On-Demand Examination System
An Innovative Scheme of Examination in IGNOU

Background

Evaluation and assessment of the performance of the learners is one of the important components of any teaching-learning system. The Indira Gandhi National Open University (IGNOU) evaluates the performance of its learners through Tutor Marked Assignments, project works and the Term End Examinations. As one of the learner friendly features, University has been conducting term end examinations twice in a year. But there are many students of IGNOU who find it difficult to take leaves for so many days continuously to appear in the term end examinations and also many other students appear in the term-end examination without sufficient preparations and hence fail. They will have to wait for six months for the next exam, otherwise. Because of this they might take more time to complete a particular programme and also it may lead to lower pass percentage in different programmes.

Need of the Innovation

With the advancement of ICT not only the instructional system, but the examination system is also being influenced to a great extent. In Open and Distance Learning (ODL), the examination On-Demand has become the need of the hour making ODL more flexible and learner friendly. As most of the distance learners in Higher Education are working people; they normally do not get leave from their organizations for several days at a stretch for term end examinations, so fail to complete their courses in stipulated time limit. The examinations being institute centric are conducted in a fixed time frame and therefore many of the students appear without proper preparations which lead to the lower percentage of results in many subjects. Moreover, the faculty is, all the time, engaged in making arrangements for term end examinations which takes too much of the valuable time of faculty which otherwise they could have effectively devoted to concentrate on academic matters.
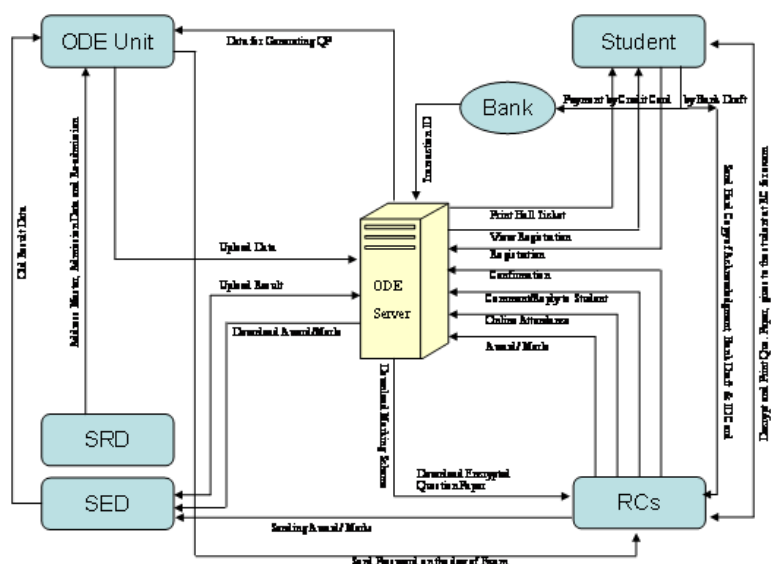
These genuine problems prompted the NCIDE to develop a comprehensive ICT enabled system of examination on-demand which provides the learners an opportunity to appear as per their preparation and convenience.

Description of the Innovation

Keeping in view of such problems of learners, the National Centre for Innovations in Distance Education (NCIDE) in IGNOU has brought out a more flexible and learner friendly scheme of "On-Demand Examination". In this scheme of examination the students who have completed the period of minimum study hours and submitted all their assignments can choose the date of examination as per their convenience and preparation and need not to wait for six months for term end examinations. This is a boon for the distance learners particularly for those who are working somewhere and find it difficult to appear in all courses in one go for so many days continuously as per the schedule of the term end examinations.

It has basically three modules :

- **Question Paper Module** which can generate instantaneously any number of unique question papers of comparable difficulty level as per the design and blueprint from the digital question bank,

- **On-line Registration Module** using which the eligible students of IGNOU can register for on-demand exam, anytime from anywhere and select date and exam centre from the given list as per their convenience, and

- **Regional Centre Module** which keeps the exam centres (here Regional Centers) updated with the records of students registered for OD-Exam at their centres with date, subject, names of students, etc., provides them attendance sheet, blank award lists and delivers them the requisite number of question papers online just before the exam and marking schemes a day after. There is also a facility using which the RC can send attendance on-line. An architect design of the On-demand Examination System is given in the following figure :
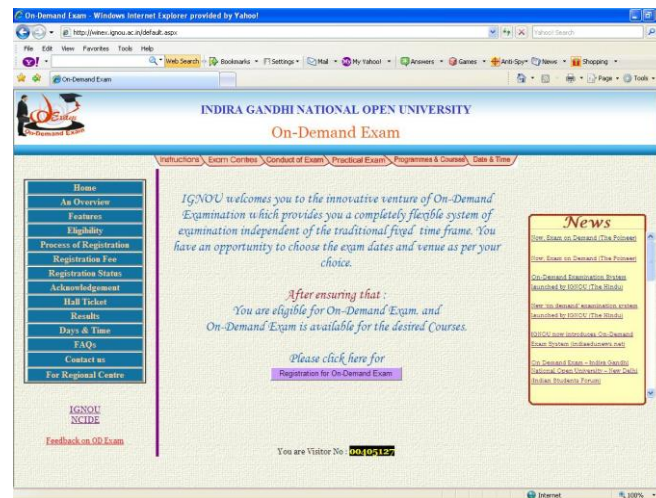

