full potential of our capabilities.



Dr. Sandeep Shastri

Pro Vice-Chancellor, JAIN (Deemed-to-be University)

Editors' Message



Mary Angelou said, “I can be changed by what happens to me. But I refuse to be reduced by it.” Truer words were not spoken. 2020 impacted us all in a manner that was beyond our wildest imaginations. Yet the human race persisted and fought the COVID-19 pandemic. For those of us left standing, we learnt to cherish the gift of life above everything. We swallowed the bitter pill of human mortality and above all, emerged resilient and grateful. Academia around the world shifted to online blended learning mode and teachers reskilled themselves to do their jobs online battling a ‘new normal’. The challenge of the digital divide was sought to be bridged with attempts made to provide gadgets and internet to all. Yet



many were left behind. Never before has mankind depended so entirely on the internet! Yet, we learnt to slow down, absorb the moments and realise that there is so much that we have and so much we can do. While we thank all frontline workers who have battled this pandemic, let us not forget to thank ourselves too. We, the teachers and scholars, who did not rest and carried on daily on our desks and laptops ensuring that learning does not stop. We too were at our frontlines daily, not giving up despite workloads that had trebled in the shift to the digital platform. Hats off to the persistence of the ‘Thinkers’! Wishing everyone a safe and healthy 2020!

*Dr. Priyanca Mathur and Dr. Reetika Syal
Editors, Thinklet
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Message from the Consulting Editor:

नव वर्ष की दहलीज़ पर,
दे रहा है दस्तक.... समय।
ढूँढ़ रहा है खुद को,
बीते वर्ष की वीरानी में।
थम-सा गया था सब कुछ
किसी अदृश्य, दुष्ट शक्ति के दबाव में।
परंतु देखा अद्भुत खेल,
आत्म-शक्ति, विश्वास और साहस ने दिया बल,
उम्मीद और आशा की किरण ने दिखाई राह।
कहीं फटी ज्वाला तो कहीं शांत मानसरोवर-सा,
दुख के अथाह सागर से जूझते को,
दिया सहारा, किसी ने, तिनके का।
व्यथित काल के अंधकार में जले
लौ की तपिश ने,
न बुझने दी आस ।
दी है दस्तक, समय ने,
नयी उम्मीद, नये अरमान
तैयार खड़े हैं सब,
नव वर्ष, नयी सुबह के स्वागत में।



*Dr. Mythili P. Rao
Dean, Languages, and Consulting Editor Thinklet
JAIN (Deemed-to-be University)*

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Research Retreat 2020– An Overview

2020 was an unusual year. We never thought that classes could be conducted online and that students and teachers would get to see and interact with each other on a computer/phone screen! As was/is the necessity to maintain physical distancing amongst us humans, we had the annual Research Retreat too, happening online on 19th and 20th December 2020.

Day 1 began with 10 Breakout Sessions happening simultaneously. After this, we had Prof. Raj Singh, Vice-Chancellor, JAIN, delivering the First Plenary Lecture and he spoke in detail about *'Education at the Intersection of Research and Practice'*. This was followed by the Second Plenary Lecture by Dr. Shakuntala Katre, Former Dean of Sciences and Professor of Zoology, Bangalore University who spoke on *'Building a Research Culture in Higher Education'*. The Third Plenary Lecture was by Dr. M.K. Sridhar, Member, UGC and Member, National Education Policy Draft Committee on *'Research and National Education Policy (NEP) 2020'*. The day concluded with a stellar performance by Music and Dance Scholars of JAIN who presented a medley of songs across languages and genres. Scholars from various departments also chipped in by singing songs and reciting poetry.

Day 2 had Concurrent Sessions across 21 Panels happening simultaneously where scholars presented the progress in their Ph.D journey. The best presenters were awarded the Best Presentation Certificates who were marked by expert panel members based on their presentation skills and the amount of progress in their thesis. The Retreat ended with Faculty Plenary Sessions which were delivered by stalwarts in the disciplines of Engineering, Management, Languages and Social Sciences and Sciences. Each resource person talked about how research can be done in their respective disciplines. The advantage of the retreat being held online was that we were not restricted to having our resource persons from Bengaluru, but from across the country. Details on the same are mentioned ahead. Read on...

Breakout Sessions– An Overview

About three years ago an additional feature was added to the Research Retreat called ‘BREAKOUT SESSIONS’. They were designed and offered as sessions before the Plenary session in a presentation or a workshop mode, delivered either by a Faculty member or an Alumni of the research programme. The themes were created by the presenters. The emphasis of these sessions would be to expose the audience to the finer nuances of research in that domain or introduce them to the inter-disciplinarity of research. During the Research Retreat 2020, 10 such Breakout Sessions covering a cross section of subjects ranging from inter-disciplinary research to technical subjects in science and a unique session by an Alumni on preparing for the final defense by the research scholar.

Dr. Bindu Subramaniam focused on how one should *Manage Interdisciplinarity in Research*. One of the most important focus areas of the discussion was on defining the scope in interdisciplinary research and how easy it is for one to get swayed away by the various dimensions arising in it. She pointed out that it was very important to stay focused on the objectives drawn up and allow the guide to help you decide on which inter disciplinary areas the scholar should ideally focus on.

