



**Application Form for – 'Gold Medal'
for Innovation in Open and Distance Learning-2018**

1. **Name of the Principal Applicant¹** : Dr. Jeetendra Pande

2. **Designation** : Assistant Professor- Computer Science

3. **Organization** : Uttarakhand Open University, Haldwani

4. **Principal Applicant contact information** :

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5. **Team members, if any** (*include Name, Department and Email address*): Not Applicable

6. **Innovation Title** : **INTEGRATED OPEN AND DISTANCE LEARNING THROUGH ICT FOR SUSTAINABLE DEVELOPMENT**

7. **Area in which Award is claimed** :

Programme Development
(*Including curriculum related contemporary development issues*)

Administrative Facilitation

Instructional Design and Delivery
(*In all the aspects of ODL including print, e-content, audio, video and counselling, etc.*)

Skill Development and Vocational Training

ICT Integrated Teaching-Learning
(*including MOOCs, OER, Virtual Learning and ICT in Counselling, etc.*)

Industry-Institute Collaboration

Learner Support, Monitoring and Feedback

Inclusive Education
(*including Education for Differently Abled and Disadvantaged, etc.*)

Examination and Evaluation

Any other Relevant Area

8. **Brief summary of the Innovation** (*in about 200 words*)

Following are the statement of work done under the innovation:

- Conducted a Baseline Study of the University with special reference to enrolment, contents, students support services, use of ICT, teaching learning process, learning outcome, employability etc.;

¹In case of team work, the names of all the members need to be mentioned at Point No. 5 and the first member of the team will be principal applicant at Point No. 1.

- Designed, developed and hosted a web interface along with Moodle LMS including app customization for content delivery and learner support including career counselling;
- Organised Training workshop on development of SLM/learning materials using OERs and development of Online course using Moodle LMS to build the capacity of the teachers;
- Developed 9(nine) courses with four-quadrant, for Certificate in Computer Application (CCA), Diploma in Information Technology and Certificate in E-Governance Technology and Cyber Security(CEGCS) in Moodle LMS and offering for learning;
- Offered free non-credit online courses, to promote computer literacy and create mass awareness about cyber security practices, through blended learning including Online learning with continuous academic learning support to the learners using Moodle LMS;
- Provided ICT based learner support services to the students for increase in learning outcome and improve their employability.
- Conducted a Research and Monitoring Evaluation to find out the status of learner's enrolment, completion of the course, status of learning outcome and employability etc.;

9. Technological Features of the Innovation (*In case of no technology use, describe the common features of the Innovation*)

Learners today are 'Digital Natives' who comprehend and analyze information fundamentally differently from 'Digital Immigrants'. They are socially more interactive and engaged in team-based activities. They prefer informal learning communications such as e-mail, text messages, instant messages, etc. The distance in distance education paradigm needs to be bridged by technology. Present times need people to be equipped with new skills and knowledge effectively and technology is acting as a substratum to support personalized, flexible, portable, and on-demand delivery of learning. Mobile phones are one of the less expensive, most accessible and popular media among students of all ages. Due to its affordability, mobile learning(m-learning) can contribute to combat the 'Digital-Divide'. It provides unique educational environments, which include connectivity despite being mobile, and personalized learning along with peer-to-peer interaction. The ODL system can adopt mobile technology for providing quality educational opportunities to its learners in order to achieve its mission of equity, access and democratization of education more effectively.

Taking the help of the technology, electronic learning materials in the form of e-learning modules and pre-recorded lectures are developed. These learning resources are provided complementary to the SLMs to further enrich the learners' knowledge. The faculty preparing the electronic learning materials are those who had prepared the SLM in the print form. The e-

learning modules are offered through the customized Moodle LMS which can be accessed at: **elearning.uou.ac.in**. Additionally, to support m-learning, MOODLE App is customized. ICT based learner support services (online counselling, expert guidance, etc.) were also provided to the students for increase in learning outcome and improve their employability. An OER repository was also created to provide all course learning materials on one device to make it easier for students - an important factor for its many part-time students who combine studying for a degree with full- or part-time work. The repository and apps streamlined all the different course resources into a single interface and allow the learners to access their course materials through their handheld devices, along with the audio and visual content the University produces to support studies. Hence, this innovation utilized ICT as a tool for designing, developing and dissemination of the online courses and provides learning support services. It also helps in continuous monitoring of learners' activities which helps the teacher to clear the difficulties faced by the learner and hence resulted in decreasing the drop-out rate in online courses.

