ASSOCIATION OF INDIAN UNIVERSITIES

#Let'sBeatCoronaTogether

ASSOCIATION OF INDIAN UNIVERSITIES

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In This Issue

Moving towards Education without Examinations

Neeraj Saxena*

The global COVID-19 pandemic slammed brakes on the academic cycle at a time when the students were ready for the end semester/year examinations besides lakhs of school-leaving students aspiring to pursue professional/ higher courses, waiting to take competitive examinations/ tests. The stunning unprecedented scenario has sent academicians into a huddle thinking hard about the options to complete the academic year by conducting the examinations. As embedded presently, examinations serve as checkpoints for both the learner and the certifying bodies and in handing them out an acknowledgement that a certain level of education (unfortunately not the competence or proficiency) has been acquired. But is it not surprising that education content and delivery have changed over the last two centuries, but examinations have not? By examinations in this article, I confine to the proctored test of fixed duration conducted by an authorized/ certification body and demanding recall of predetermined content, in the answer sheets. Sadly, the efforts during the pandemic, as evident from the array of webinars on examination/ online courses, have been about how to stop copying of answers instead of getting better answers and hardly anyone speaks about the assessment of everything else that makes a graduate well-rounded!

The idea of examination seems to have percolated into the education system, geared up as it has been for mass production of trained workers aligning with the needs of the industrial age. Examinations in the education (prescriptive learning as I would call) that we have had, have been extensively used for facilitating clearing the grades, upwardly progression, conferring degrees, admitting people into elite folds etc, basically for grading, segregating and labelling scholars. They have also been used to admit students whenever the supply has been overwhelmingly higher than the demand and in the process created a highly competitive, at times cut-throat, environment that rejects the majority. What's more striking is that each individual is admittedly unique and different in the terms of abilities, proclivities and capacities, yet the same yardstick or battery of tests is used to grade each individual and label her/him as passed or failed. Can a human pass or fail? Only an object meeting or not meeting predetermined parameters can. So do examinations fit into the learning process and academic transactions? Why not check a person for what she or he can do? Why identify a person with what he cannot do or is lacking in? Should not there be an assessment of what the person can improve upon in further? Why not empower a person to chart her/his own learning trajectory that aids in unleashing the full potential?

Before delving deep to explore answers to these questions, let's see if the term "examination" itself is the right word or expression at

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all. One examines an object against set standards and finds it deficient or conforming to them and labels them accordingly. Health of a human can be examined because the vital parameters of a healthy human have been found to be within a certain range and soundness of a body can be declared by recording the vital parameters and comparing them with range. Can the same be applied to declare or certify the level of knowledge with the same set of questions administered to tens, to hundreds and to even thousands of students? Certainly not, and the word "examination" therefore, should be reserved for use in the context of inanimate objects and "assessment" be used for humans, possibly with a befitting adjective, as we shall see later in this article.

Having denounced the term examination, as we understand it in the context of education, let us see why examinations (or tests) exist there in the first place. Examinations have been there as tools or interventions because the knowledge was not readily accessible as and when needed until recent decades, for application to "just in case" situations and committing it to the memory (even without associating with the real world) was the only option. Therefore, it was quite appropriate to, after a course had been administered, check whether a student had added things to her/ his memory or not, and will be able to or not- recall to use it "just in case" situation. Here came in the limited-hour examinations to serve like dipsticks, to gauge and ensure that memorization of information was up to the order or not. While the dipstick serves as an excellent tool for checking the capability of a person to memorize, it is not a credible pointer to sound comprehension.

Examination, in a way, gives an assurance that education has been acquired so much to the hardened belief that those who were able to reproduce with accuracy, were in a better position over others in applying that knowledge needed "just in case". And that's how high scorers have been privileged to better opportunities in higher studies and jobs. Certainly then with a large number of aspirants for the coveted goals, every single mark counts in the competition, and all humans go rat. Alas! Examinations to create competition, to admit some and reject more, and expect people to collaborate at workplaces; surprising and shocking too! In this knowledge age, when the same knowledge is accessible in equal measures to anyone with access to the internet, do examinations really aid in learning? Are weekly/ monthly tests or biannual/ annual examinations still relevant? Let's try to see the things retrospectively and also try to put things in perspective and see how useful (or useless) the examinations that we currently have, are.

We all have arrived in the knowledge era and can feel that knowledge stands democratized, for the first time in human history, thanks to the internet, communication and display technologies. The knowledge accessible to one person is accessible to anyone, anywhere and anytime, that too at a click of a button, at an oral command, swipe on the screen, or even a gesture (and soon with brain-computer interface, brain implant technologies maturing, even the present mediations will vanish). A deep retrospection reveals that all through the past, resources of all types were used to create or generate knowledge, preserve it in books (and libraries) and its, dissemination though multiple agents including teachers, schools and colleges. It was also about gaining knowledge, amassing it, retrieving it and getting into even deeper layers to add more to it and the entire education system built around it. Clearly, it was more of knowledge creation from resources all along, than resource creation and the equation was tilted in favour of the creation of knowledge than resources. But in the knowledge era with near assured, equitable access to all sources of knowledge, creation of resources from the knowledge that we have around us- is gaining traction and it is nothing but "innovation"! Are our institutions, courses, teachers, curriculum and examinations as they are presently- designed and aligned to support innovation? Let's attempt a reality check.

Education is now happening also outside the class-rooms, learners have knowledge of the universe accessible on their palm, teachers are what libraries have been to us to be connected with only when we need, the joy of learning is found in hackathons, cafes and on-the-go. Things have really started flipping as we talk about flipped-classroom- which has main streamed the online learning. A teacher-centric education system is flipping to be a learner-centred one. The purpose of education is understood as not for creating jobs but for creating opportunities (jobs included), for unleashing the potential of a learner; a shift if not flip! Driving this polar shift are technologies, a number of them growing at an exponential rate; it is no more in electronics that we see Moore's law being followed- of doubling the numbers of transistors on a chip every 18 months. We have examples from disparate domains- the cost of DNA sequencing, the cost of solar power, cost of 3-D printing etc, seem to be following the same progression. When these technologies are inducing changes and poised to disrupt the education, should not the utility (and futility) of the examinations (as we conduct now)

be subjected to review? Let's see some unsavoury side of examinations, shorn of any innovation as they are, when "innovation" resonates.

The examination (as delineated earlier in the article) expects students to regurgitate what is there in books or has been taught by teachers, with best possible accuracy. Let's admit that this quest to reproduce, prompts the students to copy in a bid to score over others. What makes it worse is that students get initiated, with due support of clueless teachers, into this mindless quest from grade/ class one itself! Thus copying, though abhorred, becomes a way of not only learning but also an aid to upward mobility by way of "clearing" or "passing" examinations. Also, the faculty of imagination, critical thinking and creativity get ruthlessly muzzled as the entire focus is on solving/ recalling the known. With the ease of conducting tests, posing one (or few out of fear of copying) set of questions to a large number of examinees, pro-scoring questions, multiple-choice questions (MCQs), established styles (read decipherable patterns) and also inertia built over decades, the experiential learning through practical (field activities, internships etc. that connect head, hands and heart), has been put on a very low pedestal- the worst thing to happen in education! Isn't it ironic that, past the higher/ professional education received after "clearing" examinations, we expect the employees at workplaces to be ethical and persons of integrity; taught only inside-the-class to be out-of-the-box thinkers; those made to follow strictly the instructions and not to question, to be visionaries? A yawning gap between reality and expectations!

Instead of making a question paper that tests known knowledge and expects a learner to pass during the course of education, what we need is to give a person is a learning experience which will always be interspersed with failures, opportunity to correct by self and most important of all, connect experience with theory (and not the other way). Yes, failures need to be appreciated as an integral part of learning, which the current examination system fails to (and is inexorably harsh to the failed) and is, therefore, all the more a reason to be junked away. Interestingly, it is now found (discovered in alumni meets) that while those who succeeded in scoring high in the exams were able to get highly paid jobs and opportunities in higher education, the students who were not able to memorize things are now emerging better off as innovators, entrepreneurs or job creators largely because of their ability of organization, interpersonal skills, and in making good use of resources available whether knowledge or the human resource.

Taking cognizance of the low employability of technical graduates and aiming at a turn-around, as part of its initiatives to improve the quality of technical education, AICTE formulated an Examination Reforms Policy, with Bloom's Taxonomy at its heart. The taxonomy proposed in 1956 by Benjamin Bloom (recently updated) includes six levels of learning which can be used to structure the learning objectives, lessons, and assessments of the course. The revised Bloom's Taxonomy in the cognitive domain includes thinking, knowledge, and application of knowledge. It is a popular framework in engineering education to structure the assessment as it characterizes complexity and higher-order abilities. It identifies six levels of competencies (Remembering, Understanding, Applying, Analyzing, Evaluating and Creating) within the cognitive domain considered apt for the purposes of education. While *remembering* is recalling from the memory of what has been learnt, *understanding* gets reflected from ability to explain ideas or concepts. *Applying* is seen through the ability to use the information in another familiar situation and its higher level, *analyzing* shows up with the ability to break information into the part to explore understandings and relationships. Further, *evaluating* is justifying a decision or course of action which is topped by the ability to generate new ideas, products or new ways of viewing things i.e, *creating*.

Bloom's Taxonomy is hierarchical, which means that learning at the higher-level requires that skills at a lower level are attained, a fact that needs appreciation to overhaul our examination system. At present, the first three learning levels; *remembering*, *understanding* and *applying* and to a small extent, the fourth level *analyzing*, are assessed in the examinations/ tests administered for a limited time. Abilities like analysis, evaluation and creation which really turn a graduate into a professional cannot be assessed by the examinations that we conduct and can only be assessed in extended course works, projects, etc. There have been attempts, concerned about the over-emphasis on rote learning, to include questions to test higher-order abilities, but the intent still remains scoring higher marks over better learning. The employability of passing graduates then remains questionable as examinations fail to comprehensively assess them on other graduate attributes which never get reflected in degrees.

The AICTE Policy emphasizes that assessment must test higher-level skills viz. ability to apply knowledge, solve complex problems, analyze, synthesize and design. Also the professional skills like the ability to communicate, work in teams, lifelong learning that matter for employability of

the graduates more than ever. The Policy proposes "open-book examination" as a solution which is less taxing on memory and can fulfil the requirements of a degree/ diploma/ certificate issuing body. Open-book examination is time-bound, designed in a way that allows students to refer to approved material while answering. They are particularly useful to test skills in application, analysis and evaluation, that correspond to higher levels of cognitive skills in Bloom's Taxonomy. The Policy recommends the use of Rubrics as a tool for assessment and grading of student work, being a transparent and inspiring guide to learning. Rubrics are scoring, or grading tools used to measure a students' performance and learning across a set of criteria and objectives. They communicate to students (and to other markers) the expectations in the assessment, and what is considered to be of importance.