Dr. Gopalakrishna presented a session on *Approach to Interdisciplinary Research*. The session dealt with the definition of and the methodology for interdisciplinary approach. According to him real-world problems rely heavily on Interdisciplinary Approach for solutions. The need for interdisciplinary approach was beautifully discussed with an example and case study.

Dr. Madhuprasad laid out the socio-scientific understanding of a topic which is very close to the current challenges facing the world specifically with water with the theme titled *Water: Contamination, Remediation and Our Responsibility*. While giving a scientist’s view of the process of contamination, he threw light on the responsibility of each individual in managing this resource which is fast becoming scarce.

Dealing with a topic that the world is living with since the beginning of 2020, **Dr. Priyanca Mathur** titled her exposition *What Does the Pandemic Teach Us About Society and Humanity?* According to her this last year has thrown the spotlight back on social sciences and humanities as while science and policy gives us the vaccine and lockdown, it is the social sciences that guide us how to implement and distribute the same in society. In the current circumstances 4 aspects of human behaviour have become imperative namely 1. Collaboration 2. Improved visibility 3. Credibility 4. Incentives. The Pandemic has had a deep impact on research in all domains mainly affecting the funding of research. Under the circumstances, collaboration with institutions, industries, policy makers helps enhancing the quality of research. Improve visibility can increase our vision and can bring external partners. Whereas, credibility and incentives can help significantly in encouraging people who did research or participated in the research.

Dr. Rituparna Tewari chose to speak on *Shifting the Priorities in the Midst of the Pandemic: A Snapshot of My Journey from AMR Research to COVID-19* in which she effectively presented how her strong fundamentals in laboratory work prepared her for the new project that she had undertaken dealing with research on COVID-19. Though the session was heavy with scientific inputs, a lot of ideas were gleaned by the audience who were from a cross-section of subjects, as was evident with the discussion that it generated.

Dr. (Lt. Col. Retd.) Samarendra Narayanan spoke about *Biosafety and OHS in Laboratory Facilities*. At the end of this session it was evident why this subject needed to be given importance by all those who were embarking on experimental research. While introducing the audience to the various aspects of bio-hazards, bio-safety he used a number of live examples drawn from his own experiences in laboratory work. The audience connected very well with the speaker and the subject.

With **Dr. Sangeeta Devanathan** speaking about *Organising Your Ph.D Viva Presentation* what may have otherwise seemed to be an extremely layman topic turned out to be a most fruitful session with many valuable lessons for all those who attended the session. She touched on the most important aspect of any researchers’ journey that that was the final viva and open defence. Also, in that, the criticality, and unfairness, of having to summarize the work done in 3-4 years in about 30 minutes while engaging different types of listeners!! Through a very well organised talk Dr. Sangeetha gave a number of tips on presentation skills.

Dr. Shiva Chaudhary’s presentation titled *Indian Theatre: A Reflection of Our Cultural Heritage* gave an insight into Indian theatre and its origin. While throwing light on the classical theories of art and moving on to folk art, through her exposition, she discussed how art in general has the ability to transcend spectators to an impersonalised level and experience temporary forgetfulness of reality.

While dealing with a very scientific and technical subject like *GENE THERAPY: A Two-Edged Sword*, **Dr. Vani R.** gave an extremely methodical insight into a very complex scientific subject. She introduced the audience to the basics of Gene therapy while giving the definition, types, approaches, advantages and disadvantages, applications, the stories of success and challenges when Gene therapy was applied to solve medical problems.

While Dr. Bindu, Dr. Gopalakrishna, Dr. Samarendra, Dr. Rituparna and Dr. Sangeeta were alumni of the University, Dr. Madhuprasad, Dr. Priyanca, Dr. Shiva and Dr. Vani were Faculty members of the University. All the sessions were thoroughly enjoyed by the audience while at the same time they went back satisfied having learnt about a new subject.

General Plenary 1

‘Education at the Intersection of Research and Practice’

Speaker: Prof. Raj Singh, Vice Chancellor, JAIN (Deemed-to-be University)

Presently, there is a great deal of emphasis on creating instruction based on educational theories resulting from extensive research. Nearly every text holds forth on the necessity of tying pedagogy to a defensible, definitive theory. We must take the theoretical framework, make it a prescriptive and descriptive tool and see how they influence the design of instruction in the field of education. Moving from learning theory to instructional theory, or actual pedagogy is both an art and a science. Considered by many to be the modern methods of instructional design, there are four major propositions.

1. Learning goals can be categorized as to learning outcome or knowledge type
2. Acquisition of different outcome categories requires different internal processes
3. Learning outcomes can be represented in a predictable, prerequisite relationship
4. Acquisition of different outcome categories requires identifiably different instructional processes.



Research is a measure of quality of higher education and involves systematic and rigorous enquiry leading to creation of new knowledge, ideas, technologies, innovations and solutions to problems, which are then disseminated. It seems so easy to say that the focus of research in social work should be on building theory from practice. Practitioners complain that the idea of research intimidates them. Researchers complain that practice is not evidence-based. Students complain that textbook theory is too abstract, and that they learn most from field practice. Educators complain that students are more interested in being lectured to by current practitioners, rather than academics whose knowledge is seen to derive from books or research. We all have beliefs against each other, in a profession in which it seems as if separate worlds vie for privilege and recognition. Prof Singh in his talk critically looked at some of the reasons we have found it difficult to integrate practice, research and theory in social work in the hope that by confronting some of our dearly held assumptions, structures and behaviours, we might begin to see a new way ahead.

