

used the GUS assay, the candidate was asked the expansion for GUS. Sadly, he did not know. More sadly, the guide of the candidate as well as the examiner, both of whom have guided many students in transformation studies employing GUS analysis, also did not know the expansion for GUS. I shall also narrate another incident, which happened a few years back. A botany professor got a research grant of several lakhs of rupees, out of which he bought an NMR instrument. He used to show this instrument to every visitor to his department. The fact that it remained unused before eventually becoming defunct is another story. One day the professor of economics visited the botany department and as usual he was taken to the room where the NMR instrument was lying. He immediately asked: 'What does NMR stand for?' The embarrassed professor of botany was not

able to answer him, as he did not know the expansion. The economics professor subsequently gave an alternative expansion for NMR: 'No More Research', adding sarcastically that this expansion would aptly suit both the unused instrument and the person who did not use this instrument.

Of late, acronyms are being used increasingly merely for the sake of using acronyms. In other words, the use of acronyms has become a fashion. A professor used (and is still using) acronyms for all titles of major projects that he had prepared for funding by the leading funding agencies. Some examples: RIMIGTA (River Migrations in Tamil Nadu), MOCASY (Modelling Crystalline Aquifer Systems), CORE (Coastal Resources). It looked funny to others as if the acronyms represented code words for some secret (!) projects. The use of acro-

nyms which lead to ambiguous usages has become such a menace that the UGC had to strictly instruct all the universities to adhere to a specified number of 130 and odd acronyms for degrees which have already been approved by it for various graduate and postgraduate programmes.

It is, therefore, suggested that a scientific body must be constituted to approve of and to allow the use of any new acronym that is suggested after strictly ascertaining its essentiality as otherwise the menace of acronyms will increasingly haunt the academic world.

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Contractual appointment of teachers – a welcome proposal of UGC, and additional suggestions to revive excellence in higher education

The news that UGC has a proposal to institute contractual appointments for three or five years in the universities and colleges in future, is a welcome reform in the higher education, especially for science teaching and research. The UGC has become alive and active to the non-deliverance, sheer indifference and non-professionalism of the teachers and this awareness and need to do something about it, would indeed go a long way to revive excellence in higher education. Three decades back in 1972 the author had suggested to UGC the same step in a slightly different form. The conditions in the institutions were not as alarming then as they are to-day. The situation has worsened not only quantitatively but qualitatively too. It is a sorry state that at present the teachers in general do anything else other than teaching and study. The author had suggested to the UGC an annual evaluation of the teacher by the students whom she/he taught in the year on the basis of a proforma followed by an impartial and objective assessment by a committee of senior teachers. Another

suggestion made was to eliminate inbreeding and minimize misuse of authority in the selection committees – the first appointment not to be made from amongst the postgraduates or research degree holders of the same University.

There are three aspects or reasons for the general deterioration in higher education and all the three form a vicious circle, with a cause and effect relationship with each other. Teachers in general do not have love and devotion for studies. They lack commitment and dedication to their noble profession. Any attempt to make them accountable has met with opposition. They have never felt the necessity or taken an initiative to truthfully assess and evolve a code of conduct for themselves. It is only the conscientious teacher/researcher who continues to work sincerely for longer hours than required. In the absence of any controlling measure, teachers who join the profession not by choice and love for it, tend to misuse or misappropriate the autonomy and freedom provided in the profes-

sion. Contractual appointment is a right step to correct this situation. Besides, if one is allowed to seek promotion in the same institution, extraneous factors also seem to contribute to one's promotion. For this very reason, migration of a teacher for promotion would be a healthy condition for sustainable progress of the teacher.

The second reason for the deterioration in higher education has been the appointment of inferior teachers on the faculty who have either no interest in teaching/research, or otherwise are not the best amongst the available ones. Contractual appointment, the first appointment of a teacher not from amongst the postgraduates/PhDs from the same University/department, and seeking of promotion in some University other than the one where serving, all these measures would take care of the ills mentioned above and would lead to a possible welcome improvement in the academic standards. The appointment of temporary staff in the universities/colleges negates the sanctity of the selection proce-

ture. Such appointments should be immediately stopped if a beginning in reform in higher education has to be made.