The Examination Reforms Policy was released at a time when knowledge is freely available for creating resources, opportunities for more knowledge, which requires the skill of higher-order beyond remembering and comprehension. Towards its implementation, faculty across technical institutions are being made aware of the reforms and encouraged to work in teams to prepare questions for testing the higher-order cognitive skills. It is expected that other examining bodies (Boards/ Polytechnics/ Universities/ Training Institutes), across all levels (Primary/ Secondary/ Higher) and formats of education (conventional/ open/ distance/ online/ continuing), would pull up their socks to pioneer change. The COVID-19 shock throws, an opportunity to reset the examination button as we have presently, which smacks of academic lethargy on one hand to anachronism on the other. Yes, we need to profusely infuse into the courses- generous dosage of projects, open-ended experiments in laboratories, project-based learning modules, co-curricular experiences, internship experiences; a portfolio of experiences, etc which allow acquisition of disciplinary knowledge along with other abilities.

Even as the policy of AICTE which roots for limiting questions examining the low-order cognitive skills to 30-40%, gains traction on the ground and picked up by other examination bodies, it makes a lot of sense to look at the limitations posed by the current global pandemic- going online for delivery of learning content with no option to exercise and that of social distancing in real learning spaces. It will be in the fitness of things that we resolved and stopped altogether asking questions to check the memorization skills of the students at least in higher education to begin with. Also, it would be apt to shift focus from examination to assessments, built-in to help the learners chart their own learning path and advance at their own pace- personalized and adaptive learning, aided by technology of course. This means departure from placing examinations as ladder-steps for upwards mobility in academic or professional spaces (for which open-book examinations should be adopted). The questions to test lower-order skills must be left for use in the classroom discussions/ quizzes, or embedded into online courses or can be outsourced completely to the teaching/ learning machines which can adequately take care in an independent and impartial manner, the learning needs of the students. Also the practice of holding proctored limited hour examinations must be stopped if at all we are serious about the learning to be impactful, for the simple reason that what needs to be remembered gets actually tested automatically if the questions are properly framed and are aimed at testing the higher-level cognitive skills. Ever wondered how many answer-sheets filled-up in limited hours get discarded every year (and also cost us 6.6 million trees in India, as per a guesstimate), with answers that have neither contributed to knowledge nor to ideas nor solutions!

The questions of higher-level skills will, by design, be open-ended, with no known answers and will require awareness of the world around in general and in that subject in particular and skill to use search tools. These questions need not be answered in a fixed duration and can be from a couple of hours to few days, evaluation of whose answers should be left to be done using rubrics, by the peers, teachers and even practitioners. The advantage of such a practice would be that the learners come to know about the views of peers, understand their side, and begin to appreciate them rather than forcing their own views and prepare them to collaborate than compete. This unburdening approach to the teachers would ensure that learners start having a world view and develop an inclination for the same rather than harbouring their own views and persisting with them. After all, from the education system as a supply-line of workforce, we expect people of integrity, ingrained with work-place ethics and trained to collaborate and be productive.

When higher education institutions change the gear, schools should not be left behind in giving up the examinations they have been conducting. There have been attempts to supplant questions aimed at testing higher-order thinking skills but their purpose gets smashed by the limited time. Furthermore, the shift in 90+ scores leaning towards 100 in the Board examinations in recent years only indicates how the

system is working more for the same. The pandemic blow gives us the best opportunity for the secondary school level examination bodies, to take full advantage of mainstreaming of online education and open up the choice of subjects to the learners as wide as possible. One needs to be mindful of the technological advancements happening on an unprecedented pace, enhancing the uncertainty on the future skills. The secondary schools must prepare the kids smart enough to be prepared for a career and skills that are yet to emerge; not really 90+ scoring kids but smart learners-the ones trained to learn on their own, and are agile and resilient too. This requires moving away from memorization of knowledge to its application, from fixed syllabus to open questions, from fixed-hour tests to exciting challenges and from memory tests to problem-solving. In the process of alignment of educational systems and subsystems to deliver comprehensively in this knowledge age, it would make enormous sense, to instead of teaching, testing, grading (A-F) and certification in 5 odd subjects, consider exposing a learner to 10-20 subjects+ skills+ competencies and issue a certificate with all that a learner scores "A" in. Let examinations, constrictive and restrictive as they are on abilities and passions, not be a leash anymore, gagging the potential of a human.

At the primary school level, there must be no examinations/ tests and memory testing be built into games, physical activities and social engagements, so that young mind can explore the world freely and encouraged to be imaginative. This for sure, will groom them to be good observers, responsible thinkers and quick learners when they move to secondary and higher levels, at least free of tendency to copy or cheat; which of course, aids in assimilating human values better. At the upper primary level, the students can be empowered with tools that help them bring out their talent and abilities and whet their appetite for knowledge and fire-up the passion. It is at this level that technologies must be used to help each student to delineate and create their own learning path, encouraged to pursue in what she/he wish to excel in (and not what schools or its teacher can teach or examine). Fortunately, it is possible to do that with Information & Communication Technologies, Display & User-interface technologies, Internet Technologies, Computational technologies, Simulation & Modelling technologies whose costs are only going to sink. The challenge, however, would be for teachers who are fast losing their role as disseminators of knowledge, to be that of confidants, counsellors, pathfinders, and navigators to the young learners and shall have to be trained accordingly.

In a world abound with information/ knowledge and its access becoming easier and easier, there is no need to accumulate everything in the memory; instead, the time should be spent in gaining experiential learning and connect things/ experiences with theory which resides in the memory longer. It would make enormous sense now to train the students and arm them with skills, along their learning pathways to learn how to convert knowledge and resources into something better, offer clever solutions, improve things around and make lives better and for this reason, higher/ professional education should be recalibrated. Here the learners should be assessed for how they attempt the problem and not on actually solving the problem besides how they document. This would not only discourage copying as the answers are not known but also make learning an engaging exercise and not repulsive. In fact, low-order questions in higher education should be looked down, at par with a publication in a lowly journal. For the purposes of degrees/ certificates, open-book examinations should be resorted to, unburdening as it would be to the students, teachers and the system alike.

The new Educational Policy also desires education to be such that it prepares students with 21st century skills. Accordingly, there will be a need to build infrastructure and ecosystems for the same, train the teachers to be key enablers of the innovation ecosystem, enliven curricula with real challenges and replace examinations with "personalized and adaptive assessment". In short, in our quest to move to higher versions of Education 4.0 or 5.0, examinations focusing on testing of lowest cognitive abilities should be outsourced to machines (can be embedded in the online learning material) or left for classrooms. For middle level cognitive abilities, rubrics could be the appropriate tools with the involvement of peers and teachers while for the highest levels of cognitive abilities, the assessment can be best done by the person/ agency for which evaluation or creation is done or by the professional bodies. For academic requirements (for issuing the certificate or degree which is losing relevance to nano-degrees now), as mentioned earlier open-book examination is an option which can take care of all levels of cognitive skills; and for employment (which should have a strong pull from the recruiters), the testing part should be left to the employer who can look for right aptitude, knowledge and competencies in the candidates. Let's move from the age of "same question-same answers' to "same question-different answers" in the examinations, to source more ideas to support and spread the culture of innovation- as a way forward to a self-reliant India! ❑

University Examinations: The Way Forward#

Madhusudan Chakraborty* and Avijit Gangopadhyay**

COVID-19 has mercilessly battered the education ecosystem across the globe. The career of the student community is at stake and the universities have been taking a call on the same. The pandemic has created an extraordinary situation disrupting the regular teaching-learning process. The universities are pondering on how to deal with the unprecedented disruption and how to maintain the standard of education while protecting the students, staff and the faculty members from deadly infections.

A university confers degree on a student only after the latter fulfils all the academic requirements. The pandemic has, however, raised several roadblocks to the entire process of imparting education including the conduct of the examinations. With the lockdown all over the world the universities have been closed for over eight months. While the universities took upon the responsibility of continuing with the academic programmes offering education online, the situation has so far not been conducive to conduct the examination in a normal way as has been the practice so far. In order to complete the academic requirements many universities have conducted the final examinations online on the available digital platforms. Conduct of examinations online has perhaps come to stay in view of the uncertainties imposed by the pandemic. Yet the efficacy of the same in conducting subject wise university examinations needs further scrutiny. Necessary modifications may have to be incorporated in the software as we gain experience with time that hopefully will result in building a robust system that would keep the integrity of the process intact.

The existing pattern of university examinations has wide acceptability all over the world precisely because of its robustness. The smoothness of conducting the examination in large halls accommodating a fairly large number of students with invigilation in place and ease of controlling malpractices perhaps made the process continue till date. However, debates were on in different forums on the possibility of introducing better methods for measuring the outcome of learning. It has been felt that prevailing examination system primarily measures the level of conceptual understanding in addition to the ability of the students to retrieve information from memory. Rarely the ability to solve a problem based on the skills and knowledge acquired by a student is examined.

While a reform in the existing examination system is called for, it may not be prudent to consider the same in isolation. In fact, the teachers play the pivotal roles in the process of assessing the performance of the students which is an integral part of the teaching learning process. Thus a reform in the examination system would require redefining the roles of the teachers and preparing them to face the challenges of the new ambience.

In fact an integrated approach in reviewing the entire teaching-learning process so as to put a robust system in place could be the best way forward. For quite some time deliberations were on in different forums on the alternative methods of measuring the performance of the students. In order to examine the ability of the students to solve problems based on what they have learnt, a couple of alternative methods like the open book examination, take home examination, collaborative testing, student portfolios, project based assignments and performance tests to name a few have been floated. But the desirability of replacing the existing examinations by such methods or any new method while dealing with the students in mass at regular intervals needs to be examined. Moreover such methods are heavily dependent on the ability of teachers to frame questions for open book examinations, design home assignments, assess the performance of the students and grade them with all fairness.

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Any consideration of a change in the examination methodology has to be integrated with empowering the teachers in terms of their skills. The New Education Policy (NEP) of the Government of India makes it clear that the teachers should be at the heart of education. The importance of empowering them to harness their full potential has been made abundantly clear. The universities have no option but to organize faculty development programmes for all the teachers and allow them to dedicate fully to the teaching-learning process.

A teacher must be loaded with a sense of proportion keeping in view the fact that the teachers are required to be engaged with multiple tasks. Optimal loading of a teacher is going to be a tough task for many universities due to shortage of faculty members and financial considerations. Overloading not only burns out the teachers but also adversely impacts the quality of teaching and ultimately the students suffer. Thus teachers must be a central point for any discussion on reforms in the teaching-learning process, the examinations in particular.