Current landscape of research programmes conducted in India is 2.5% of institutions. Research is not viewed as a primary and vital function functions of academics, its outcomes seldom measured. Also, the research is difficult to be monetized. Gross Domestic Spending on R&D is defined as the total expenditure (current and capital) on R&D carried out by all resident companies, research institutes, university and government laboratories, etc., in a country. It includes R&D funded from abroad, but excludes domestic funds for R&D performed outside the domestic economy. Researchers are professionals engaged in the conception or creation of new knowledge, products, processes, methods and systems, as well as in the management of the projects concerned. This indicator is measured in per 1000 people employed and in number of researchers; the data are available as a total and broken down by gender.

India offers many high-quality educational institutions for earning highly respected Ph.D degrees. It is truly a stimulating environment for learning and research. Candidates earning a PhD in India will benefit from learning alongside other motivated, competitive, and highly regarded international and local candidates as well as faculty. In addition, India's influence in the global market is growing as it becomes a financial and economic hub. Candidates wishing to pursue a Ph.D in India have many options to choose from in many fields of study, from biochemistry, to computer science, to anthropology. Educational research is being increasingly challenged for not contributing effectively enough to the improvement of policy and practice worldwide. Critics call for more relevant, cumulative, accessible and cost-effective studies. Prof. Singh examined the implications of this contemporary debate for small states, as they engage with increasingly powerful international development agenda's while dealing with their own distinctive educational needs and priorities. He highlighted how specific attention needs to be given to different conceptions and traditions of educational research; to the potential of participatory and partnership models; to the process of educational research and evaluation capacity building; to the socio-political implications of 'genuine' North--South partnerships; and to the lessons that can be learned by all engaged in educational research from the comparative and international experience.

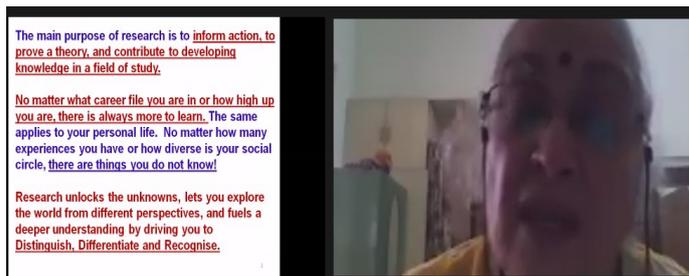
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General Plenary Session 2

‘Building a Research Culture in Higher Education’

Speaker: Dr. Shakuntala Katre, Former Dean of Sciences and Professor of Zoology, Bangalore University

The session was divided into two parts, the first being a brief 15 minute introduction by the chairperson Dr. R.S. Deshpande who gave a small insight into innovation and ended it by quoting Gandhi who said, “I don’t want my door to be closed and my windows to be stuffed, I want all civilisations to blow through my doors and windows at the same time. I don’t want my feet to blow and this is my Swadeshi”.



Then Dr. Shakuntala Katre began by giving insights into what research actually is with the help of the OECD definition of research. She said that research is a learned behaviour which also unlocks the unknown. The term research does not only denote restarting or repeating something but it is the intensity or depth of the process. Knowledge generated by research is the basis of sustainable development and therefore it is necessary for the Higher Educational Institutes to indulge in research. Research is beneficial as it kindles curiosity, expands the knowledge base, and builds credibility. Quality in research is what everyone

should keep in mind. For having a strong building, a firm foundation is very important and similarly in research knowledge, information and data is crucial. Research occurs in a cycle which begins with questioning, planning, gathering, sorting and sifting, synthesizing, evaluating and ends with reporting. Publication after research is very important. Researchers must be encouraged to promote their work with the help of their publications.

Today, many fake journals have come up but there are ways to overcome the same. The UGC has its journals, the UGC CARE journals through which publication can be done on an authentic platform. Succeeding this discussion, the speaker spoke about research culture, what it denotes and its importance in higher educational institutions. Strengthening research culture can be done by academic and applied research, inter professional collaboration, public and private partnership. According to the AISHE data there are large number of universities that take enrolment for Ph.D and a huge number of scholars enroll in Science and Engineering. This has led to a lot discussion on the contribution of these Ph.Ds to society or on a global recognition, the employment of these Ph.D scholars etc. Although there are many Ph.D scholars throughout the country, the annual research publication and the number of patents filed is very less as compared to other countries. It is very important that students need to be made aware about research so that they can indulge in it actively. The government has taken various initiatives to boost up research and research publications over the past few years by giving fellowships and funding. The government has also come with their slogan ‘Innovate, Patent, Produce and Prosper’ to boost research in India. The NAAC has also included research involvement into their criteria for accreditation. Poor research is also due to various reasons like poor infrastructure, lack of experienced and quality guidance, lack of will and motivation, fake and predatory journal publications etc. In the current scenario building a strong research culture in the higher educational institutes is very important. Undergraduate students need to be encouraged by training them in research methodology. Different universities have come up with different initiatives like forming small committees within themselves to indulge undergraduate students in research. Dr. Katre also gave insights into various topics like knowledge supply chain, the knowledge process today and of the future and the partnership continuum. Lastly she stressed that maintaining the code of Ethics is very important in research to maintain a healthy research culture.

