

The past, present and future of UG degree colleges

India has more than 6500 undergraduate degree (UGD) colleges across the country imparting education in the sciences, arts and commerce. Initially, most of these UGD colleges were established by philanthropists. Later on, the government took the initiative of establishing UGD colleges and also running many of them. For years, these institutions have shaped young minds in their formative years and actually provided the chunk of manpower in the different sectors of independent India, thus forming an important part of the social and educational fabric of the country.

Despite a large number of teachers of these UGD colleges having limited exposure to research activities, they have been able to motivate at least a section of their students towards higher studies, including research. A cursory look at the 'who's who' of the academic world will confirm that the overwhelming majority of them had their first training in the UGD colleges. But this has been changing over the last 20 years.

The entry of private players in establishing colleges in the last 30 years or so has changed the scenario significantly. There are still new UGD colleges coming up, particularly in small towns and with

the government taking the initiative, but we observe a clear veering of students' and their guardians' interest towards professional courses or the so-called interdisciplinary subjects. Though these courses are mostly 'self-financed', market forces and economic factors have made this education affordable for a sizeable section of people.

In particular, after the emergence of the autonomous colleges, deemed universities, IISERs and the IITs, the UGD colleges are barely getting students who are motivated towards research. Even among the students who have an interest in the subject of study, very few look beyond postgraduation and a teaching job in a school. Since most of the UGD colleges are affiliated to some university or the other, the colleges cannot frame their own syllabi or have their own examination system. All students are compelled to study a course of a standard design. Students take to shortcuts and examination-oriented preparation, and as a result coaching classes emerge to offer help. The whole system has entered a vicious cycle. Obviously, the autonomous colleges are better placed in this regard.

A serious review of this UGD college structure, particularly within science

education needs to be undertaken by the academicians and policy-makers such that the main objective should be to make the students aware that they can make useful contributions to the society and the country if they are trained properly.

It is indeed necessary to chalk out a comprehensive plan regarding how the huge infrastructure and the associated manpower can be best utilized. Periodic teacher training, exposure of teachers to research atmosphere, newer programmes for motivating the students, redesigning the existing courses, more autonomy to the colleges and developing a more learner-centric approach that expose students to the world of science could be some areas that the policy-makers should pay attention. Importantly, questions of disbursing more government funds to the UGD colleges and letting them train future school teachers also need to be addressed.

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S&T coverage in English-language Indian dailies

Mass media representations are probably the most important and continuing influences shaping perceptions about science and technology (S&T)¹. As S&T has intruded into almost all aspects of our lives today, it is crucial that the public is aware of what goes on in this field. Newspapers are one of the oldest and main channels of mass communication. An earlier study estimated² the amount of printed space for S&T-related items to be less than 1%. The highest proportion of space was devoted to nuclear S&T followed by defence, space S&T and astronomy. However, the above study did not include health-related items.

The reason for focusing on English-language newspapers is that even after decades of independence, English is still

valued as a language of the privileged and powerful. So, many people in the country intend to acquire the skills of the language and socialize with it. Moreover, in the recent past, the process of globalization and liberalization has acted as a catalyst in the rise of English language in India.

Here we look at the S&T coverage in 37 national English-language dailies from 1 April to 30 September 2008 (Table 1). This study indicates that 5385 items were published on different aspects of S&T in these newspapers, occupying a space of 986,534 sq. cm. The maximum space was allocated to items on health (~32%) followed by environment (~15%) and space (~11%). These three categories constituted about 58% space and 62% items.

The remaining 42% space was allocated to 13 other sub-disciplines.

The share of items in one-column spread was highest. Only 129 items (2.4%) appeared on the front page of the newspapers, occupying about 4% of the total S&T space across all dailies. The majority of these items related to the launch of the polar satellite launch vehicle, global warming and climate change, genetics, cardiology and neurosciences. Not only were these stories positioned on the front page, but ~72% of them had a column spread of three or more to arrest the attention of the readers.