The teaching should not be confined to passing on information only or even clearing the fundamental concepts. The teachers are expected to blend teaching of the subjects with a couple of other skill based issues that help turning out graduates with a certain level of maturity and having necessary skills to apply the knowledge acquired in their profession. In fact the teachers have to play the most significant roles in the teaching-learning process that transforms the young adults to mature global citizens. The teachers have to play role models and train the students to be disciplined, alert, receptive, analytical, critical, creative and innovative. The teachers must engage in research not only to raise their own academic potentials but also to imbibe a culture of the same amongst the students. The culture of research leads the students to discover their power of probing and creative thinking and also to develop an analytical bent of mind.

Thus a reform in the examination system has to be coupled with the vigorous training of the university teachers. The universities desirous of achieving excellence may establish a Faculty Development Academy not only to train the teachers but also to check their honesty and integrity on a regular basis. Even the students could be asked to take the honesty and integrity test at suitable intervals.

The training of the teachers must cover utilization of most advanced technologies in the teaching-learning process in addition to mastering the techniques of teaching online as well as in physical class rooms with emphasis on problem solving. A teacher must learn how to blend the teaching of a subject with uncovering the inherent powers every individual student has that would help the latter to acquire the skills of probing, creative thinking and problem solving. The academy may design programmes to test the honesty and integrity of the teachers and may issue certificates once a year through such a test.

Students enter a university at a very tender age. They pick up a host of skills through curricular, co-curricular and extracurricular activities and graduate as matured global citizens. However, there hardly is any provision to measure the outcome of learning through the co-curricular and extra-curricular activities that make significant contributions to the knowledge and skills acquired by the students.

There appears to be a race for scoring good grades in the examination. While good grades give the students and parents satisfaction and pride, the same may not reflect on the ability to perform in their professions. It is often the case that a student's success in life is not directly correlated to his past success in his/her grades, JEE, SAT, GATE, GRE and other standardized tests. Perhaps a review of the grading system to indicate the competence of a graduate with regards to his or her curricular, co-curricular and extra-curricular achievements is the need of the hour. The possibility of redesigning grade cards incorporating an assessment of the attitude as well as aptitude of the graduates could be explored as the same impact the success in their respective professions. It is perhaps time to take a fresh look at the process of assessing the students taking the current as well as post pandemic situation into consideration.

Most of the universities compute the final grades of students taking into account the performances in examinations and the internal assessments based on several factors including attendance, class tests, term papers and home assignments. The weightage assigned to the different components of the final grade may be debated and reviewed to take into account the outcome of learning through participation in the various activities in the university. The proponents

of computing grades through performances in curricular activities only may have to take a relook at the existing system as the past experience points to the glaring importance of the other activities and those of the attitude and aptitude as well. Perhaps a greater weightage could be considered for the internal assessments comprising all the above components of learning.

In the absence of any acceptable alternative method of evaluation of the performances of the students the final online examination is likely to continue with rigorous training of both the teachers and the students to preserve the integrity of the same. Those responsible for reviewing the teaching-learning process may consider whether attempts should be made to migrate from the existing system to open book examination or collaborative examination or any new method to test whether the students are able to solve practical problems based on their skills and knowledge base.

A close look at the alternative methods of examinations reveal that these are most effective in assessing the ability of the students in solving problems based on what they have been learning. It looks possible to ask the students to solve a given problem in a longer time frame and submit their findings in the format of a research paper. They would be free to search the internet, look up books and journals, consult teachers and friends and would be working on a research mode to find a solution. Asking students to solve problems would force them to study on their own and their creative mind would be busy in finding solutions. The students would certainly gain confidence and take pride in solving problems. In fact evaluation of the students could begin from the start of a semester and continue till the end. Continuous evaluations should always be preferred over the evaluation at the end of a semester through an examination as has been the practice now.

Both the teachers and students should, however, be aware of and conversant with the process of evaluation. For example, assessment of the performance in an open book examination could be carried out by marking different components like the level of understanding of the question, the methods adopted for searching books and literatures for consultation, the approach and steps in solving the given problem and finally the solution arrived at. There need not be any unique solution for the problem. The students are not expected to follow any set model to solve the problem. Rather each and every one is expected to offer solution reflective of one's creative thinking. The teachers have to learn to award higher grades to those who appear to be more creative than those who follow existing models. In essence, the greater component of the grades earned by the students should comprise of their performance in various subjects through the continuous evaluation process as above, the outcome of their learning through co-curricular and extracurricular activities and the results of their aptitude and attitude tests. Their performances in the online examination at the end of the semester may form the smaller component for computation of the grades.

In closing, a being little philosophical as we all are in this time of the global pandemic, we would like to remind the readers and leaders of our education system the words of Swami Vivekananda, "Education is the manifestation of the perfection that is already in man." The art of teaching now should probably follow this idea to the best possible extent. It will serve the students and our country best, if the teachers look for building that 'manifestation of the perfection' that is already in every student. They can look for the completeness in the student while grading and not subject their evaluations to be biased by our (societal) own inability to provide a proper infrastructure in which the students could otherwise be evaluated. That will be one of the ways forward. ❑

Challenges for Examination and Evaluation Reforms

R D Sharma*

An Examination wing of the University System, being its integral core sub-system, is virtually its powerful image building face entrusted with sacred responsibility of managing the topmost secret and confidential work with highest standard of professional efficiency, effectiveness, and lapse-free excellence particularly with respect to conduct of examinations, paper setting, evaluation of answer books, and all connected procedures and processes. A university is supposed to have its very strong statutes and regulations for all examination related activities which are always in line with the notifications of all the concerned regulating bodies like University Grants Commission (UGC), All India Council for Technical Education (AICTE), Medical Council of India (MCI), Dental Council of India (DCI), Bar Council of India (BCI), etc. In fact it is because of such a strong mechanism the students and general public have highest respect and confidence for the same and thus its documents, certificates and degrees are accepted world over. It primarily operates through the Office of Controller of Examinations as its topmost Officer under the direct supervision of the Vice Chancellor as per directions of highest statutory body of the University and remains always active and vigilant for updating and equipping the system in the light of frequent directions from various aforesaid regulating bodies of the country as per its education policy for highest level of professional excellence. Further, howsoever the examination system is statutorily interwoven and strong enough, yet its performance as expected is possible only with adequate active and timely cooperation and coordination among all the stakeholders without any compromise on its basic responsibility and commitment within the framework of the policy directions. Essentially the examination wing of a public university ought to be ever ready for all kinds of usual and unimaginable complaints, frequent protests and delegations against various issues like out of syllabus question papers, unbalanced question papers, erratic evaluation, use of unfair means at large scale in examination halls, ineffective supervision in examination halls, leakage of question papers, question papers contradictory to class teachings etc. due to over enlightened students

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of 21st Century as well as existence of several coaching centres along with quite active other stakeholders including teachers, parents, media and student leaders. Any lapse in the examination system is taken very seriously by the government and society and it is in this context that in many Indian universities people found responsible for leakage of question papers, use of unfair means and scams in the examinations and evaluation have been awarded deterrent punishment and even imprisoned to maintain and retain the sanctity and sensitivity of the examination system.

The Author had an opportunity to work as Controller of Examinations (CE), University of Jammu (JU) during 2009-2010 in addition to his routine duties as Professor of Commerce. During his tenure as CE several steps were taken to bring in significant reforms in the examination system for further qualitative improvement of far reaching significance. The timely declared results of various examinations during this time were widely seen as qualitatively fair, error-free and satisfactory on all parameters. A transparent system was created for better, objective and lapse-free solution to various student problems relating to examination procedures and practices. A few of the efforts made during his tenure with active cooperation from all the stakeholders, particularly JU employees and experts engaged in confidential work, in this regards are discussed here:

On the top of all the steps in the examination system, the syllabus prescribed for a course is the most important and sacred document for reference as guidelines for all kinds of routine and unusual problems given above. In fact the syllabus ought to be prepared meticulously, to ensure that it is complete in all respects and error-free, by the prescribed statutory bodies much in advance. As per university norms it is revised invariably once in three years as per academic and industry relevant updates and changes to the extent prescribed, however it may be fully changed every year also when urgent and in that case its old version remains valid for about three years for failure students of the relevant session. The syllabus prescribed includes compulsorily the contents of the subjects to be covered in class teaching with requisite number of class lectures, tutorials, practical work unit-

wise in a session/semester, note for paper setting and evaluation, marking schemes and requisite weights to the units in the paper setting and evaluation, note to the students for preparation of examination and choice for number and type of questions to be attempted within sections, units and overall in the question paper. It also includes list of relevant study materials like books and papers to be consulted by the students and teachers and also a sample of question paper. Efforts are required to ensure that this document is referred to by all the parties concerned while carrying on their respective jobs without any lapse in connection with which they are associated so that all concerned in the chain maintain uniformity in their efforts in line with the trend and standard. The syllabus so prepared ought to be adequately matching with that of world class institutions vis-a-vis relevant to local conditions too. It is in this context that the Author used to arrange at least one meeting every year with each of Conveners Board of Studies, HoDs concerned, Deans of various faculties, and Principals of Affiliated Colleges for ensuring aforesaid statutory and non-statutory requirements for smooth and error free examinations and evaluation system. For this purpose at least once a year one workshop of the concerned experienced stakeholders including senior paper setters, evaluators and other teachers was also used to be conducted to identify various kinds of lapses and difficulties these experts experienced during immediate past along with the possible solutions, updates and precautions required to be taken up at different levels of the process for reforms in the system accordingly as an ongoing exercise to remain on track always. In fact preparation of such an invaluable basic document for each question paper is always ongoing long drawn exercise starting from the bottom of the University system i.e. right from the concerned teachers routed through the respective Boards of Studies, Faculties, Academic Council and so on within the broader framework of model syllabus and question papers notified by the concerned regulating agencies.

It has often been observed that despite very meticulously drawn contents of various courses of study and syllabi with aforesaid effort lot many discrepancies used to exist expectantly, thus asking for much more effective system of preparing the panel of experts for paper setting, evaluation and other allied activities, which as a routine was also detailed out as guideline along with the preparation of syllabus itself. In fact none except the designated known names of experienced subject experts for external examinations are considered for the panel of paper setters which originates from the concerned Boards of Studies. Thus the Author as Controller of Examinations ensured all effectiveness in this regards through detailed deliberations frequently with members of various prescribed bodies of the university in the manner as stated above, for which Jammu University has excellent track record. In order to have error free and balanced question papers, panels of moderators also used to be drawn through the Conveners of Boards of Studies to see that all such discrepancies as are likely to cause serious problems to the students in the examinations are removed before the draft question papers are sent for printing. In order to ensure further confidentiality and secrecy at this stage too a set of three question papers were set and moderated so that only one of them could be taken up blindly out of three sealed envelopes at random i.e. the contents of question paper reaching finally in the hands of students in the examination halls are never in any way in the knowhow of anybody including the printers as entire work here is done through codes in place of names of courses, programmes and institutions.