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General Plenary Session 3

‘Research and National Education Policy (NEP) 2020’

Speaker: Prof. M. K. Sridhar, Member, University Grants Commission and Member, National Education Policy Draft Committee

Dr. Sandeep Shastri, Pro VC, JAIN started the session with the very important questions posed to the audience to be discussed like- do we need weekly departmental meetings for research scholars and guides? What do you understand by full-time and part-time research scholars? and Can we have a co-guide from other universities? There were a few who said that weekly meetings will help whereas, other said it becomes a compulsion to scholars and instead monthly meetings are better. Some said that we can have a common portal to share resources and expertise available in each discipline to promote interdisciplinary research and deliver collaborative output. More involvement with the UG/PG students would be a good move as it would give them an insight into research world and would help them choose core topics in future.



Prof. M.K. Sridhar started the session by explaining types of universities stating that there can be two types of universities: One is Research Intensive Universities which focus on research majorly and second is Teaching Intensive Universities which focus more on teaching skills. Next question arises how much weightage should be given to each one? The answer is that these two types of Universities are the sides of a coin and so equal focus should be put on both the sides. Besides there are organizations which focus on a particular field like separate centres for research in the field of biotechnology, food dietary, agriculture, microbiology, medical e.g., ICMR, IARI. These organizations are restricted to a particular field which implies that there is no space for multidisciplinary research there, which is the most required field in today’s world. All these issues can be rectified or resolved by taking National Research Foundation or National Education Policy (NEP) into consideration which is trying to bring all the field under one roof especially in the field of higher education.

According to the NEP a four-year Undergraduate Programme will focus on introducing research factor in the last year of program and those who undergo rigorous research during under-graduation they can directly get in to Ph.D. Around 74 Universities have undergone NAAC (National Assessment and Accreditation Council) Accreditation. Among which only 30 Universities achieved GPA more than three, 19 Universities achieved GPA in between 2-3 whereas, rest achieved less than 2. The crisis today lies in the fact that today while research is increasing quantitatively correspondingly the quality of research is decreasing. Prof Sridhar highlighted that educational institutions always have an option to collaborate with external partners like Industries, organizations etc. He also clarified that according to NEP selection process will be purely based not on merit basis as a whole, but in a particular field you have applied for. He added that under the NEP regulatory mechanisms will take care of quality and autonomy and that research accreditation will decide whether a University is research intensive or teaching intensive. Good quality research can help in movement from teaching intensive to research intensive.

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**The 10th Annual Convocation of the University shall be held on
23rd January 2021.
Due to the prevailing COVID-19 pandemic, this year's convocation will be held
in virtual mode.
Detailed notification and instructions will follow.**

Faculty Plenary Session 1

‘Current Research Trends and Opportunities to Excel’

Speaker: Dr. V. Venkateshwara Rao, Senior Scientist, Tata Consultancy Services (TCS).

Be it the operational experience on field or studies reviewed by peers, market research has always had a special role to play in the marketing function. While trends like neuro-imaging and eye-tracking have shaped the market research domain in the past, many new, upcoming trends promise to transform market research altogether bringing in opportunities as well as complications with them. Staying updated with the latest updates and trends helps businesses to stay ahead of competitors and take the right business decisions at the right time.

These are changing times in education systems around the world. With the start of the new millennium, many



societies are engaging in serious and promising educational reforms. One of the key elements in most of these reforms is the professional development of teachers; societies are finally acknowledging that teachers are not only one of the ‘variables’ that need to be changed in order to improve their education systems, but they are also the most significant change agents in these reforms. This double role of teachers in educational reforms – being both subjects and objects of change – makes the field of teacher professional development a growing and challenging area, and one that has received major attention during the past few years.

Professional learning can ask a lot of teachers in the interest of their students. Even those who are confident in their professional role can feel profoundly uncomfortable when what they hold to be true is challenged and they have to rethink their beliefs and practices. This is particularly so because teachers are adults who have well-defined and defended schema about the way the world works. There are vivid examples of what teachers, school leaders, and policy makers can do, individually and collectively, to create the conditions for teachers to engage in this kind of learning. People come to learning with preconceptions about how the world works. If their initial understanding is not engaged, they may fail to grasp the new concepts and information that are taught or may learn them superficially and revert to their preconceptions in real situations.

To develop competence in an area of inquiry, people must have a deep foundation of factual knowledge, understand facts and ideas in the context of a conceptual framework, organise knowledge in ways that facilitate retrieval and application. A metacognitive approach to instruction can help people to take control of their own learning by defining goals and then monitoring their progress toward achieving them.

Attention needs to be paid to the diversity of students and communities. The teachers’ social constructions of students provides important insights into the additional dimensions that a diversity agenda requires of teachers.

Professional learning/ development is both costly and important yet effective professional learning is a powerful lever for getting the kinds of change that can enhance student learning. But this may not happen if the process is purely voluntary, left to teachers to take up or not take up. The kind of professional learning that makes a difference for students is hard work and demands strong policy support and professional determination.