10. Creative and Innovative Features *(Please indicate point-wise innovative features)*

- Given the diverse linguistic capabilities of the Indian population, around 10% of the Indian population speaks English. Hence, preparing the e-contents and digital platforms in English will exclude the vernacular speaking population. Therefore, all the lectures recorded in vernacular language i.e. Hindi.
- The innovation resulted in the reduction of carbon-footprint as more and more learners are encouraged to opt for the e-copy of the SLM.
- Subject matter experts were available as course coordinators, including UOU teachers/staff for running the course on Moodle and offering expert guidance to the learners for the course duration.
- ICT based learner support services provided to the learners helped them to achieve the learning outcomes of the course.
- The issue of late dispatch of SLM is addressed by creating the online repository.
- Capacity building of the faculty members on development of SLM OERs and development of online courses made the innovation sustainable and scalable as the trained faculty members started contributing to the e-learning platform by developing courses on their respective fields.
- Some of the participants posted job-opening of their organization in the announcement and the discussion forum of the platform. Thus, this innovation also helped the learners to search for the suitable jobs in the portal.

- The portal also provided an opportunity for professional networking among the experts/learners/subject matter experts.

11. Implementation of the Innovation (*Please indicate how the Innovation is implemented*)

Phase-wise implementation details are as follows:

- A baseline study was conducted to know various colors of university including academic and administrative information with attitude of teachers and students towards digital context of teaching-learning which is the need of time.
- The students of the university reported positive attitude towards mobile-learning and are mobile-savvy which is an indicator for the university to switch to mobile enabled learning platforms for content delivery. They can experiment with innovative approaches such as Moodle, MOOCs, other-content platforms and connect with the students through social networking for sending and receiving academic updates. Thus, Moodle LMS was customized to offer online courses. It also includes app customization for content delivery and learner support.
- Training to faculty members and online educators on development of SLM/learning materials using OERs and Moodle LMS.
- Development of Learning support material for 9 courses of CCA, DIT and CEGCS (text, video, Q/A, PPT, Evaluation Questions) in Moodle LMS and offering for learning. The video lectures were recorded in Hindi and the supplementary learning material is provided in English language.
- Support service is important component for any online course. Participants were provided with ICT based support services such as discussion forum, online chat and email which helped the participants to achieve the learning outcomes.
- Research and Monitoring Evaluation was conducted to find out the status of learner's enrolment, completion of the course, status of learning outcome and employability etc.

12. Impact of the Innovation (*Please mention what impact your Innovation has or going to have on the ODL System*)

Impacts of the Innovation are as follows:

- 45 ODL faculties and functionaries enhanced capacity for the development of course contents as OER and delivery through online learning. This not only resulted in the capacity building of the faculty members but also increase their confidence to offer an online course. An on demand course was also developed and offered by one of the faculty member of the University. The course was developed on the request of the Principal of Welhem's Girls School, Dehradun and it aimed at creating awareness about OERs, Computer Ethics and Cyber Security for students.

- An Institutional OER repository is created to increase access to learning with ICT based learner support;
- 09 courses of 03 programme developed and piloted to improve employability;
- 3000 learners including marginalised youths and women enrol and complete tertiary education and improve their employability;
- The course material developed under this innovation, specially the course material for cyber security, is now being adopted and used by many Universities like *Dr. Babasaheb Ambedkar Open University, Ahmedabad, Odisha State Open University, Odisha, Netaji Subhas Open University, Kolkata, etc.*
- Students enrolled for the various courses in the University are now opting for the e-copy of the study material, which is helpful in reducing the carbon footprint. It also facilitates the timely delivery of the study material.