Along with paper setting, utmost care was exercised in evaluation process too. With the passage of time number of students pursuing various academic programmes increased many folds but adequate number of faculty members were not available in the ideal ratio prescribed due to many hurdles like budgetary constraints, lengthy recruitment process and numerous litigations, thus causing abnormal delay everywhere in the academic calendar including frequent obstructions in the conduct of examinations, evaluation of scripts on time resulting into further delay in the declaration of the results, and thus finally delay in the commencement of academic session also. Moreover conventional methods of evaluation by the experts at the residence on their ease and convenience also proved time consuming, though used to be quite confidential and secret. Accordingly much faster system of centralised evaluation was introduced with transparently prepared guidelines, along with the ongoing conventional system in case of a few courses of lesser number of scripts. Here soon after examination the evaluation of scripts used to be carried under the supervision of one Director, always of the rank of Professor, of the evaluation centre at one central place with adequate supportive staff, initially at main campus of Jammu University. In this evaluation centre the experts drawn from universities nearby and affiliated colleges would visit

the centre at their convenience during the time given only to evaluate the scripts there, subject to maximum number of scripts prescribed to be evaluated per day and total number of scripts in the whole lot per expert under the overall control of head examiner wherever required in each paper. Subsequently such centralised evaluation centres used to be created outside the main campus of the University too in some bigger colleges under the supervision of the Principal concerned as Project Director, as teachers from far off places were unable to visit Jammu during working timings of the evaluation centre. This change regarding the venue of evaluation facilitated the declaration of the results on time, saving a lot of time for students, evaluators and the institutions for the commencement of next session on time and thus assuring more number of actual teaching days to the system as a whole as per UGC requirements.

The Conduct of examination throughout the Jammu Province in about 400 centres having about 4000 question papers in as many as about 200 courses per year was equally challenging task to be managed properly. Virtually conduct of examinations effectively and that too on time requires the requisite number of Supervisors, Superintendents, Deputy Superintendents, Assistant Superintends, Flying Squad Members, Code officers, Overall In-charges and other supportive staff. There was a time when only permanent teachers and non-teaching employees of the university and affiliated colleges of requisite experience were considered eligible to be associated with conduct of examination and other associated activities, however with the passage of time needed, adequate number of eligible people were rarely available in ratio to the number of students admitted. Thus, with drastically changed situation of heavy work load of conduct of examination and evaluation of scripts due to more and more colleges and students admitted along with increasing new programmes of study to meet the demand of higher education but with inadequate matching strength of faculty and supportive staff, the rules had to be accordingly updated and amended for timely and effective conduct of examinations and evaluation by making it mandatory for every teacher to be associated with the conducted of examinations and evaluation for at least once a semester despite some displeasures from different quarters. Accordingly who so ever was appointed whether on permanent or contractual basis in the University or affiliated colleges used to be associated with these jobs on the principle that those found eligible for teaching or teaching supportive activities why not be associated with examination and evaluation, however with at least one year's experience. Similarly needed cooperation was obtained from the Flying Squad Members also who were drawn from faculty members and officers of the University and Colleges to assist the supervisory staff for controlling the use of unfair means by the misguided students in the examination halls.

With enough effective control on the use of unfair means in the examinations the misguided students did invent other highly mischievous methods of cheating to get through. We were not aware how long this unique system of its own kind had been in operation. With much more tied and strict vigilance in all the processes and procedures as felt necessary, the concerned office surprisingly found certain strange and unique marks in a few answer scripts of different courses which used to get finally placed in the evaluation centre for marking by the experts. Thus, leaving no chance to the mischief noticed, all the scripts, about one lakh or so finally taken up for evaluation in the centre, were minutely examined and ultimately about 20 scripts were figured out with these strange marks. Accordingly the matter was handled by a High Power Committee of Syndicate under the Chairmanship of the then Vice Chancellor, among a few others, the Author as Member Secretary in the capacity of Controller of Examinations. The Committee found out a unique nature of a lengthy chain of people involved in this cheating technique innovated by the misguided elements. In fact soon after examination the answer scripts received from the examination halls are sent to the Code Officers who in turn put codes to the scripts after removing the Roll Nos. and then these scripts were placed before the centre for evaluation. It was actually this point in the chain at which the answer scripts with strange marks were taken out by daily wagers, engaged by Jammu University in the centre for menial service, to the concerned students who would in turn write the answers in the blank pages, intentionally left by the candidate concerned in the examination halls for the purpose, at the place suitable to them within shortest possible time so that the same could be placed back in the same bundle for evaluation on demand. Thus, Committee identified the cases and called all of the concerned involved face to face and recommended action under rules accordingly. Finally all those employees of the university involved were removed from the job and

the students found guilty were punished under rules to make it clear that such mischievous conduct is not acceptable.

Getting the result declared on time is highly critical factor in the examination system as it influences everything of the University System as a whole. It affects the career of the students in terms of their immediate next steps for admission to higher courses of study or applications for different jobs, the academic calendar of affiliated institutions, requisite number of teaching days available and thus opinion of all the stakeholders towards the system. Due to such a high sensitivity in the timely declaration of results several parties feeling aggrieved on account of various connected matters with the system find the timing of examinations and evaluation as most appropriate time for creating pressure by going on protest, strike and *Dharna*, etc. Though such an action is not more than just a black mail by a few power centres to settle scores with those in the driving chairs in the system yet non-settlement of the issues in time is equally a serious concern here. During this limited tenure of the Author, the experts from the Affiliated Colleges as Association of College Teachers declined to evaluate the scripts after examination and thus went on strike against the non-revision of their remuneration rates for different examination related work including marking the scripts. There was three step strategic action plan relevant to handle this issue and accordingly he took up first the matter in question with the higher authorities but it didn't satisfy them as the matter was pending for the last more than five years. In fact any financial matter in the University is very difficult to be resolved on time due to the involvement of Finance Department of the state. Even simple matters concerning education falling under the purview of this Department get abnormally delayed due to its bureaucratic work culture. Seeing such a trouble just at the nick of the time of evaluation, the office of Controller of Examination immediately set up evaluation centres in a few suitable bigger colleges in the neighbouring states as second strategic step, as a new experiment to face such a challenge. However by next time of evaluation the matter had been pushed quite forcefully and the rates were revised accordingly. Though it is good to be effective in resolving the issues on time but if resolved under pressures it is suicidal for the system as it has cascading effects and that is why the aforesaid second step was taken to give proper signal with support of all the concerned in the Examination Wing as a Team. Similarly, many a times even students used to go on strike boycotting the examination as per date sheet notified in advance, with very wrong notion that it is not they but somebody else would suffer with their strike. In fact it is student leaders under the influence of outside forces who would always remain keen to figure out a sensitive issue for strike so that they may be more visible publically fighting for the cause of student community for better future prospects in Politics. For example, once a group of students belonging to specific political party submitted representation for changing the date sheet, already notified much in advance as per norms, on the ground that it was clashing with their preparation for a competitive examination. This culture comes up due to inefficiency and ineffectiveness of the student unions themselves who do not work positively for real cause of quality education and betterment of student community but just for such small and easy issues as this kind of strategy of misguided elements gets strengthened further if accepted by the system without any justification, thus giving opportunities to other student groups to continue the chain of vicious cycles of strikes at the nick of examinations in the same way. Accordingly during the tenure of the Author such a situation used to be handled with some surprising and unexpected strategies like announcing the examination as per date sheet notified and providing another opportunity thereafter to those claimed to have been effected with the date sheet announced on account of reason as presented above which lead to appearance of all the students i.e. no student used to be found to have waited for second opportunity to appear and thus exposing the design of misguided elements raising silly issues.

Even during adverse work environment the examination reforms could be made possible with innovative alternatives in the given situation to the work with cooperation and coordination of the stakeholders. It is these ongoing reforms in examinations and evaluations which strengthen the objectives of the education system at all levels. These efforts are situation specific and thus cannot be stereotyped. ❑

Half a Century in National Service Scheme: Problems and Perspectives

H S Suresh*

Nurturing and tapping the time, talent and energy of young people for social and individual development has always been an integral component of the national planning process. It has long been recognized that 'human resource' is the only sustainable resource and any expenditure on education is perceived as an investment. The idea of involving student youth in some kind of community service was gaining momentum in the post independent India. There is an interesting incident connected to this.

Our first Shri Prime Minister Jawaharlal Nehru, insisted upon visiting a few refugee relief centers, in the aftermath of partition, in Delhi. He was much pained to see the un-hygienic conditions and the colossal waste of youth power in these camps. He advised the Minister for Rehabilitation, Gen. J. K. Bhonsle, to formulate a scheme to inculcate in the youth, a sense of discipline, organization and leadership and at instilling in them a national outlook. The scheme was to be a planned programme of national reconstruction and aimed at the balanced development of the youth. This is how the National Discipline Scheme came into being. It was fully funded by the Government of India. NDS instructors were appointed all over the Country. The scheme prescribed Drill and Physical Education, lectures on cultural heritage of the country and principles of co-operative work.

The NDS was reviewed in 1963 by Dr. H N Kunjru (Pandit Hridya Nath Kunzru, Member, U.G.C. 1953-66) Committee. The committee suggested for the amalgamation of ACC, NCC, Scouts and Guides, NDS and Physical Education. The outcome was the formation of National Fitness Corpse shortly called as NFC. All the NDS instructors appointed by the Union Ministry of Education, were attached to different schools in the country. 14 Regional Centres were established for the implementation of the scheme. The scheme was to be wound up by 1968 -69 or the States could continue the scheme and the operational cost would be met by the Center till the last person retires.

Earlier the 'Commission of University Education in India' (1948) headed by Dr. S Radhakrishnan,

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National Service Committee (1959) under the chairmanship of Dr. C D Deshmukh , (Chairman UGC, 1956-61) the Report on' National Service for the Youth' (1960) by Prof K G Saiyidain (Educationist, Padma Awardee) and the Education Commission (1966) headed by Dr. DS Kothari (Chairman UGC, 1961-73) –all these Committees recommended that some form of national or social service should be introduced and extended as widely as possible in the institutes of higher learning.

In May 1969, in the conference organized by the Ministry of Education and the UGC, the student representatives of the universities welcomed the proposal and declared that national service could be a powerful instrument of national integration. A new programme called National Service Scheme, for engaging students in the colleges in social service, was launched on 24 September, 1969 by the Government of India. The Regional Centers were given the responsibility of implementing the National Service Scheme in 1969. The Camp Commandant under NFC was re-designated as Deputy Program Adviser, Assistant Camp Commandant as Assistant Program Adviser and Instructors as Youth Officers and Youth Assistants.

Some Compelling Reason for Starting the NSS

The years around 1960 are distinctly marked as the years of youth unrest all over the world and India was not an exception to this. Youth's discontent with the family, college, politics, religion and the prevalent social systems, posed serious problems. Youth rebelled everywhere both where they were encouraged to do so and where they had been denied such a chance. The youth revolt attracted the attention of the educationists, administrators, politicians and religious leaders as never before.