The debate thus should be about values, politics, and interests—not tacit knowledge, opinions, and histories masquerading as fact. The world is teeming with activities variously referred to as knowledge utilisation, knowledge dissemination, knowledge brokering, knowledge transfer, knowledge exchange, knowledge mobilisation, and knowledge translation. Whatever the term used, the idea is to gather together what the research tells us about a topic of interest and then to synthesise it into practical, usable knowledge. The Iterative Best Evidence Synthesis Programme sets a high standard, and has generously shared its model for others to use and to enhance.

Faculty Plenary Session 2

‘Doing High-Quality Research’

**Speaker: Dr. Vishal Gupta, Associate Professor, Organisational Behaviour,
Indian Institute of Management, Ahmedabad**

Dr. Vishal Gupta gave his insights on the topic ‘*Doing High-Quality Research*’ by sharing his journey and experience of doing research. The key points discussed in the session were as follows -

- Course work is very critical as it helps to build the ideas for research.
- Projects during course work creates opportunity to test ideas.
- It gives clear idea on thesis, helps to shorten your idea and gives a clear picture on what exactly to be done.
- Identify two good conferences (not more than two) which are at National or International level and try to submit the paper for that. First advantage of attending conference and presenting the work will make individual for accomplishment of submitting the papers well within the time of submission due date otherwise as a human being there will be postponement of writing papers. The second advantage of attending conferences is that it will help in refining ideas of research and also give you the feedback on your work progress. The third advantage of attending conferences is that it helps to develop networking and you would get to see and learn from others’ work.
- Research should be relevant to practitioners. We should try to understand what are the challenges or problems of the practitioners by reading magazines, newspapers, attending conference, forum like FICCI where industry practitioners will provide inputs on challenges being faced by them. This helps us get greater clarity.
- Stay motivated and create your own motivation by working on problems that you are really interested on.
- Work hard, spend at least two hours every day on research.



Dr. Dinesh Nilkant moderated the questions and answer session post the talk. Dr. Gupta while answering to queries further emphasized on what kind of research qualify for high quality research making two important points:

- Open the door – initiate new stream of work, find out new perspective, find out something which nobody has done so far.
- Close the door- you have given an answer to the problem.

There was one more interesting question asked by Prof. Ujjal in the end: What is that one mistake that the researcher keep on repeating? To which Dr. Gupta replied saying “Nobody is perfect, everybody struggles, researchers always commit mistake and we should learn from our mistakes, we should never repeat the same mistake again, we all need to improve writing skills which is very important for a researcher”.

Shalya Accamma
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**“The small wisdom is like water in a glass:
clear, transparent, pure.**

**The great wisdom is like the water in the sea:
dark, mysterious, impenetrable.”**

- Rabindranath Tagore

Faculty Plenary Session 3

‘Research in the Social Sciences and Humanities: Search for New Paradigms’ Speaker: Prof. Rajendra Chenni, Eminent Writer and Professor of English, Kuvempu University

Prof. Rajendra Chenni started his session saying that firstly he would talk about the kinds of crises and why he is addressing it, and secondly how social theories developed in India. Then he pinpointed that we should look for possibilities which can bring about new paradigms of social sciences. He said that we cannot make a new paradigm happen. One cannot plan for new paradigms. Paradigms happen because of a large variety of factors. Therefore one should not plan for a new paradigm but prepare for such things by being more introspective about what we have been doing in our disciplines and also look at the obstacles that prevent that kind of growth in development expected in disciplines.



After that Prof. Chenni mentioned the arguments of great sociologists, like the formation of the disciplines of anthropology and sociology in India in the early decades of the twentieth century. He also highlighted the binaries created by orientalist paradigm, the static societies and the dynamic societies. There are certain issues that got

attention like the so-called conflict between tradition and modernity. The problem is that modernity was seen as something very homogeneous. European modernity was seen as universal and this was the framework under which all writers, poets, critics, sociologists, historians all return to when writing their own disciplines. According to him the problem was not only with modernity but with some Universalist frameworks.

He then shifted to humanities again to discuss what is happening. He talked about the Indians’ problems with literary history because of their refusal to think about what ‘the literary’ is. He said that literary history is something to do with politics, culture, and the sharing of power. Constructing ‘the literary’ would also mean excluding some genres. We should look at culture as power and power as culture. Finally Prof. Chenni mentioned the study of ideologies because most of us do not have any idea about how ideologies developed.

The Chair for the Session Dr. Priyanca Mathur spoke about the concept of governmentality, the idea of a nation state and power, the center of ideological debates, how the state and citizens are reworking their narratives with one another, and what are the paradigms that we center ourselves within. She added that this tells us about our priorities and ideologies.