All these modules have multilayered security features, well defined accessibility and provisions for scalability. ICT enabled monitoring of the conduct of on-demand exam under web camera surveillance ensures fair and smooth conduct of OD-Exam.

The basic objectives of this scheme are :

- to provide opportunity to the learners to appear in the examination whenever they feel prepared for examination after completing the minimum eligibility criteria,

- to reduce the possibility of malpractices in the examinations as each student may get different sets of question papers,

- to minimize the fear of failure in the examination and thus saving the distance learners from frustration and depression,

- to improve the pass percentage of students in the university by giving chance to really motivated and prepared students to appear in the examination as per their convenience, and

- to reduce the load on the term end examinations of the University.

The target group for the scheme of on-demand examination includes all the learners of IGNOU all over the world. The facility was made available through 18 RCs of IGNOU in different parts of the country.

Innovative Features of the Innovation

The innovative features of the On-Demand Examination System are as given below :

- It is a completely flexible and ICT enabled system of examination independent of the traditional fixed time frame, the student need not to wait for the six monthly examination.

- The registration for On-Demand Exam is completely on-line. After ensuring the eligibility and receipt of registration fee, Hall Ticket indicating date & time is issued on-line.

- There is inbuilt mechanism for checking the authenticity of the student's data, eligibility for the exam, validity of the admission etc. which insures that only genuine learners are benefitted.

- It makes use of ICT to solve problems which arise due to human limitations; it makes possible instant generation of parallel question papers, and facilitates authorised data entry at different points, leaving no chance for human error. It reforms the system of evaluation without abrupt changes.

- The entire scheme of ICT Enabled examination on-Demand is an objective, reliable, valid and practical system. It is safe and secured and truly transparent.

- It is not only simple and user friendly, but it is also cost effective and saves time and effort in setting question papers, in data base management and in data transfer.

- It is capable of generating individualized question papers on the day of examination picking up the questions randomly from the question bank as per the blue print and design. Though each student may get a unique question paper, the various question papers are of comparable difficulty level.

- The Question Papers are generated on the day of on-demand exam in encrypted form and they are made available online to the RCs. The Question Papers can be decrypted by the authorized person using a specific decryption software and unique key generated along with the question paper which is different for different RCs.

- The decrypted question papers cannot be saved in the hard disc of any system.

- Each question paper has unique bar code and a unique question paper code having date and time of generation with the help of which students' question paper and answer sheet can be matched at any later instant, if required

- Marking scheme for each question paper is also generated along with the question paper which can be accessed only after 24 hours.

- It has an inbuilt provision of backup of the data base such as question papers generated and printed, changes made in the data base, etc. Log files are created indicating the date, time and the IP address of the system from which the server is accessed.

- Date wise list of students registered for OD-Exam, attendance sheets and blank award lists can be downloaded by the concerned RC.

- It has centralized control on the whole exam starting from the registration to the declaration of result.

- It has facility for multi mode registration–fee payment which includes on-line payment through credit card, through bank draft and cash challan.

- The in-built security mechanism of software takes care of the security of the question banks and data base.

Achievements

The scheme of On-demand Examination was formally launched on the Foundation Day of the University in 2008. Thereafter the Winex Software was developed and the development of Question Bank started. What started as an humble beginning in February 2009, with 8 courses of two certificate programmes of IGNOU at two Regional Centres, it had grown to about 200 courses of 30 programmes at 18 Regional Centres and hope to expand even faster. In a short span of 5 months from the first OD-Exam, more than 1650 students got registered themselves for On- Demand Exam and more than 1000 appeared. The system has shown its strength and foolproofness as all the examinations have been conducted successfully. As a part of the scheme, a digital question bank having more than 2.00 Lakh questions both in English and Hindi medium was developed for about 200 courses of the university and it was being upgraded continuously and regularly for many other courses. But because of some administrative reasons the scheme of On-Demand Exam has been kept in abeyance.

In view of the learner friendly features of On-Demand Examination, a large number of students have been requesting to start on-demand examination in other courses at the earliest.