The growing unemployment, anti Hindi agitation in the Southern States, the split in the national ruling party, the raise of regional Parties, violence on campus, withdrawal of compulsory NCC and the resultant partial vacuum created in co-curricular activities, use of campus youth for political gains - all these compelled the authorities to find a way out where students can be meaningfully engaged and their energies channelized in constructive activities.

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In the light of the earlier reports, Education Commission 1966 headed by Dr. Kothari recommended the Universities to develop NSS and National Sports Organization as an alternative to NCC. However NCC continued to be an optional choice. Thus NSS was created in 1969 in response to a variety of situations that was prevalent in the Country. It was to be administered by the Ministry of Education and Social Welfare. The Ministry of HRD was created in 1985. 15 years later, in the year 2000 Ministry of Youth Affairs and Sports was created under a Minister of State in independent charge. In the year 2008 Sports and Youth Affairs were separated as 2 Departments each under the charge of a Secretary. It should be noted that though the Ministry of Youth Affairs and Sports is a Nodal Ministry on the matters relating to youth, several other developmental ministries have a component of youth as facilitators or Catalytic agents. Presently the Department of Youth Affairs has 10 Schemes including NSS.

A recent order issued by the Govt. of India has re-structured all the ten schemes into three schemes namely *Rashtriya Yuava Sashaktikaran Karyakram* (National Youth Empowerment Scheme) *Rashtriya Seva Yojana* (National Service Scheme) and *Rajiv Gandhi Rashtriya Yuva Abhivrudhi Samstan* (Rajiv Gandhi National Institute for Youth Development).

While the remaining Nine Schemes were fully funded by the Central Govt. the NSS was the only Scheme where expenditure was required to be shared by the Central and State Govt. in the ratio 7:5. However with effect from 1st April, 2016 NSS has become a fully funded Central Sector Scheme.

Funding

At the present rate of allocation of volunteer strength and grants, the Government of India burden on NSS will be around Rs.174 crores @475 per volunteer per annum, for 36.58 lakh volunteers enrolled.

NSS State Liaison Cells are re- designated as State NSS Offices who through Public Fund Management System release NSS grants to the universities/directorates/colleges under Direct Beneficiary Transfer.

As these grants are released on 'meet the deficit' basis, living with problems has become a way of life in NSS. Accepting' voluntary poverty' and coping with 'deficit living' appears to be the hallmarks of NSS ! Perhaps this may also be the strength of NSS.

The history of revision of Grants per volunteer in the past fifty years is as given in Table-1.

Table-1: The Revision of Grants per Volunteer from 1986 to 2006

Regular Activities	10-day rural	residential camps
1986-87	Rs. 62 to 80	Rs. 10 to 15
1991-92	Rs. 80 to 120	Rs. 15 to 20
2000-01	Rs. 120 to 160	Rs. 20 to 30
2005-06	Rs. 160 to 250	Rs.30 to 45

Since the camping days have been reduced to 7 days from 2005 -2006 onwards the per diem allocation works out at Rs. 64.

This allocation of Rs. 64 per camper per day is inclusive of all other organizational expense connected with the camp. It is often said that National Service Scheme and Nehru Yuva Kendra are the two eyes of the Ministry of Youth Affairs. But the financial allocation made to NYKs for similar programmes by the Ministry is very much on higher side, in comparison with NSS.

Financial Allocation for Youth Leadership Training Camp (Two night halts) during 2019-20 is:

a) Boarding and Lodging @ 300/-for
   40 youth for 3 days   36,000-00

b) Travel expenses@150/-subject to actual for 40   6,000-00

c) Resource Material@200/- for 40 8000-00

d) Honararium for 9 speakers @ 1000/-   9,000-00

e) Organisational expenses   5,000-00

Total   **64,000-00**

The above data clearly show that the amount allocated for Youth Leadership Training Camp is Rs. 533.33 per head per day as against Rs. 64 for NSS.

Work Camps in NYK are akin to Special Camps in NSS. The NYKs provide Rs 208.33 Per Volunteer per day. As could be seen from the Table-1, it took 33 years to raise camping grant from Rs. 10 to Rs.45. The funding requires immediate upward revision and needs linking with the price index and inflation.

Administration of Allocation

From a mere 40,000 volunteers in 1969 to 36 lakh volunteers in 2019- is really a quantum jump . Nevertheless the pan India growth and expansion are uneven.

NSS allocation of strength for 2018–19 is nearly 36 lakh volunteers spread over 36 States and UT's The enrolment of volunteers in 22 states and UT's including Bihar (66,000) is below the national average of one lakh volunteers, whereas the four southern States share 33 per cent of total enrolment. If the figures of Maharashtra and UP are included, these 6 states together contribute 18 lakh volunteers that is half of total national enrolment. Out of 33.3 million students in the stream of Higher Education in the Country, the NSS coverage is 3.6 million students that is around little less than 11 per cent. The Census figures of General population 1991 is taken as basis for allocation in general and SC/ST categories. The Gross Enrolment Ratio in Higher Education for the youth in the age group 18 to 23 is around 23.6 per cent (1915 –16). The per student reach out of NSS will be higher only if enrolment allocation is made on the basis of General Enrolment Ratio in a particular State.

Management of Personnel

As per the Ministry's data base NSS is operational in all the 36 states and UT's, in 452 universities and 42 Plus Two Directorates. There are 32,653 Program Officers. While 36 out of 42 Directorates at the Plus Two level have full time NSS Programme Co-ordinators, at the University level, there are only seven full time Coordinators in Madhya Pradesh and one

in Chandigarh. All the remaining 383 Programme Coordinators in the country are functioning on part time basis. Universities in Maharashtra have a different practice. Under the State University Act it is mandatory for the Director of Student Welfare to look after the affairs of NSS also.

There are 14 NSS Regional Directorates which are essentially the field offices of the Ministry but here also as against 199 sanctioned post 104 staff are in position. There is a need to open new Regional Directorates based on enrolment and geographical accessibility. There is a need to consider delinking of University NSS administrative expenses from the pro-rata basis. The actual expenses need to be reimbursed by the Ministry for enabling appointment of full time Coordinators

Management of Training

The Ministry has sanctioned 26 Empanelled Training Institutes to impart training and orientation to NSS Officers of which 20 are fully functional. The number of Programme Officers trained during 2018-19 is 1193 Each ETI is mandated to conduct 20 programs with an intake of 35 Program Officers. Taking into account 700 PO's by each ETI the training capacity of 26 ETI's will be 18200 Program Officers.

The number of Program Officers this year would be about 39,000 in Government Funded Units including 7,200 in Self Financing Units. It is estimated that around 33 per cent of the Program Officers change every year due to completion of tenure or transfers etc. The responsibility of trainings 7200 PO's of SF units also rests with the ETI's. Considering the present work - load the ETI's are engaged 20 weeks a year in the training programs which may be enhanced to 30 weeks. If everything goes well the 26 ETI's will be able to meet our training needs.

Inter Ministry Co-ordination

The NSS is administered by the Ministry of Youth Affairs and Sports, whereas, the Educational Institutions and NSS Programme officers are governed and guided by the rules of University Grants Commission (UGC)/ University /Ministry of Education (MoE), erstwhile MHRD/Department of Collegiate /Higher Education Their pay masters are different. After all he who pays the piper calls the tune! It is in the fitness of things that NSS should be a part and parcel of the MoE.

It is worth noting that 28 of 36 State NSS Offices in the Country are located in the State Dept. of Higher Education to make the implementation hassle – free. The Govt. may consider allocating the subject of NSS

to the Ministry of HRD for effective implementation and the State Governments may follow the suit.

The Biggest Challenge Ahead

The federal system of Governance in India has opened up all possibilities of different States being ruled by different Political Parties with different Policies, Programs, Priorities and Agendas. It is often observed in our national politics, whenever and wherever Central Schemes are implemented in the States active co operation of the latter is lacking. (Example: Navodaya Vidyalayas) Political Governance has never remained the same in the country since the great split in Congress in 1969. Nothing explains this better than the observations of the then Government of Mysore, made in 1969, at the time of introducing NSS in the Country.

"A reading of the proposal very clearly reveals that the Central Government has decided to run the show. The Competence of the Centre to do so may be questioned. It is understood that the same organization that was running the National Fitness Corps will be entrusted with the responsibility of organizing the scheme …….. It is clear that all these will only amount to a serious in road into state Autonomy. The review of the program of training for the National Service enclosed to the proposal reveals that all the programs contemplated therein like rural re-construction or eradication of illiteracy pre-suppose active co-operation from the State Governmental Departments and Agencies. The experience with the National Fitness Corps which has now been put an end to clearly indicates that the Central Governments Competence in regard to the Implementation of Youth Program is only a myth. State Governmental Agencies are hostile to the extension of Central Governments line Agencies. In the circumstances there is a strong case for moving the centre to drop the idea of a centrally implemented program for the National Service Corps. The program should be if anything like a Centrally Sponsored Scheme not like a Central Scheme as it has been proposed. The Centre may advise and guide but should be persuaded not to implement and operate; the latter is the appropriate function of the State Government in terms of administrative feasibility and legal jurisdiction "(Towards a Youth Service in Mysore - Education and Youth Welfare Dept. 1970 pp35 – 36)

I have not attempted, in the foregoing chapters, to record the tremendous success achieved by our volunteers in NSS. They have earned social acceptance and credibility for both themselves and to the organization by their hard work and dedication.

New Education Policy and NSS

The New Education Policy 2020 justifiably calls upon the Institutes of Higher Education to 'engage faculty and students with local communities and with real world problems…. and function in collaborative, inclusive, cross disciplinary ways'.

The Policy Document also reiterates the need to create 'mechanisms 'for students social interface with organized activities. It is exactly where, we, in NSS, stand at the time of entering the fiftieth year of our humble existence and can contribute to the noble cause of NEP–2020. These and other provisions in NEP 2020, presumably, have given adequate scope and space for the NSS activities.

Times have rapidly changed. Many subjects of National importance and interest have been brought either under the Central or Concurrent List. NSS as a fully funded Central Sector Scheme has to tread cautiously the path of '*Sab ka Sath Sa ka Vikas*' in empowering the student youth to achieve their fullest potential as envisaged in the National Youth Policy 2014.

Conclusion

There has been a sea change since the inception of NSS in 1969. The explosion of information, communication and technology has brought about sweeping changes in the look and outlook of the community. The semester system leaves little elbow space for student's active participation in extra and co-curricular activities. Our NSS volunteers and Programme Officers work under tremendous pressure and handicap. Apart from the ideological contradiction between the volunteerism and beauracratic control, they have to bring together so many heterogeneous elements to make the programme workable. There is no reason to be pessimistic either for there is plenty of room for values. The enormous idealism, enthusiasm moral fibre, keenness to learn and willingness to volunteer that we see in NSS re- kindle our faith in them as the torch bearers of the society .