Then a research scholar asked two questions: Are we losing this universal diversity in the field of humanities? How can we avoid getting caged in some places. Prof. Chenni answered saying that the entire enterprise called ‘post-colonial theory’ tied us to the fact that much of the knowledge that we take for granted in the ground of that knowledge and the rules of its validity are all part of this history of orientalism which is part of colonialism. Decolonialism started to happen not only in India but in some Latin American Countries. One of the pitfalls of this process is that in order to get out of uni-centricism is that one cannot find pure origins of history but mixed ones. Europe has been with the rest of the world and the rest of the world has been with Europe. There has been contestation, there has been imitation and there has been conflict. So one has to problematize their on approach trying to avoid these extremes. Then another scholar asked for a clarification about the subaltern and new subaltern studies and Prof. Chenni explained that subaltern specialists wanted to write history from the below. Their arguments were about histories written by colonial masters. The same thing happens when you come to the nationalist studies. The subaltern are the ones who are not represented in official history.

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Faculty Plenary Session 4

‘Doing High-Quality Research’

Speaker: Dr. Annapoorni Rangarajan, Associate Faculty, Centre for Biosystems Science and Engineering, Indian Institute of Science



The session was chaired by Dr. Sridhara Murthy, Director - Academics and Planning, JAIN. The speaker for the day was Dr. Annapoorni Rangarajan from Indian Institute of Science and the theme was ‘*Cancer and Stem Cells: Lessons from Each Other*’. She began by differentiating between normal cell and cancerous cell. The process of conversion of normal cell to cancerous cell is known as Carcinogenesis. Carcinogenesis, also called oncogenesis or tumorigenesis, is the formation of a cancer, whereby normal cells are transformed into cancer cells. The process is characterized by changes at the cellular, genetic, and epigenetic levels and abnormal cell division. Normal cell after ageing undergoes senescence process and finally die. Sometimes these normal cells undergoes immortalization process and gets transformed into a cancerous cell.

To the normal cell there will be addition of genetic and epigenetic factors. This will accumulate changes in the normal cell. These are the morphological changes in the normal cells which leads to cancerous cell. A normal cell gets transformed into cancerous or tumor cell leading to Metastasis- is the spread of cancer to other locations in the body. The dispersed tumors are called metastatic tumors, while the original is called the primary tumor. Almost all cancers can metastasize. Most cancer deaths are due to cancer that has metastasized.

Epithelial cells are attached to integrin proteins which are in turn attached to surface cell. This leads to suspension culture which undergoes cell death- Anoikis. Anoikis is a programmed cell death induced upon cell detachment from extracellular matrix, behaving as a critical mechanism in preventing adherent-independent cell growth and attachment to an inappropriate matrix, thus avoiding colonizing of distant organs. Or it may get transformed and leads to cancerous cells which are anchorage independent. Normal cells are also anchorage independent which undergoes multiplication extensively. Normal stem cells differentiate to stem cell, which give rise to daughter cells. Similarly even cancer stem cells also undergoes differentiation which can give rise to entire cancerous cells. The normal cells undergoes transformation in breast to form Mammospheres leading to Metastasis which gives resistance to drugs. These breast cells were treated with collagenase and hyaluronidase enzymes followed by treatment with trypsin to get individual cell lines. These cells are detached from each other and cultured in a culture plate. Initially adherent cells later also grows in suspension as mammosphere. Mammosphere formation from cell lines and primary breast tumors. MCF-7 cells were capable of forming mammospheres of 50 μm in diameter under mammospheres culture condition for 2 weeks. After 3 weeks of culture, more mammospheres appeared and the diameter increased to around 100 μm . The growth of cells in 3D imposes different kinds of stresses that is anchorage independence, Hypoxia and Nutrient deprivation. This activates AMP activated protein kinase AMPK. AMPK leads to Apoptosis. AMPK phosphorylation leads to phosphorylation of PEA protein also leading to Apoptosis. In spite of initial responses to chemotherapy, drug resistance tends to develop rapidly and the prognosis of metastatic TNBC (Triple-negative breast cancer) is poor. Hence, there is an urgent need for novel-targeted treatment methods or development of safe and effective alternatives with recognized mechanism(s) of action. AMP-activated protein kinase (AMPK), an energy sensor, can regulate protein and lipid metabolism responding to alterations in energy supply. In the past 10 years, interest in AMPK has increased widely since it appeared as an attractive targeting molecule for cancer therapy. There has been a deep understanding of the possible role of abnormal AMPK signaling pathways in the regulation of growth and survival and the development of drug resistance in TNBC. The increasing popularity of using AMPK regulators for TNBC-targeted therapy is supported by a considerable development in ascertaining the molecular pathways implicated.

Dr Annapoorni acknowledged her students and their contributions in the projects. She also discussed about the project they are presently working on. The session was later open for questionnaires. The session concluded by formal vote of thanks by the Chairperson.

Concurrent Sessions and Best Presentation Awards

There were 21 Concurrent Sessions on Day 2 of the Research Retreat which were held across different disciplines. Research Scholars presented their progress of the past one year and received valuable feedbacks from the expert panellists and peers interested in the subject. The scholars were marked for their progress and presentation skills. The following Scholars received the Best Presentation award for each of the concurrent sessions.