During the period of 20 months of launching of the OD-Exam portal, more than 5,62,993 visitors visited the On-demand exam web site, which shows peoples interest towards On-demand Examination. On-Demand Examination Website is http://winex.ignou.ac.in.

The scheme of On-Demand Examination was much talked about in the community and had a wide media coverage right from its inception as Walk-in Exam which was later re-christened as On-Demand Examination.

Preparing people to accept change was the biggest challenge. But it turned into appreciation when the new system worked and people started tasting its fruits. One has to work patiently consistently and resolutely. The same thing happened with this programme.

More than 2000 courses of 150 programmes, different subjects, different papers with different designs and blue prints developing a system which caters to every need was a real challenge, but finally, we developed powerful versatile software which is well adapted for ODL. As we were working, we were improving and updating it.

Most of the courses of IGNOU are bilingual. Developing bilingual Question Bank in itself was a huge effort – identifying subject experts who know Hindi as well as English was a challenge. Gradually we could meet this challenge with success and prepared a database of competent translators for different subjects with a view of their future involvement.

Delivery of question papers, having secrecy and security issues in mind, to different centres of the country at different places at the same time was a challenging task, but it was handled very well. With the use of technology and latest safety and security measures, we finally succeeded in resolving the issue. We can now conduct On-Demand Exam all over the world at the same time with adequate safety measures.

Initially, the On-Demand Exam started at two Regional Centres in Delhi, within three months it was extended to five more Regional Centres and in next three months demand was from five more Regional Centres. Thus, in less than one year it was extended to 12 Regional Centres of IGNOU. The extension of the facility of On-Demand Exam to new Regional Centres was very cost effective with one time very nominal investment for providing necessary infrastructure, i.e. one computer, one printer, chairs and web based CCTVs.

Applications and Uses of the Innovation

The success of On-demand Examination had helped in changing the mindset of Academia of higher education which will surely help to change the assessment and evaluation scenario in Open and Distance System in near future making the examination on demand. This scheme of On-demand Examination has been highly useful for the students who because of one or other reasons are not able to appear in the usual Term-End-Examination during June or December. Students can opt for On-demand Examination whenever they are prepared to give examination.

The software was also used for instant generation of the question papers for term end examination also, which made the process of question paper setting highly cost effective and less time taking.

Way Forward

It is an inherently adaptable system which can be easily up scaled to any number of courses, to any number of Examination Centres catering to all the students of IGNOU. The scheme of On-Demand Exam can be easily adapted by any other ODL system and it may provide a more credible system of examinations free of unfair means with less paper work before the exam. It may also provide a lot of administrative support and reduce burden on administration of evaluation in ODL system. It may also help in reducing workload on term end examination. The On-Demand Examination facility will boost the image of the University as is evident from the appreciation of the programme by the press, the educationists, the students and their parents. Further, it may help in improving the pass percent of students in different courses.

The software developed by the NCIDE for On-Demand exam could be easily installed online at the Regional Centres without any additional expenditure and special

arrangements. It did not require specially skilled or trained manpower to handle the entire process of on-Demand examination at the Examination Centres. It was highly user friendly programme. The training of the personals involved with the On-Demand Examination at Regional Centres was also done online. Hence, there was no problem in making these facilities available in any corner of the world.

The software for paper generation is to be backed by a good comprehensive question bank for which experts from different fields are to be identified and involved. Initially it was thought that the faculties of different schools will get the question banks prepared and hand over the finalized Question Bank to us for paper generation but finally this responsibility also fell on us and we single handedly prepared Question Bank for different schools involving the internal faculty and the external experts identified by them.

After an initial investment on developing infrastructure, the running cost on the entire On-Demand Examination process was substantially reduced. The same infrastructure would be used for On-Demand Exam in other courses to be introduced from time to time. The scheme can be extended to all the courses in the University without additional expenditure except that for the question bank development.

The scheme of examination on-demand can be easily replicated in any educational institute at school as well as at higher education level. The on-line registration module can be customized for any registration purpose be it examination related or otherwise. The On-demand Examination Module can also be used for generating quality and parallel question papers for term end exams in no time, especially in case of emergency and where the number of examinees is very less which will reduce the burden of question paper setting and thus will reduce the cost and time of paper setting.

Developing structured and graded question banks involving objective type questions (specially Multiple Choice Questions) the software can be adapted for on-line-examinations with a provision for instantaneous result declaration. The software can be used for individualized assignment delivery or for on-line assessment as part of Continuous and Comprehensive Evaluation.

Coordinator and Innovator

Dr. Oum Prakash Sharma
Period : 2008-2013