

Publications to Purpose: Are We Researching the Right Problems? *(Rethinking Research Priorities in India's Higher Education System)*

Reflections

For decades, research in our academic institutions has been judged through a familiar vocabulary: **publications, citations, impact factors, h-index, patents and rankings**. There is nothing inherently wrong with these measures. We need them. They provide discipline, comparability and a way of recognising scholarly contribution. The problem begins when **the measure becomes the mission**. A young researcher may begin with a genuine curiosity:

“What problem can I solve?” Somewhere along the way, the question quietly (knowingly or unknowingly) becomes:

“What can I publish?” This is not necessarily a failure of the researcher. It is often a perfectly rational response to the ecosystem we have created.

This reflection comes from last four decades of working across meteorology, defence, science administration, research funding and higher education, and from sustained engagement with researchers and faculty. Over these years, I have observed a recurring shift in the way research questions are framed: and, increasingly, though seldom, in what we expect research to achieve.

When the System Rewards the Visible

I was reminded of this recently while interacting with faculty and researchers during a workshop on research grants and proposal writing at Karunya Institute of Technology and Sciences, Coimbatore.

The most revealing part was not the science. It was the patterns that were explained to the audience. Some proposals opened with pages of technical jargon before clearly establishing the problem. Impact sections read more like wish lists than measurable outcomes. Budget justification appeared almost as an administrative afterthought. The “why now?” was missing.

Occasionally, the investigator's strongest credentials were buried several pages into the proposal. None of these researchers lacked capability.

What was often missing was translation, that is ability to translate knowledge into a compelling problem, a credible proposition and a fundable pathway. India's research ecosystem needs a course correction as follows:

We don't necessarily need researchers to write more papers.

We need them to ask better questions.

What are Better Questions?

I have seen this repeatedly while examining research proposals. A technically competent proposal can explain the methodology beautifully and still leave a basic question unanswered: ***What problem are we actually trying to solve?***

Sometimes the proposal has a sophisticated title, an impressive literature review and a perfectly constructed methodology, but the problem itself is almost lost in the process. It is as though we have become better at explaining ***how we will do the research than why it deserves to be done.***

A better question can change everything. Instead of asking, “*Can we develop a more efficient solar cell?*”, for instance, one might ask, “*What prevents affordable solar energy from reaching the communities that need it most?*”

The latter could lead not only to materials research, but also to work on storage, grid integration, finance, policy & last-mile deployment.

The first question may produce another paper. The second may produce a solution.

This is not an argument against publications. Publications remain essential to the advancement and dissemination of knowledge. The concern arises when publication becomes the ***destination rather than a milestone in the journey from knowledge to impact.***

Perhaps the more useful question for our research ecosystem is therefore not “*How many papers did this research produce?*” but

“What problem did this research make us better equipped to solve?”

Put the Problem Before the Publication

India has no shortage of problems worthy of serious research, like climate resilience, water security, clean energy, agricultural productivity, healthcare, urbanisation, disaster resilience, semiconductor capability, defence technologies and the future of work, to name only a few.

The question therefore is not: “*Can India produce world-class research?*” We clearly can. The harder question is: ***“Are enough of our research efforts aligned with problems that matter?”***

A good research proposal should make a reviewer understand the problem before making them admire the methodology. Technical sophistication matters.

But sophistication without relevance can become ***Academic Gymnastics*** - impressive in execution, yet disconnected from the world outside the laboratory.

This is particularly important for publicly funded research. Impact need not always mean immediate commercialisation. Fundamental research has its own value and often operates on much longer horizons. But we should still be able to articulate the ***purpose.***

1. What knowledge gap are we addressing?
2. Why does it matter?
3. To whom?
4. Why now?
5. And what could change if we succeed?

These questions should not be an afterthought. They should be the beginning of the proposal.

Mentorship Must Change Too

For too long, academic mentoring has sometimes been reduced to publication guidance — which journal, how many papers, where to submit and how to respond to reviewers.

These are useful skills. But a mentor's larger responsibility should be to help a young researcher develop *research judgement*.

1. Which problem deserves ten years of one's intellectual life?
- II. When should one persist?
- III. When should one abandon an idea?
- IV. When is failure useful?
- V. How does one move from a laboratory result to a prototype, a policy input, a process improvement or eventually a product?

These are difficult questions. They cannot be learnt from a publication manual.

Make Room for Intelligent Failure

Innovation and certainty rarely coexist comfortably.

If every failed experiment is treated as failure of the researcher, researchers will naturally choose safer questions. If every evaluation rewards only outputs that are already predictable, we should not be surprised when genuinely disruptive research becomes scarce.

Risk-taking without accountability is irresponsible.

But accountability without room for risk is equally dangerous.

A researcher should be answerable for the rigour, integrity and stewardship of public resources, but a failed hypothesis should not automatically be treated as a failed researcher. If we punish every intelligent failure, we will eventually reward only safe questions. Isn't it so?

The institutional challenge is to find that balance.

Academia and Industry – Are They Parallel Worlds?

Academia and industry still operate too often as parallel worlds. The university produces knowledge. Industry identifies a need. *Somewhere in between, the translation gets lost.*

We need more co-created research agendas, shared facilities, problem statements developed jointly with industry and government, translational funding and mechanisms that allow promising research to travel beyond the journal.

A publication should sometimes be the **beginning of a journey, not its destination.**

What Should We Celebrate?

Perhaps alongside asking: ***How many papers did you publish? We should increasingly ask:***

- i. What problem did you solve?
- ii. Did your research influence a policy decision?
- iii. Did it improve a process?
- iv. Did someone use the technology?
- v. Did it create a new capability?
- vi. Did it change even one life?

Not every piece of research will do all of these – Not even indirectly. Nor should it. But an ecosystem that never asks these questions risks producing an abundance of outputs without a corresponding abundance of outcomes.

The Last Mile is the Mind-set

A great deal is already being thought through and planned at the Anusandhan National Research Foundation, DST and the Office of the Principal Scientific Adviser, with research quality, translation and impact receiving increasing attention at the highest levels of Government of India.

The policy intent is increasingly visible.

The harder part is what happens next.

The real test lies with the *Principal Investigator, the research group and the institution*. Can policy intent travel from the file to the laboratory, from the laboratory to the field, and from the field to society?

That requires more than new schemes or revised evaluation metrics. It requires changing *what we reward, what we mentor, what we fund, and ultimately, how we think about success.*

The question we should therefore put before every researcher, institution and policymaker is:

Are we advancing knowledge merely to add to what we know, or to expand what we can do and improve how we live?

The next transformation in India's research ecosystem may not require another policy. It may require a change of mind-set.