- ◆ Aerospace Engineering and Civil Engineering– 1- *Johney Thomas*
- ◆ Aerospace Engineering and Civil Engineering– 2- *Srinivasan Ramaprasad*
- ◆ Computer Science Engineering- 1- *Rajashree S.*
- ◆ Computer Science Engineering- 2- *Madhumala RB*
- ◆ Computer Science and Information Technology- *Anand Javali*
- ◆ Electrical and Electronics Engineering- 1- *Shyamala C.*
- ◆ Electrical and Electronics Engineering- 2- *Manaswini R.*
- ◆ Management and Commerce – 1- *Pawan Kumar Sharma*
- ◆ Management and Commerce– 2- *Sudharson TSS*
- ◆ Management and Commerce– 3- *Oluwatobi Soyombo and Shruthi K. Bekal*
- ◆ Mathematics and Physics- *Rutuparna Samal*
- ◆ Mechanical Engineering, Electrical Engineering and Fire Engineering- *Shivakumar A.*
- ◆ Biochemistry- *P. Saravan Kumar*
- ◆ Biotechnology- 1- *Michael VL Chhandama and Ashrini BS*
- ◆ Biotechnology- 2- *Gawas Sandesh Mahadev*
- ◆ Chemistry- 1- *Manohara HM*
- ◆ Chemistry- 2- *M. Sai Rashmi*
- ◆ Nanotechnology- *Shinde Pratik Vitthal*
- ◆ Microbiology, Forensic Science and Botany - *Chandandeep Kaur*
- ◆ Psychology- *Samhita K.*
- ◆ English– *Manjula Veerappa and Suhasini BS*
- ◆ Hindi– *Swapna Chaturvedi*
- ◆ Kannada– *Satish NS*
- ◆ Social Sciences– *Anjali Sankar and Mithilesh Kumar Singh*
- ◆ Cultural Studies, Dance and Music- *Ananya Bhagath*



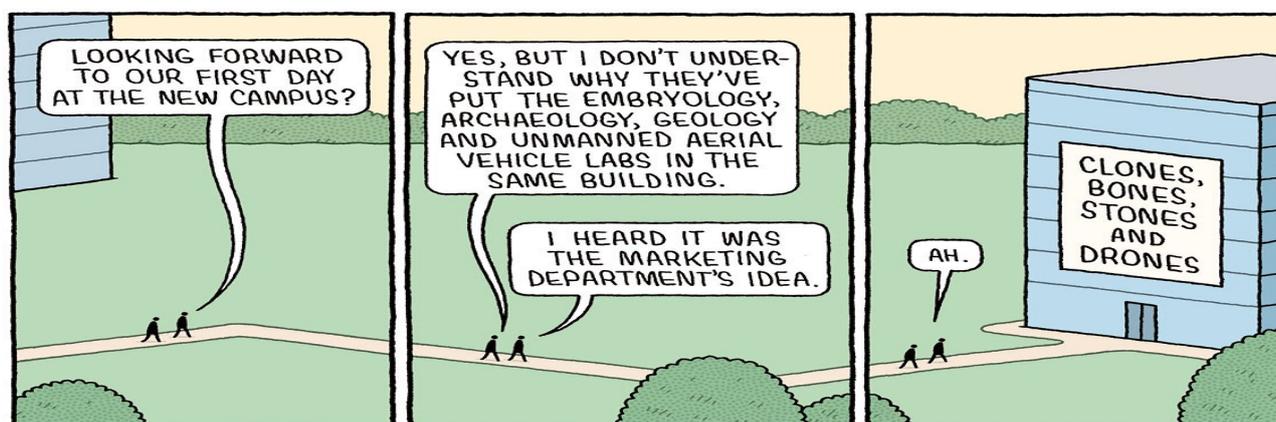
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Ph.D Thesis Awarded- December 2020

Name	Subject	Guide	Title of the Thesis
Pralhad Rao	Computer Science	Guide: Dr. Rohit Kapoor Co-Guide: Dr. Chandrashekar Shastry	‘Improving Compression for IC Testing by Analyzing Intermediate Patterns’
Srinivas D.	Mechanical Engineering	Dr. S. Ramamurthy	‘Experimental and CFD Analysis of Heat Sink with AL-CU Alloys in CPU Cooling’
Manjunath BE	Electronics Engineering	Dr. PV Rao	‘A Novel Approach for Low Power Consumption Data Security Technique in WSN’
Asha GR	Computer Science and Engineering	Dr. Gowrishankar	‘Machine Learning Approach for Enhancing the Lifetime of the Wireless Sensor Network’
Bhavana GP	Biotechnology	Guide: Dr.Kumudini Belur Satyan Co-Guide: Dr. C. Aswath	‘Somatic Embryogenesis as an Efficient Method for <i>In Vitro</i> Production of Anthurium’
Preetha R. Nair	Electronics Engineering	Dr. Suresh HN	‘Development of Novel Method for Detection of Gastric Cancer by Hyperspectral Image Technique’
A Sha Arun	Biotechnology	Dr. Veerasamy Sejian	‘Metagenomic Profiling of Fecal Microbial Community in Carnivorous Leopards (<i>Panthera pardus</i>) and Omnivorous Sloth Bears (<i>Melursus Ursinus</i>)’
Sathish AP	Kannada	Dr. Manjunath	‘Kannada Pravasa Sahitya: Andaman Samskritiya Binna Nelegalu- Ondu Adyayana’
Sundaresh BS	Management	Dr. Mahabaleshwara Bhatta	‘Information Technology Outsourcing - A Study of Employee Perspectives on Impact Sourcing’
Noor Nigar	English	Dr. S. Venkateswaran	‘A Study of the Effectiveness of Task-Based Language Teaching (TBLT) to Develop Oral and Aural Skills of the Students at the Tertiary Level: An Experimental Study’
Sapna M. Kadakadiyavar	Electrical Engineering	Dr. Nagaraj Ramrao	‘Automatic Recognition and Analysis of Statistical Process Control Patterns Using Neural Networks’