References

1. GoI (2006). N S S Manual, 2006 Ministry of Youth Affairs and Sports.
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3. GoI (2020). New Education Policy-2020 Ministry of Human Resource Development.
4. Sources from internet. ❑

Excellence in Education: A Key to Unlock the Potential of the Youth

D P Singh, Chairman, University Grants Commission, New Delhi delivered the Convocation Address at the 6th Convocation of University of Science and Technology, Meghalaya on 15th December, 2020. He said' "In whichever field you choose to work in future, establish your identity with your ability, talent, leadership and personality. Ensure your contribution to the overall development of the society and the nation as well. I wish you to imbibe these values on the occasion of this convocation. You should always make your parents, your teachers and your university proud with your work, behaviour and conduct." Excerpts

It is indeed a great pleasure and honour to be with you on the momentous occasion of the 6th Convocation of the University of Science and Technology. My Dear Students, the degrees that you are receiving today are a reward for the hard work that you have put in during the last few years. Today is a momentous and a memorable day for all the students, teachers and all parents. I extend my heartiest congratulations and best wishes to all the students who will be receiving their degrees for their academic performance and wish them all success in their future endeavours.

The University of Science and Technology Meghalaya (USTM), is one of the oldest Private Universities in the North East Region in the field of science and technology. The University is recognised by the professional councils for offering courses in Engineering and Management Courses, Law, Education and Pharmacy courses.

Friends, here I would like to mention that moving towards multidisciplinary universities and colleges, with more Higher Educational Institutions across India that offer medium of instruction in local/Indian languages is one of the major features of the recently announced National Education Policy (NEP, 2020). The Policy has a new and forward-looking vision for India's higher education system, quality being the mainstay. This policy envisions some pertinent changes to the current system which include among others:

- revamping curriculum, pedagogy, assessment, and student support
- reaffirming the integrity of faculty and institutional leadership positions
- establishment of a National Research Foundation
- academic and administrative autonomy to Higher Educational Institutions;
- "light but tight" regulation;
- increased access, equity, and inclusion

Friends, we all have witnessed the unprecedented global impact of the COVID-19 pandemic. In India too, Government has taken several measures to minimize the impact of COVID-19 and also various efforts are being taken on continuous basis to find domain specific intermittent solutions with a focus on long term solutions. The Ministry of Education, UGC and other educational organisations are taking number of measures to mitigate the impact of disruption on education with the help of technology.

A comprehensive initiative called PM eVIDYA was launched by the Government of India during this period which provides all measures related to digital/online/on-air education on a single platform to enable multi-mode access to education. This includes DIKSHA portal for providing quality e-content for school education in states/UTs: and QR coded Energized Textbooks, SWAYAM PRABHA DTH channel, SWAYAM Portal for MOOCs, E-PATHASHALA e content for blended learning and extensive use of Radio, Community radio and Podcast and special e-content for visually and hearing impaired developed on Digitally Accessible Information System (DAISY) and in sign language.

To make productive use of the lockdown period and minimize academic loss in the wake of the COVID-19 outbreak, UGC requested the academic community to ensure un-interrupted teaching and learning at home by leveraging the potential of ICT by accessing e-resources like SWAYAM Online courses, UG/PG MOOCs, e-PG Pathshala, SWAYAM Prabha, CEC-UGC YouTube Channel, National Digital Library, Shodhganga, e-shodh sindhu and Vidwan.

UGC has notified integrated ODL and Online Regulations. Realizing it as the need of the hour, the online component in conventional universities from the present 20% to 40% is being facilitated through amendments in SWAYAM regulations.

COVID-19 has taught us many lessons and with social distancing being the new norm, technology enabled education will play big role in ensuring timely completion of academics and for which we all should be putting efforts in terms of preparedness and effectiveness.

The USTM, with its good infrastructural facilities and a congenial atmosphere is marching ahead to scale new heights. I am told that the University has been regularly inviting experts from academia, industry and national research organisations to enable students to get the much needed exposure of the working environment, skill sets required and available opportunities. Engaging students to participate extensively in workshops, seminars, internships, industry visits has provided them first-hand experience and knowledge about the work modalities of different institutions of excellence and industries. Also, this has helped the students realise their dreams and aspirations.

USTM students are also involved in community engagement activities which helps them to learn to work for the community at large and thereby develop a sense of belongingness to our great Nation. Besides this, students need to be equipped with life skills focusing on communication, professional, leadership and management skills and adherence to universal human values.

I am confident that USTM will follow its vision in making it one of the best destinations of teaching-learning by 2030 through quality education and research, its mission of contributing to society by nurturing leaders and unlocking the potential of the youth through excellence in education, innovation and entrepreneurship and adhering to the core values of being competitive and progressive, promoting excellence, creativity, compassion and inclusivity.

Dear students, take inspiration from the work and contributions of some of our great visionaries like Swami Vivekananda, Father of the Nation Mahatma Gandhi, Rabindranath Tagore, Mahamana Pandit Madan Mohan Malaviya, Dr. Sarvepalli Radhakrishnan, former President Dr. A.P.J. Abdul Kalam and other great personalities. As Steve Jobs has said and I quote - "Your work is going to fill a large part of your life, and the only way to be truly satisfied is to do what you believe is great work. And the only way to do great work is to love what you do. If you haven't found it yet, keep looking".

Dear Students, our former President and great scientist Dr APJ Abdul Kalam while interacting with young friends often said and I quote- Education gives you wings to fly. He used to share one poem which, I would like to share with you on this occasion:

I am born with potential.
I am born with goodness and trust. I am born with ideas and dreams.
I am born with greatness.
I am born with confidence. I am born with wings.
I am not meant for crawling,
So I won't, I have wings, I will fly, fly and fly"

With these words, I once again congratulate all the degree holders and wish you a bright and prosperous future. In whichever field you choose to work in future, establish your identity with your ability, talent, leadership and personality. Ensure your contribution to the overall development of the society and the nation as well. I wish you to imbibe these values on the occasion of this convocation. You should always make your parents, your teachers and your university proud with your work, behaviour and conduct.

Thank you.
Jai Hind!   ❑

CAMPUS NEWS

New Happenings at Amity University, Jaipur

Some of the latest events which were organized by the Amity University, Jaipur, Rajasthan, are presented here.

Celebration of World Tourism Day

The 'World Tourism Day' was digitally celebrated by the Amity School of Hospitality, recently. Mr. S Gaekilan, Hospitality Industry Expert, Malaysia said, "Magnificence of Indian Rural Tourism depicted through Virtual Tour is an eye-popping experience." He added that the miracles of the virtual tour showcased by the students at Amity School of Hospitality portrayed the significance and uniqueness of Indian cultural heritage in a very incredible manner. Prof. (Dr) Amit Jain, Pro-Vice Chancellor, Amity University Rajasthan asserted that this year the observance of World Tourism day was virtual and the enabling capacity of the internet has made it possible for the virtual tours to be showcased directly on the screen. Prof Jain said that tourism has a social, cultural, political as well as an economic significance and it plays an important role in comprehending the culture, traditions, and lifestyle of each place.

The event witnessed the various colors of Indian Tourism by depicting the Tourism Logos of different states like Assam, Gujarat, Bengal, Arunachal Pradesh, Madhya Pradesh, Manipur, Mizoram, Jammu & Kashmir, Uttarakhand. Saumya Kapil, a Tourism Student, Amity University Rajasthan with a deep interest in art exhibited her talent by painting every State and Union Territory's incredible Tourism Logos with watercolor and unveiled the symbolism and the touch of culture that these tourism logos demonstrate of various states, for instance, the rhinoceros and tea leaves in Assam Tourism logo signifies 2000+ one Horned rhinos of Assam, and its largest tea plantations. The Sun in Arunachal Pradesh tourism logo signifies the area receiving the first sunrise in the country. Depiction of Lion in Tourism logo of Gujarat signifies 600+ Asiatic lions of Gir National Park. Open hand structure in the Chandigarh Tourism logo is the symbol of Chandigarh government.

Tiger in Madhya Pradesh Tourism logo signifies the highest density of royal Bengal Tigers in Bhandhavgarh national park and the existence of Sangai in Manipur is depicted in the Tourism logo of Manipur. The famous Cheraw Dance is shown in Mizoram Tourism logo and the symbol of War Dance is reflected in the Nagaland tourism logo. The Shikara is the symbol of Jammu and Kashmir Tourism logo and the Devnagri letter for 'U' is the symbol for Uttarakhand Tourism logo. The varied tourism logos represented the cultural flavor of the different states of India. Addressing the event, Prof. Sanjeeb Pal, Director, Amity School of Hospitality said, "With the rich heritage and myriad attractions, India's travel and tourism industry has tremendous career opportunities and technological innovations have been a boon in this direction." The celebration of the day folded with the travel story contest.

National Essay Writing Competition-2020

The Online National Essay Writing Competition-2020 was organized by the Amity Law School, Amity University, Rajasthan. The competition was open to all law and non- law students of Undergraduate and Postgraduate Courses in India. Almost 84 participants from various Universities and Institutions across the country registered and showed their keen interest by submitting their essays.

In the prevailing worldwide pandemic situation, the initiative taken by Amity Law School, with an aim to promote legal research was intended to provide a platform to the law students across the country to showcase their research acumen accompanied by their writing skills and abilities. The topics of the Competition were very contemporary keeping into consideration the present glaring legal issues and were very suitable for the students to utilize their time productively during the pandemic times. The topics were 'Force Majeure in COVID-19 Affecting Companies and MSMEs', 'Domestic Violence Surge in COVID-19', 'Effect of Media Trial on Judicial Trial', 'Farmers Act 2020- Who Gains and Who Loses'? and 'International Arbitration Standards-Acceptable or Not?'.

The Prizes of the Competition comprised cash money of Rs. 4000/-, 3500/-, 3000/- for the First, Second and Third Prize Winner, respectively. Shortlisted Essays were sent to a jury of Eminent Academicians and practitioners. Mishel Modi and Mr. Nikhil Purohit, Amity Law School, Amity University, Rajasthan secured first position followed by Jeny Augastian and Munnu Bridget Sebastine, Mahatma Gandhi University, Kerala securing second position and lastly, Sukhmanjyot Kaur, Punjab University Regional Centre, Ludhiana bagging third position. Pro-Vice Chancellor congratulated all the winners and the participants.

Webinar on World Mental Health Day

The Webinar on 'World Mental Health Day' was organized by the Amity Institute of Behavioral and Allied Sciences to discuss the importance and issues related to Mental Health for All. The guest speakers who graced the event were Dr Ashutosh Srivastava, Founder and CEO of Psyuni India, Dr Pratibha Anand Singh, Director, KIPBM Clinical Psychologists, Dr Sandeep Panchal, Sports Psychologist at Sports Authority of India.