13. Scalability of the Innovation

The Online courses developed under this innovation are the massive course designed to support unlimited (logically) participation and are offered through a Moodle LMS platform. In 2018, approximately 3000(three thousand) students were registered for the 9(nine) MOOC courses offered through this platform. As of February 2019, there are approximately 19000 registered learners enrolled in approximately 25(twenty five) courses, which testifies the scalability of the innovation.

14. Sustainability of the Innovation

- All the faculty members of the University are trained on OER and Online Course Development skills by conducting a series of workshops at the initial state of the project so that at the later stage they could also contribute online courses for the e-learning platform.
- 9 online courses were developed for the subjects like computer fundamentals, cyber security, etc. These courses were offered as free non-credit skill development online courses using the Moodle LMS platform in 2018. Certificate of completion was issued by the University, which was signed by the course coordinator, to all the learners who have successfully completed the course requirements. The courses became very popular and invited attention of decent number of learners. This motivated other faculty members of the University to develop the MOOCs for their respective subjects. Currently the University have MOOCs on subjects like Yog, Sanskrit, Tourism Management, IPR, etc. developed by faculty members of the University.

There are few more courses in pipeline which are under development stage. This attests to the sustainability of the innovation.

- In order to increase learning outcome and improve the employability, ICT based learner support services was provided to the learners. Currently there are approximately 30 faculty members of University and other Institutions/ Scientist from Ministry of Communication & IT/ Officers from Ministry of Defence/ Professionals from Industries who are volunteering to provide the learner support as subject matter experts. This further corroborates sustainability of the innovation.
- All the material developed under this innovation is hosted on the Moodle based e-learning platform and is released under Creative Commons license. This not only facilitates the sharing and adoption of the materials by other Institutions (the material is adopted by 5(Five) Universities/ Institutions) but also makes it possible to integrate existing OERs available in many course repositories like NPTEL, WIT-Solapur e-learning portal, etc. 9(Nine) courses were developed using the funds provided by the external funding and remaining 16(Sixteen) courses are adopted from different sources which are available as OERs. The list keeps on increasing by every passing month. This highlights the sustainability of the innovation.

15. Relevance with the concept of ODL System

Digital revolution is bringing in sweeping changes in the Higher Education landscape. MHRD has taken up novel initiatives like SWAYAM, Swayam Prabha, National Digital Library, and National Academic Depository. UGC has launched New Online Education Regulation-2018 which aims at raising the Gross Enrolment Ratio (GER) in the higher education from 24.5 (2015-16) to 30 by 2020, and the quest to enhance the quality of education would require a large scale expansion of the high quality education opportunities. However, physical expansion of such facilities is fraught with both infrastructural and human resource limitations. Fortunately, in the days of fast expanding IT facilities, the technology can be leveraged to address these twin concerns of enhancing access and quality. The technology of today gives opportunity to explore completely new ways of developing educational systems for both teaching and learning. Reasonable prices of portable devices contribute to a large majority being able to acquire laptops, notebooks, smartphones and tablets. The educational Institutions should take the advantage of the rapid development of these systems to ease the way of education for both students and teachers. Uttarakhand, with special reference to geographical site of schools and colleges in interior rural areas, make it imperative to take advantage of IT, to provide accessibility of quality education. According

to Census-2011, Uttarakhand have a decent base of mobile users with 68.4% of the population uses mobile phone. In such a scenario, an ODL system can play a vital role using digital technologies to reach those who are difficult to reach through various ICT initiatives. Following the ODL approach, the innovation caters to the development of marginalized sections of the society who have been left out of mainstream education.