Ph.D Thesis Awarded- December 2020

Name	Subject	Guide	Title of the Thesis
J Cruz Antony (NBAIL)	Computer Science	Dr. M. Pratheepa	‘Population Dynamics and Forewarning the Occurrence of Soybean Grey Semi-Looper, <i>Gesonia Gemma</i> Using Machine Learning Techniques’
Venkatesh Chari	Management	Dr. Vivekanand	‘Modelling the Effect of Multiple Stakeholder Perceptions on Airport Performance’
Manjunath CR	Computer Science and Engineering	Dr. GS Nagaraja	‘Efficient Multicast Routing Approaches for Wireless Sensor Networks’
Deepak V. Biradar	Computer Science and Engineering	Dr. KR Nataraj	‘A Network Lifetime Improvement Mechanism Using Node Relocation and Recovery Process for Wireless Sensor Network’
Sunisha C.	Biotechnology	Dr. TR Usharani	‘Transformation and Evaluation of Anti-Apoptosis Gene in Banana cv. Rasthali for Fusarium Wilt Resistance’
Sadiq Pasha Shaik	Biotechnology	Dr. Pious Thomas	‘Investigations on Seed Transmission of Endophytic Bacteria in Tomato (<i>Solanum Lycopersicum</i> L.)’
Anjana Radhakrishnan	Commerce	Dr. M. Prakash	‘A Study on Self Help Groups (SHGs) as a Tool for Empowering Rural Women—with special reference to Chitradurga District’



TOM GAULD for NEW SCIENTIST

This comic was sent to us by Sivaram S., Ph.D Scholar in Cultural Studies.

Achievements

- **Michael VL Chhandama**, Ph.D Scholar in Biotechnology, won the First Prize at The NEST Bio-Innovation Challenge 2020 under the ‘Academic Category’ in ‘Biofuels and Biofertilizers’ domain organized by the Mizoram University (MZU), Mizoram.
- **Nayana Thammaiah**, Ph.D Research Scholar in Management, presented a paper and won the Best Doctoral Scholar Paper award for her paper ‘*Does Mindfulness Affect Organisational Role Stress Level of Assembly Line Workers*’ at the 6th International Management Conference on Advances in Management through Research, innovation and Technology organised by Fortune Institute of International Business (FIIB) New Delhi in collaboration with Sri Lanka Institute of Management, Sri Lanka.
- **Mithilesh Kumar Singh**, Ph.D Scholar in Mass Communication, his manuscript titled ‘*Multicultural Workplace: Analysis of Intercultural Communication Challenges*’ got accepted in Bi-Annual unpaid UGC approved journal ‘Humanities and Social Science Studies (Journal)’ to be published in January 2021.

Alumni Achievement

- **Ashwini Appaji**, Alumnus in Biotechnology, won the ‘IEEE IC - Outstanding Young Professional Volunteer Award 2020’ She, as Chair of Young Professionals Bangalore Section has also received ‘R10 Young Professionals Outstanding Section Affinity Group Award 2020’. She has also conducted an International Summit- ‘Young Professionals Global Summit 2020’ virtually.

Responses to Research Retreat

- **Pawan Kumar Sharma**- Let me start by saying that what a great retreat it was... from inaugural to cultural event to the presentations. I learned a lot and I think my research process will surely get better with so many insights.
- **Radhika Venkat**- Many thanks to all of you for organizing an immensely enlightening, engaging and entertaining Research Retreat event, albeit a virtual one at JAIN University. The fact that it was a virtual one, made it easy to attend, switch between many sessions quickly and be highly productive. It was lovely to connect with our new Vice-Chancellor Dr. Raj Singh and hear his interesting thoughts on current practices in Research and Education. Thoroughly enjoyed the discussions that Dr. Shastri facilitated as well. He is definitely going to be missed. Thanks to all the organizers (both front stage and back stage) for their diligent efforts in making the Research Retreat an immensely successful 2-day event. All the sessions organized on Day 1, were discussion - centric, highly interactive, resourceful, and of a very high standard. Thank you! Day 2, we were fortunate to have a brilliant panel who shared wide-ranging insights on scholars' research progress. The feedback shared by Dr. Sudarshan Seshanna was profound, insightful and of a very high calibre. Thank you Sir. The feedback from Dr. Uma Warriar and Dr. Jothi Rao was also very pertinent and useful for advancing our research work. Thank you Professors. The final session from Dr. Vikas Gupta for Commerce and Management was also very interesting and useful for research scholars. Despite dialing from Dubai, I felt very much at home and did not find any difficulty in joining any of the sessions. Hail the new virtual paradigm! Thanks again to our deft organizers and our vibrant, enthusiastic Mythili Ma'am for such a seamless and well-conducted, research retreat.

Team Thinklet

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