The third reason for the deterioration in higher education has been in making it 'mass education'. The politicians and the society at large do not appreciate or probably do not understand that higher education means excellence, which we cannot expect from the masses. Mass education as a general investment goes to waste; this could possibly be usefully spent on the youth of real excellence in the country. The concept of higher education means education for the people of calibre much above the average and so it naturally becomes an elitist-education, meant for only a few of us in the country.

Therefore the proposal of UGC to ask the universities/colleges to make contractual appointments for five years is welcome. One would like to add here that not more than two such appointments as a 'Lecturer' to a person be given in the same institution.

To sum up, one can hope to revive excellence in higher education if the following measures are adopted:

- (1) No temporary appointments should be made.
- (2) There should be contractual appointment of a lecturer for five years and this should not be more than two times in succession in an institution.
- (3) The appointment of lecturers in an institution should be from amongst the postgraduates/Ph Ds of other universities.
- (4) For securing promotion as reader/professor it should be mandatory that one should change the institution/university.
- (5) The first appointment as reader should also be contractual for five years and the appointment as professor should be a confirmed one.

One therefore expects and hopes that the UGC and the National Educational Planning and Administration will take

into consideration the above suggestions for future planning and reform in Science and Technology, if not in other faculties. However, one should appreciate that this contractual appointment may look more or less similar to the appointment on probation as is being done presently, and which in effect is almost automatic confirmation. It should have a mechanism of assessment of the performance of a teacher so that the scheme does not degenerate into merely one of appointment on probation. The proposal of UGC would have credibility if some serious thinking and concerted effort is made on the method of evaluation, and accountability and this also is made public for opinion. The implementation of the scheme is then likely to yield the desired results.

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Reducible iron affects organic matter oxidation and ammonium production in wetland soils and sediments

Due to lack of oxygen, nitrogen mineralization process in submerged soils and sediments (including oceans) halts at ammonium production; and nitrification is at a low ebb¹. Ammonium production is the key process for meeting the nitrogen requirements of wetland flora and fauna and controls the primary productivity of submerged soils and aquatic sediments. Most wetland soils, especially those in the tropics are rich in iron² and redox cycling of iron (Fe) exerts a wide-ranging influence on the biogeochemistry of submerged rice soils and aquatic sediments where iron is abundant^{1,3,4}. The purpose of this communication is to bring to attention the role of reducible iron that participates in iron redox reactions ($\text{Fe}^{3+}/\text{Fe}^{2+}$), on organic matter oxidation and ammonium production or nitrogen mineralization in submerged soils and sediments. Although most studies have been conducted in submerged rice soils and freshwater sediments, they

have relevance to nitrogen nutrition of flora including primary productivity of phytoplankton in oceanic regions. The preparation of the communication was stimulated by the recent interest on side effects of oceanic iron fertilization⁵.

In the absence of oxygen, anaerobes successively use nitrate (NO_3^-), manganese Mn (IV), Fe (III) and sulfate (SO_4^{2-}) as electron acceptors in anaerobic microbial respiration⁶. In most tropical soils and aquatic sediments, Fe is the main electron acceptor^{4,7} and thus plays an important role in wetland soils and sediments. Iron occurs as Fe (III) oxides and oxyhydroxides, and in the structure of clay minerals⁸. The reduction of iron is affected by surface chemical reactions and is directly related to the concentration of organic reductant⁹. The reaction can be represented by the equation: $\text{Fe}_2\text{O}_3 + 1/2\text{CH}_2\text{O} + 4\text{H}^+ = 2\text{Fe}^{2+} + 5/2\text{H}_2\text{O} + 1/2\text{CO}_2$. In this reaction, Fe (III) oxides serve as the source of

reducible Fe and organic matter (CH_2O) as the source of electron donor. Also, the application of organic matter has an inhibitory effect on the crystallization of amorphous ferric hydroxides and keeps Fe in the amorphous and relatively reducible form¹⁰.

Geological evidence suggests that Fe (III) reduction has been an important process for organic matter oxidation since early in the earth's biotic history. The strong correlation in the occurrence of isotopically light carbonates and magnetite in the Precambrian banded iron formations indicates that organic matter was coupled to Fe (III) reduction in this environment⁴. Studies with freshwater wetland sediments have demonstrated a direct correlation between first-order Fe (III) oxide reduction rate constants and initial rates of organic carbon mineralization as measured by the amount of carbon dioxide and methane accumulated¹¹.