Dr Ashutosh Srivastava spoke about the challenges of the present times and how each one of us must be attuned to face the psychological issues that may grip people at this critical hour of pandemic. Dr Pratibha Anand Singh took the participants through an experiential journey to understand the grave issue of stress and discussed about the importance of having meaningful relationships and social support which is a very healthy and effective coping mechanism. She also discussed the issues of adolescent mental health and importance of therapy and counseling. Dr Sandeep Panchal, Sports Psychologist discussed the importance of sports as a road to a healthy mental state especially in times like these when clutching on to every ray of hope is important to keep oneself healthy both physically and mentally. The students were highly benefitted by the valuable insights of the speakers with varied expertise and learnt about the tips of coping strategies to deal with the prevailing times and carried with them the message of 'mental health for all' as is intended by WHO and is also the need of the hour.

Online Faculty Development Programme

One-week Online Faculty Development Programme on 'Basics of Machine Learning: The Mathematical Inside' is being organized by the Department of Computer Applications, Sikkim University, Gangtok, Sikkim during March 08-12, 2021. The aim of the workshop is to provide theoretical insights on different aspects of Machine learning models. The workshop will also provide a platform to learn from the scratch the mathematical background behind the tool. This will also provide a platform to learn from expert as regards the current challenges in developing strategies and tools to address the issues pertaining to real life expert system development.

Machine learning is one of the technological advancements to making the machine or computer to take decisions like human. It's one of the booming attractions for new generation technology lovers. It is so popular that the machine learning being applied successfully across different domains including Biology, Physics, Chemistry, Medicine, Management and many more. Machine learning has become ubiquitous in modern society. The Course Content of the programme are:

- Basics of Machine Learning.
- Linear Models (Regression and Logistic Regression).
- Artificial Neural Network.
- Deep Learning Models: CNN, RNN, Advanced Models.
- Support Vector Machines.

For further details, contact Mr. Swarup Roy, Head, Department of Computer Applications, Sikkim University, Tadong, Gangtok,-737102 (Sikkim). E-mail: *sroy01@cus.ac.in*. For updates, log on to: *www.cus.ac.in*.

Workshop on Global Artificial Intelligence Narratives in India

A two-day Workshop on 'Global Artificial Intelligence Narratives in India' is being jointly organized by the School of Arts and Sciences, Ahmedabad University, Ahmedabad (Gujarat) and the Leverhulme Centre for the Future of Intelligence (CFI) at Cambridge University during March 11-12, 2021.

Perceptions of Artificial Intelligence (AI) vary across cultural contexts. Narratives, ranging from fiction to non-fiction, play a crucial role in forming ideas and sometimes public policy. The workshop

aims to connect scholars, technologists, and artists for collaborative rethinking of the impact of AI in India, South Asia, and globally. The topics of the event are:

- Artificial Intelligence in Indian Science Fiction and Imagination.
- History and Philosophy of Artificial Intelligence Technology in India.
- Conceptual Perspectives on UIDAI and Aadhaar. and

- Responses to Artificial Intelligence and Science Fact-Fiction in Hindi, Malayalam, and Bengali Literature.

For further details, contact Organising Secretary, School of Arts and Sciences, Ahmedabad University, Commerce Six Roads, Navrangpura, Ahmedabad-380009 (Gujarat), E-mail: *info@ ahduni.edu.in.* For updates, log on to: *https:// ahduni.edu.in/events/*

AIU NEWS

National Workshop on Research Methodology

A three-day National Workshop on Research Methodology on the theme 'How to Write an Impactful Research Proposal' was organised by the Association of Indian Universities (AIU), New Delhi during December 17-19, 2019. The event was hosted by KIIT School of Law, KIIT University, Bhubaneswar, Odsha. Dr Amarendra Pani, Joint Director and Head, Research Division, Association of Indian Universities was the Chief Convener of the event which was coordinated by Dr Usha Rai Negi, Assistant Director, Research, AIU, New Delhi. From KIIT School, Prof Subhash Chandra Raina, Director, KIIT School of Law, KIIT University was the Convener of the event and the event was coordinated by Mr. Yogesh Mishra, Assistant Professor, KIIT School of Law, KIIT University. Around 60 participants from various universities and other Higher Education Institutions in the country participated in the event.

The Inaugural Ceremony of the workshop was started with welcome address delivered by Prof Subhash Chandra Raina. Prof Vinay Kumar Srivastava, Director, Anthropology Survey of India delivered the Inaugural address. The gathering was also addressed by Dr. Sasmita Samanta, Pro Vice Chancellor, KIIT, Prof. Arvind Tiwari, Dean, School of Law, Rights and Constitutional Governance, Tata Institute of Social Science. Prof. Amar Pal Singh, Dean University School of Law and Legal Studies, Prof V D Sebastian, Eminent and Distinguished Prof., former Dean, Faculty of Law, Cochin University, Kochi, Kerala.

In his introductory remarks, Dr. S C Raina provided a background of the workshop. He informed the participants that such workshops are part of the capacity building programme of AIU to improve the quality of higher education research. He pointed out the identification of problem in any research works is the central guiding principle that will affect the overall quality of research works to be carried out. He observed that National Workshop on Research Methodology is a good initiative by the Association of Indian Universities which provides a platform to the students to present their ideas through research proposals and projects.

Prof. Sasmita Samanta appreciated the initiative taken by both School of Law and Association of Indian Universities in organizing the National Workshop on Research Methodology. She also emphasized upon the importance of research in the academic development of students and academicians.

In the first Technical Session, Prof Vinay Kumar Srivastav spoke on 'Characteristics of Qualitative Research Proposal'. He said that research topic should be specific. Quantitative and Qualitative research- how to handle numbers and how to handle words. Research design is tentative, it can be modified. He said that observation means 'conscious sensing', making use of all the senses. Never engage in academic fraud, no plagiarism, and no subject of research should be harmed. Spread your writing-write every time. At a time engage in one project only. Write 200-300 words every day. Competence over language (suitable expressions). Further, after completion of research keep it aside, don't give it

for publication instantly. Always keep the reader in mind. Hypothesis may be really enchanting. Proposition will hold true till the time researcher finds negative evidences.

In the Second Technical Session, Prof Arvind Tiwari spoke on the topic 'Development of Tools for Data analysis'. He said that data collection tools are quantitative data- interview schedule, questionnaire and qualitative data- case study. He advised to use tools according to research question. By emphasizing more on Literature review he critically analysed the literature review. He also shared a study on non- registration of crimes in which problems and solutions, rights of victims- fair trial, granting bail. objectives, method of study, sampling, challenges or limitations of the study, key findings of the study were discussed.

In the third Technical Session, Prof Amar Pal Singh delivered a talk on 'Plagiarism in Research'. He elaborated the concept of plagiarism and differentiation of plagiarism with concepts like theft, fraud, copyright, etc. by giving illustrations. Concept of self-plagiarism and ways of avoiding plagiarism. He emphatically shared that plagiarism as an umbrella structure will not serve the purpose, we need to create separate terminologies, concepts to solve the problem such as the permissible and impermissible limit of plagiarism, UGC regulations and policy instructions needs to be followed strictly to avoid the issues of plagiarism. He was of the view that if the researcher is aware and conscious then he will always avoid plagiarism.

In the first technical session on second day, Prof Khushal Vibhute spoke on 'Use of Citations and its Various Methods'. He stated that research means finding something in systematic way, scientific inquiry into a fact or repeated frequent search. Objectivity, logic, universality and rationale of the topic need to be spelt out clearly for giving a desired direction to the investigation. Systematic investigation of a legal fact' increases the sum of knowledge of law. He said that a system of law may be perceived in three principal ways- normative system, behavioural system, an instrument of social control and change. Further, law is not an insular discipline. Scope of legal research depends on the contextual and conceptual variant of law.

Are there any 'gap' and ambiguities in the statutory law and what have been their effects in achieving the legislative intent? Importance of legal research lies in identifying those gaps and ambiguities, Dr Kushal observed.

The Second technical session of day two was addressed by Prof Rabi Narayan Subudhi who delivered a talk on Qualitative and Quantitative Research. He explained the concept of research in question form: why, what and how. Making research interesting, memorable and publishable. Research as self-motivated, self-satisfying, research for knowledge creation, etc. were discussed by him. Criticality of data is considered as building blocks of research. In the talk, he touched the points like Quantitative versus Qualitative data, Experimental vs. Observational data. Collected vs. Reported data, Random vs. Purposive data. Data specific to one's research objectives. Is it possible to measure research? Measuring research strength of an institute. All these matters were addressed by him and significantly explained.

The third session was conducted by Dr. Ishwar Chandra Naik who spoke on 'Significance of Objectives and How to Develop Hypothesis'. He highlighted some key areas like steps for preparing research proposal. Why it is important to frame the research objectives? The objectives in a study provide a clear direction. Objectives help to avoid any diversion from the topic. Objectives ease the understanding of the research by the target audience.

On day three, the session was stated with the address of Prof Shashikala Gurpur. She addressed the gathering on the topic of 'Finding of Research Problem, Review of Literature and Law Reform Research'. She highlighted some of the key areas like spotting a good research problem. What is literature review? - survey, documentation, existing published and unpublished work. Larger picture of legal research is justice system. Good review characteristics- sufficiency, adequate focus and strategy and valid findings. Need for literature review- to cover 'uncovered' areas, to gain sufficient practical and theoretical knowledge. Spotting a research problem. Research problem: Centre piece and attributes. Components, check list for a critical

review, discussion, review, reference of research. Law reform research template.

The next session was addressed by Prof. Alok Kumar Chakrawal, and he spoke on 'Sampling and Its Uses. He stated the importance and relevance of Research Design: sampling design, observational design, statistical design, operational design. The points covered in the talk of Prof Chakrawal are - How to choose Universe, Population, Sample. He also provided a detailed explanation on probability and non- probability sampling, complex random sampling design, stratified sampling - how should items be selected from each stratum? Sequential sampling, etc.

In the last session of day three was taken up by Prof Amarendra Panigrahi who discussed on 'Mechanism and Techniques of Research'. He stated as to why we are engaged into the task of researching? Research is a mechanism to help others, enriches the repository of knowledge. Prof Panigrahi also discussed various types of research and methodology to conduct these researches.

During Valedictory Function, Dr. Jnyana Ranjan Mohanty, Registrar, KIIT University, Bhubaneswar was the Chief Guest. Prof. Sudarshan Nanda, Prof. of Eminence and Research Chair, KIIT University also addressed the issue and shared the importance of research and how one has to conduct it in order to have academic development.