16. Did you apply for this Award earlier? No
If yes, indicate specific progress/advancement since last submission to Innovation Awards (If applicable): Not Applicable

17. Explain in about 200 words why you think you or your Institution qualify for this Award

The innovation has the potential to qualify for this award because this innovation addresses some of the major challenges faced by ODL institutions, which are listed below:

- One of the challenges faced by significant number of students of the ODL Institutions is the delay in getting study materials provided by the university. This innovation addresses the problem by creating an online repository for SLM which forms an adhoc arrangement for the students till they get the SLM in hard-copy. These materials can be downloaded by the learners so that they can access it anytime, anywhere.
- This innovation not only addresses the problem of delay in getting the SLM, but is also helpful in reducing the carbon footprint. To promote the use of soft copies, 15% discount on the course fee was offered to the learners in case they opt only for the e-copy of the study material which was made available through course repository developed under this innovation. This offer is availed by the decent number of the students in 2018 which resulted in printing of less number of copies of SLM and hence reduce the carbon footprint.
- Support service is an important component for any online course. ICT based support services such as discussion forum, online chat and email were provided to the learners which helped them to achieve the learning outcomes.
- There is a considerable shortage of teachers trained to deliver online learning material and it is difficult, expensive and time-consuming to train new teaches in these goals. Training on development of SLM/learning materials using OERs and Moodle LMS was provided to the UOU teachers under this innovation. These efforts resulted in the enhancement in the capacity of academic & non-academic, educational leaders for the development of course materials and its delivery for the online teaching-learning. Post training the faculty have positive attitude in context of adaptation, use, sharing as well as contribution to OER.

- Till early 2018, UGC did not allow the Universities to conduct online courses. Therefore this platform was used to deliver non-credit and awareness based programs as an experiment, so an open platform was provided to the students for learning and evaluating themselves with anytime, anywhere access. Now UGC have notified University Grants Commission (Online Courses or Programmes) Regulations, 2018 which lay down the minimum standards of instruction for the grant of Certificate or Diploma or Degree, through online mode, delivered through interactive technology using internet. Under this innovation, Moodle LMS was customized for offering the online courses and till date 25(twenty five) courses are offered under trial run using the Moodle based e-learning portal(the portal can be accessed at: **elearning.uou.ac.in**) of the University. The University is prepared well in advance to offer full-fledged online course in the future.
- The log report generated by the LMS facilitates the teacher to monitor the participant performance. The teachers can analysis the log report frequently to know the participants which also help to retain the participants.
- The system can be integrated with the learning analytics plug-in tools to monitor the participation of the participants very accurately in each activity which help the teacher to clear the difficulties faced by the participants. This activity helps to reduce drop out in online courses.
- All the teaching-learning material developed under this innovation is released under creative commons license which support the free sharing of the resources among the institutions.
- Uttarakhand Open University is one of the youngest state open Universities of India which was founded in the year 2006. The University have limited availability of infrastructure, resources and funds. All these activities are carried single headedly with lot of moral support from the top management, limited available infrastructure and without any financial contribution from the University. All the funds were arranged from the external funding agencies like Commonwealth Educational Media Centre for Asia (CEMCA), Uttarakhand Science Education Research Centre(USERC), etc. to carry out these innovations

18. Declaration

I confirm that :

- Information presented here is **not confidential**.
- The work submitted is my/our original work.
- Members of the innovation team and the Competent Authority of our institution, have been consulted, and agreed, to this submission.

Principal Applicant (Name and Designation)

Dr. Jeetendra Pande
Assistant Professor- Computer Science

Principal Applicant (signature)

Date : 15/02/19

VC/Director/Head of Division or Institution (name)

Prof. O.P.S. Negi - Vice Chancellor

VC/Director/Head of Division or Institution (signature)

Date :

Please forward **THREE** hard copies of the filled in Proforma and supporting materials through proper channels to the Director, NCIDE, G-Block, Zakir Hussain Bhawan, New Academic Complex, IGNOU, Maidan Garhi, New Delhi-110068, by **February 28, 2019**. **Apart from this, you should also send softcopies of the Proforma at ncide@ignou.ac.in**
If you have any questions please call 011-29536413 or email at ncide@ignou.ac.in