Of all the reported items, 58% used indigenous as well as foreign sources equally. Among the foreign sources, 20% was from the UK, 15% from USA and

Table 1. Space allocation for S&T items by newspapers

Newspaper	Items		Space occupied	
	Number	%	sq. cm	%
<i>The Times of India</i>	1,453	27.0	189,554	19.2
<i>The Asian Age</i>	409	7.6	74,567	7.6
<i>The Statesman</i>	211	3.9	61,182	6.2
<i>DNA</i>	238	4.4	55,203	5.6
<i>Mail Today</i>	162	3.0	53,229	5.4
<i>The Free Press Journal</i>	361	6.7	52,726	5.3
<i>The Financial Express</i>	251	4.6	50,840	5.2
<i>Hindustan Times</i>	246	4.7	50,752	5.1
<i>The Indian Express</i>	219	4.1	45,144	4.6
<i>The Hindu</i>	214	4.0	43,351	4.4
<i>The Pioneer</i>	113	2.1	34,532	3.5
<i>The Tribune</i>	202	3.8	31,535	3.2
<i>Deccan Herald</i>	299	5.6	29,207	3.0
<i>Metro Now</i>	129	2.4	28,739	2.9
<i>Mumbai Mirror</i>	125	2.3	26,945	2.7
<i>The Hindu Business Line</i>	128	2.4	24,167	2.4
<i>The Economic Times</i>	193	3.5	22,528	2.3
<i>Mint</i>	50	0.9	20,095	2.0
<i>Deccan Chronicle</i>	83	1.5	16,609	1.7
<i>The Telegraph</i>	47	0.8	16,046	1.6
<i>Business Standard</i>	56	1.0	15,576	1.6
<i>The Political and Business Daily</i>	56	1.0	10,256	1.0
Others (15)*	140	2.6	33,751	3.4
Total	5,385	99.9	986,534	99.9

**The Assam Tribune, Bangalore Mirror, The Financial World, The New Indian Express, Central Chronicle, Daily Excelsior, Financial Chronicle, Greater Kashmir, The Hitavada, Kashmir Times, Mid Day, National Herald, The Navhind Times, The Sentinel and The Shillong Times.*

23% from other countries. The proportion of cited foreign sources was significantly higher than Indian sources for topics in environment, space S&T and astronomy. The indigenous news sources were dominated by Press Trust of India, Indo-Asian News Service and Asian News International, whereas the leading foreign sources were Reuters (UK), Associated Press (USA) and New York Times (USA).

About 78% of the items mentioned the workplace of the research reported. Re-

search originating from 70 countries was featured in these newspapers. However, the most dominating countries were USA (~41%), India (~16%), UK (~15%) and Australia (4%). These four countries accounted for 76% of the items that had referred to the place of research. Other major countries were Germany, Canada and Japan (each ~2%), and France, Switzerland, Sweden and China (each 1%).

Among all the items, 24% incorporated journal citations. Out of these, the maximum items (62%) pertained to

health, including life sciences followed by environment (7.7%), psychology (6.7%) and astronomy (4.4%). A few dominant cited journals were *Nature*, *Science*, *Proceedings of the National Academy of Sciences of the United States of America*, *New Scientist*, *PLoS*, *The Lancet*, *Journal of the American Medical Association*, *Archives of Internal Medicine* and *New England Journal of Medicine*.

The findings of this study suggest that S&T coverage is not the priority of English-language Indian newspapers. Even celebration of science, like the Shanti Swarup Bhatnagar Prize distribution ceremony, is absent from science news. Under such a scenario, the decline of interest in science among students should not be surprising. The coverage of S&T needs to be amply visible to the public to register its presence in the realm of social efforts. Thus, there is a case for more science in newspapers. It need not necessarily be a new research finding; it may be an issue of local or national interest on water quality, food science, *Bt* brinjal, house-building or health care. An exposure to the science behind anything that the common man encounters in quotidian life would help shape his attitude towards science besides making him a better-informed citizen.

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2. Dutt, B. and Garg, K. C., *Public Understand. Sci.*, 2000, **9**, 123–140.

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Ban on animal dissection a bane to life science education

A University Grants Commission (UGC) Core Expert Committee was set up in 2010 to consider 'discontinuation of dissection of animals in zoology or life science education in Indian universities and colleges'. Recently, UGC called for a ban on dissection, which sparked a controversy. The decision was greeted with dismay by researchers in life sciences.

A ban on dissection, according to UGC, may help in several ways. A huge amount is spent towards animal buying and handling. A ban on dissection may therefore help in cost-cutting. The decision may also address non-ethical issues being practised, for example, the unhealthy nexus between the suppliers and academic institutions.

The UGC Committee also recommends the use of digital models as an alternative to dissection, similar to Western education. The decision shall greatly affect the higher education system prevailing in India, especially basic training in the life science. Moreover, the quality of education is far below the international standards. It is essential for any life sciences