Convener, Dr. Amarendra Pani, Joint Director, Research Division, AIU was the Guest of Honour in the valedictory function. In his address, Dr Pani observed that Research is an activity where intellectual eliticism matters. Research needs seriousness, passion and commitment. He explained the distinction between degree-oriented research and research contributing to the repository of knowledge and enriching the theories. Dr Pani emphasized that the knowledge era of twenty first century necessitates that research should be given priority. The knowledge created by research must address the challenges our societies are facing today. He concluded that improving the research activities and making robust contribution to the arena of knowledge India can regain its past glory of being *Viswaguru.*

The Valedictory Session was concluded with a Vote of Thanks by Mr. Yogesh Mishra, Assistant Professor, KIIT School of Law, KIIT University.

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Weekly E- Essay Series of Scholarly Articles on Reimagining Indian Universities

A 'Weekly E-Essay Series of Scholarly Articles on 'Reimagining Indian Universities' was launched on AIU Website on 15th May, 2020 as a part of the change which AIU seeks to bring about in the academics in this day and age of COVID-19. The essays scheduled for release in this series are in a broad range of fields covering a variety of topics pertinent to 'Reimagining Indian Universities' received from distinguished experts and authorities in the area of Indian higher education included in the Book 'Reimagining Indian Universities' edited by Dr. Ms.Pankaj Mittal and Dr Sistla Rama Devi Pani. In the series, every week one scholarly article written by an erudite scholar of Indian academia is being released on the AIU Website. The series was initiated with the essay of Prof Bhushan Patwardhan, Vice Chairman, University Grants Commission, India on 15th May, 2020.

The essays are unique, enlightening and inspirational. Those who are interested in reading these essays may browse AIU Website: www.aiu. ac.in. ❑

THESES OF THE MONTH

SCIENCE & TECHNOLOGY
A List of doctoral theses accepted by Indian Universities
(Notifications received in AIU during the month of December 2020- January 2021)

AGRICULTURAL & VETERINARY SCIENCES

Agricultural Economics

1. Gurlal Singh. **Changing income and employment structure of agricultural labour in Punjab**. Department of Agricultural Economics, Punjab Agricultural University, Ludhiana.

Biotechnology

1. Gurwinder Kaur. **Mapping and transfer of Genes/QTLs for nematode (*Meloidogyne graminicola*) resistance from *oryza glaberrima into oryza sativa* L.** Department of Biotechnology, Punjab Agricultural University, Ludhiana.

2. Modi, Krunal Govindbhai. **Isolation and characterization of bacillus consortia for plant growth promotion in rice (*Oryza sativa* L)**. (Dr. Sanjay Jha), Department of Plant Molecular Biology and Biotechnology, Navsari Agricultural University, Navsari.

3. Padhiyar, Shitalben Maldebhai. **Transcriptome sequencing and metabolomic characterization of barnyard millet (*Echinochloa frumentacea* L) to discover putative genes involved in spike development and its neutraceutical properties**. (Dr. Rukam S Tomar), Department of Plant Molecular Biology and Biotechnology, Junagadh Agricultural University, Junagadh.

Entomology

1. Simranjit Kaur. **Influence of insecticides on growth and development of Bemisia tabaci (Gennadius) infesting cotton**. Department of Entomology, Punjab Agricultural University, Ludhiana.

Floriculture

1. Gurjar, Rashmikant Anantray. **Effect of land configuration and nutrients management on growth, quality and yield of chrysanthemum (*Dendrathema grandiflora Tzvelev*) var thai chen queen**. (Dr. S L Chawla), Department of Floriculture and Landscape Architecture, Navsari Agricultural University, Navsari.

Food Science & Technology

1. Panchal, Rajeshkumar Kishorkumar. **Effect of foliar application of silicon on growth, yield and quality of Banana (*Musa paradisiaca* L) c v grand nain**. (Dr. S J Patil), Department of Floriculture and Landscape Architecture, Navsari Agricultural University, Navsari.

2. Patel, Prasulkumar Rameshbhai. **Effect of nitrogen and bio fertilizers on growth, yield and quality of banana (*Musa paradisiaca* L) cv grand nain**. (Dr. B N Patel), Department of Fruit Science, Navsari Agricultural University, Navsari.

3. Shilpa. **Characterization of selected cereals and pulses for the development of functional foods**. (Dr. Sangita Sood), Department of Food Science Nutrition and Technology, CSK Himachal Pradesh Krishi Vishvavidyalaya, Palampur.

Veterinary Science

1. Kathiriya, Jaysukh Bachubhai. **Seroepidemiology, cultural and molecular detection of Brucella infection in ruminants of South Saurashtra Region of Gujarat**. (Dr. N M Shah), Department of Veterinary Microbiology, Junagadh Agricultural University, Junagadh.

2. Padheriya, Yogeshkumar Dharamshibhai. **Effect of photoperiod on production, blood biochemical parameters and hormonal assay in Surti Goats**. (Dr. R R Singh), Department of Livestock Production and Management, Navsari Agricultural University, Navsari.

3. Parmar, Saurabhkumar Meghalal. **Use of cardiac biomarkers and echocardiography to diagnose dilated cardiomyopathy in dogs**. (Dr. M D Patel), Department of Veterinary Medicine, Navsari Agricultural University, Navsari.

4. Sharma, Akshay. **Efficacy of some ovulation synchronization protocols in dairy cows diagnosed with post-partum sub-clinical endometritis**. (Dr. Madhumeet Singh), Department of Veterinary Gynaecology and Obstetrics, CSK Himachal Pradesh Krishi Vishvavidyalaya, Palampur.

5. Sharma, Hitendrabhai Chandubhai. **Efficacy of various estrus synchronization protocols on reproductive peridata of surti does**. (Dr. C T Khasatiya), Department of Animal Reproduction, Gynaecology and Obstetrics, Navsari Agricultural University, Navsari.

6. Vaghajibhai, Mavadiya Sureshkumar. **Sero-molecular diagnosis of equine piroplasmosis in and**

around **Navsari District**. (Dr. R M Patel), Department of Veterinary Medicine, Navsari Agricultural University, Navsari.

BIOLOGICAL SCIENCES

Biochemistry

1. Kalita, Jupitara. **Structure-function relationship of a glutathione S-transferase from the liver fluke-*Fasciola gigantica***. (Dr. Timir Tripathi), Department of Biochemistry, North Eastern Hill University, Shillong.

Biotechnology

1. Sahitya, U Lakshmi. **Identification of aquaporin gene family and QTLS for drought tolerance using linkage mapping approach in chilli (Capsicum annuum L)**. (Dr. S R Krishna Motukuri), Department of Biotechnology, Koneru Lakshmaiah Education Foundation, Guntur.

Botany

1. Gupta, Dipinte. **Development of efficient synthetic promoters derived from plant pararetroviruses**. (Dr. Rajiv Ranjan), Department of Botany, Dayalbagh Educational Institute, Agra.

2. Majaw, Sophie Phanri. **Identification of rhizospheric fungal isolates for biocontrol of phytopathogens of *Zingiber officinale Rosc***. (Prof. H Kayang), Department of Botany, North Eastern Hill University, Shillong.

3. Marak, Manna Chibra N. **Studies on fungal endophytes associated with *Solanum tuberosum* L for antagonistic potential against soil borne pathogens**. (Prof. H Kayang), Department of Botany, North Eastern Hill University, Shillong.

4. Narah, Deji. **Studies on the floristic diversity of angiospermic species of Dhemaji District, Assam**. (Prof. Yogendra Kumar), Department of Botany, North Eastern Hill University, Shillong.

5. Pande, Jyoti Ashok. **Evaluation of various secondary metabolites and biological activity of some medicinal plants with regards to specific nakshatras**. (Dr. Sumitra Chandra), Department of Botany, Saurashtra University, Rajkot.

6. Sapra, Nikita Pramodkumar. **Evaluative studies on *in vitro* and *in silico* analysis of jasminum sp**. (Dr. Himanshu Pandya), Department of Botany, Gujarat University, Ahmedabad.

7. Saxena, Richa. **Synthesis of silver nanoparticles using the selected fruit peels and testing their antibacterial effectiveness against urinary tract infection caused by Escherichia Coli**. (Prof. J N Srivastava), Department of Botany, Dayalbagh Educational Institute, Agra.

8. Singh, Anshu. **Biosynthesis of silver nanoparticles (AgNPs) using plant material as nano-drug against pathogenic bacteria**. (Prof. J.N. Srivastava), Department of Botany, Dayalbagh Educational Institute, Agra.

9. Sonal. **A study of virus infecting clerodendrum inerme (l.) gaertn exhibiting mosaic symptoms in Agra region**. (Dr Sharmita Gupta), Department of Botany, Dayalbagh Educational Institute, Agra.

10. Teg Bahadur Singh. **Isolation, characterization and evaluation of growth potential of plant growth promoting rhizobacteria from agricultural fields in Agra**. (Prof. D Prem Kumar), Department of Botany, Dayalbagh Educational Institute, Agra.

11. Tiwary, Raghuvar. **Morphometric, genetic and phytochemical variabilities among natural populations of *aconitum* species across environmental gradients in Northeastern India**. (Prof. S K Barik and Prof. N K Chrungoo), Department of Botany, North Eastern Hill University, Shillong.

12. Verma, Nitesh. **Microbial degradation of polyethylene carry bags of low density**. (Dr. Sharmita Gupta), Department of Botany, Dayalbagh Educational Institute, Agra.

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C. **CHEQUES OF ANY KIND ARE <u>NOT</u> ACCEPTABLE.**

D. The **requisite amount could also be transferred for its direct remittance to our Saving Account via NEFT/RTGS using the following details :**

1	**Bank Account No.**	**0158101000975 (Saving)**
2	Beneficiary Name	**Association of Indian Universities**
3	Address	16, Comrade Indrajit Gupta Marg New Delhi – 110 002
4	Bank & Branch Name	CANARA BANK, DDU MARG
5	Bank's Address	"URDU GHAR" 212, Deen Dayal Upadhayaya Marg New Delhi – 110 002
6	MICR Code	110015005
7	Branch Code	0158
8	IFSC Code	CNRB 0000158
9	PAN NO.	AAATA0407F
10	Contact No.& E-mail ID	(011) 23230059 Extn. 208/213 **(M)** 09818621761 **E-Mail ID : publicationsales@aiu.ac.in**

NOTE : In case of **Cash Deposit** and **Transfer via NEFT/RTGS/ECS**, the proof of payment in the form **Counterfoil of the Cash Deposit Slip** and the **NEFT UTR Number** may be communicated IMMEDIATELY BY MAIL for linking and crediting of the same against the respective Order/ Bill, please.

- **THE HANDBOOK WILL BE AVAILBLE ON CASH BASIS FROM THE SALES COUNTER OF THIS OFFICE.**

Please send Pre-paid Order to :

The Under Secretary
Publication & Sales Division
ASSOCIATION OF INDIAN UNIVERSITIES
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