

and to promote academic growth by offering state-of-the-art undergraduate, postgraduate and doctoral programmes. (ii) To identify, based on an informed perception of Indian, regional and global needs, areas of specialization upon which the institute can concentrate. (iii) To undertake collaborative projects which offer opportunities for long-term interaction with academia and industry. (iv) To develop human potential to its fullest extent so that intellectually capable and imaginatively gifted leaders can emerge in a range of professions.

For higher educational institutes, working towards achieving these goals is a sure way of reaching their pinnacle. But if another institute or university is preparing its vision statement, can it use exactly the above wording in the document without acknowledging the source and still not be charged with plagiarism?

On the website of the National Institute of Technology, Patna², you will find that its vision and mission statements are exactly the same as those of IIT Delhi, without any reference to the source. This raises some questions. Can we consider such copying of vision and mission statements as simply sharing of best practices? After all, if another university finds that the vision statement of IIT Delhi is suitable for it, why not use the statement as it is? How much different can you write it anyway? Can we be less

lenient about it because such things are not done for any personal gratification? Since there are only limited English words available to rewrite the vision statement of IIT Delhi, is it alright for some other institute to copy it and claim it as theirs? Since the ideas expressed in the vision statement cannot be too different for each university, should we necessarily rewrite it differently just to avoid the charge of plagiarism?

Before we answer the above questions, let me bring to your notice an interesting case. The Southern Illinois University wanted to prepare a plagiarism policy after facing a plethora of incidents involving even its own university President for an alleged plagiarism in his Master's and Ph D theses. When the draft on plagiarism policy of the Southern Illinois University was ready, it was reported in the media^{3,4} that some parts of it have been lifted exactly word for word from a plagiarism policy document prepared by the Indiana University. How ironic! A plagiarism policy parts of which are plagiarised contents! The Southern Illinois University had to make suitable corrections by citing appropriate references including that of Indiana University⁵ in its plagiarism policy before adopting it.

As a perfect example to emulate, the mission statement of IIT Madras⁶ makes it clear that the broad outline of the statement is based on certain sources.

For example, it states that 'The Goals and Objectives were derived from the Sarkar Committee Report and embodied in the IIT Act. In addition to the Sarkar Committee report, the IIT act and the Statutes of the IITs indicate the lines along which IITs should develop' and goes on to explain the mission statement. Is not this approach much safer than simply copying someone else's vision and mission statements or policy statements? Is not some kind of attribution necessary when we borrow word for word the text or ideas as important as the vision statement or a policy statement from some other source? I think we need to be more circumspect about these sensitive issues.

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2. http://www.nitp.ac.in/vision_mission.htm
3. <http://chronicle.com/article/2-Universities-Plagiarism/1486>
4. http://www.usatoday.com/news/education/2009-01-29-plagiarism_N.htm
5. <http://www.siue.edu/policies/intro.shtml>
6. <http://www.iitm.ac.in/mission>

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Science teaching: from boring lecture to a performing art

I enjoyed reading the editorial by Balaram addressing an important topic of teaching that eloquently concludes by stating 'For young researchers, teaching must be a joy, not a chore to be avoided'¹. I would like to add that teaching must transform both teachers and students and such transformation can only come if teaching is done as a performing art². Teaching indeed is a theatrical art because teachers have got to interact with students and not introspect. Teaching not only requires subject knowledge, but also the ability to understand students' environment, including learning styles so that teachers can adapt to flexible modes of effective delivery.

Recently, I had a chance to observe teaching in India while reviewing an environmental science course (M Sc degree) in a university, where young sci-

entists preferred to use power-point presentations. It appears that most higher education teachers maximize the use of technology via power-point slides, videos, animations and virtual-reality tools that may enhance teaching, while triggering at times the audience to dose off naturally in dark classrooms. But the question is – do teachers rely more on technology and miss out vital classroom interactions? The power-point slides of science lectures can be easily downloaded from the net and it may ease teaching preparation. Nonetheless the technology alone will never leave long-lasting memory in the minds of students. Those who want to become teachers should recollect the names or faces of their own teachers back from their college days who had left an impressive memory in their minds, and all I could

remember now is two of my college teachers who had taught Shakespeare's drama in the early 1970s. Being great actors, they had left an ever-lasting memory in my mind, while many good science teachers faded away like the morning mist in distant memory.

Scientists have to integrate their dynamic public-speaking skills while delivering lectures. When they lack enthusiasm to perform in classrooms as actors while engaging the students, even the best scientists can become the worst teachers. Most institutes of higher learning now prefer to hire professors based on their scientific publications in high-impact journals and often ask potential candidates to give seminar presentations. Instead, if they give equal preference to teaching and if they assess candidates based on their acting and live performance

skills, it would certainly enhance science teaching while eradicating classroom boredom. All science teachers should be happy to take professional courses on interactive teaching, public speaking and performing acts in order to enrich their classroom teaching³. It is equally essential for the leaders of educational institutions to conduct systematic student interviews to review the performance of teachers on a yearly basis to upgrade science teaching.

India is known for great teachers and the country continues the tradition of respecting teachers. In fact, it is the teachers who objectively affect the young minds of students who will determine the future of science and technology. I hope India's next generation of teachers will incorporate science and performing art to make the teaching profession unique. I conclude by quoting what Gail Godwin once said, 'Good teaching is one-fourth preparation and three-fourth pure theatre'.

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3. Sarason, S. B., *Teaching as Performing Art*, Teachers College Press, New York, 1999.

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A unique way of using washcloth dyed with bixin by the Meiteis of Manipur

Bixa orellana Linn. (family Bixaceae) native to tropical America is a profusely fruiting shrub or small tree and grows 3–10 m in height bearing pink or white flowers. It has prickly, reddish, heart-shaped pods with many small seeds at the ends of the branches. The seeds are covered with reddish aril, which is the source of an orange-yellow dye called bixin. The dye is widely used in the food industry to colour dairy products, sugar confectionary, soft drinks, fish, meat, etc.^{1,2}, in textile industry for dyeing clothes and yard threads^{1,3} and sometimes in paint, varnish, lacquer industry⁴ and most recently in cosmetic and soap industry¹.

Besides being used as a colouring agent, the extract of seeds (dye and oil) is used for healing minor wounds and burns. It is also used to prevent scarring, blisters and against certain skin diseases¹ and to protect from sunburn⁵. The extract of the seeds shows antimicrobial⁶, antifungal⁷ and antibacterial activities⁸.

The Meiteis, the valley inhabitants of Manipur, have rich ethnobotanical knowledge⁹. They have been using vari-

ous dyes obtained from plants for dyeing cloths or yarn threads from time immemorial³. *B. orellana* is one such plant which yields a dye called bixin (locally the plant and the dye obtained is called Urierom) and the plants are usually cultivated in homestead garden. Bixin is also used extensively for dyeing locally made cotton washcloth (locally called Urierom lakpa/sangba phadi), which used by every family during bathing. It is believed that it keeps skin diseases at bay.

Direct application or drinking the extract of various plant parts of *B. orellana* for treating various ailments including skin diseases has been reported. However, use of washcloth dyed with bixin to keep skin-related diseases at bay is unique. It has been reported that the natural dyes show antimicrobial activity. However, textiles impregnated with natural dyes usually show less antimicrobial activity as the uptake of these dyes in the textile is below the minimum inhibitory concentration¹⁰. So, it needs to be tested whether the washcloth dyed with bixin has any beneficial effect on the skin.



Bixa orellana Linn. plant bearing pods

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