

Certified online Interactive Degree Courses, 3D Virtual Labs and Escalating Research Projects in India - Vision 2040

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ABSTRACT

As India is rich in talent, lagging in research and poor in finance, authors sincerely appeal UGC, NAAC, NPTEL, IIT, AICTE, IISER, IISc and administrative institutions like IIM, UPSC and Supreme Court core committees to take initiative in implementing and maintaining industrial and research oriented certified online audio-visual interactive degree courses across the Indian boundaries. Benefits and implications of this scheme are: 1) Distance education system, Open education system and Open book exam etc can be eliminated. 2) High quality research orientation can be inculcated among teaching staff. 3) Experimental approach and industrial orientation- both can be implemented and maintained simultaneously. 4) Educational stress on teenage students and financial burdens on parents - both can be eliminated. 5) Reservation issues pertaining to caste and seat allocation can be eliminated. 6) Degree level scholarship schemes can be eliminated. 7) All educational institutions can be encouraged to tie up with online degree system with unique pattern and quality and can be forced to focus on laboratory activities rather than teaching. 8) Current educational staff can be classified into five broad categories as Education wing, Call center wing, Research wing, Orator wing and Industrial wing. 9) Students lagging in grasping the key technical points can listen & watch the recorded and edited information several times for a better understanding and thus doubts, subject fear, back logs and detaining issues can be avoided to a great extent. 10) By maintaining educational call centers, interaction with students can be established and online degree courses can be strengthened further. 11) With recorded and edited lab experiments and 3D modeling tools, virtual laboratories can be developed and thus awareness can be inculcated in students on knowledge acquisition on various experiments and experimental setups. 12) As there is no restriction on available number of (electronic) seats, stress oriented and suicide provoking complicated entrance exams can be relinquished. 13) Poor students, Female students, male and female job holders, physically handicapped students and students not interested to attend colleges can get better education in this scheme. 14) For maintaining this online degree system across India, there seems a big scope for new employment. 15) By 2040, India can have a leading role in world science, engineering and technology. Even though the proposal under consideration is interlinked with many political and social issues, with reference to 'Vision2040' program, this proposal can be given a chance in Indian higher education system.

Keywords : Indian Web University, Certified Online Audio-Visual Interactive Degree Course, 3D Virtual Lab

I. INTRODUCTION

It is a well known fact that, higher education plays a vital role in student's career, family welfare and

country future. As there is a lot of scope for employment, many of the students are being attracted by various engineering degree courses. Owing to poor financial conditions, caste based seat reservations and

lack of reasoning skills, many of the students are not getting seats in good engineering colleges. Due to funding and financial issues, in many engineering colleges, management is not in a position to maintain good teaching faculty. As a result, many of the engineering students are passing out with minimum knowledge and are not in a position to face any kind of job oriented interviews. It seems that, there exists a number of loop holes in Indian education system [1-12]. After a thorough analysis we could find many complicated issues. For example,

- 1) Seat allocation clash in between economically poor forward caste brilliant students and economically poor backward caste dull students.
- 2) Many of the IITians are crossing Indian boundaries and working for other country's development.
- 3) Many scholars future generations are getting settled in other countries.
- 4) In reputed educational institutes, even though equal priority is given for brilliant and dull candidates, dull student is not in a position to grasp the points and suffering with mental stress and inferiority causing him/her for a suicide attempt.
- 5) Many of the Ph.Ds are remaining on papers and not being used for mother country's development.
- 6) There is no coordination between scientific research and industrial development.
- 7) In most of the fields, Indians are becoming end users.

II. METHODS AND MATERIAL

One unique solution for high quality education and research in India

E-learning [14-22] allows to get education to every person out of dependence on its residence or social and economic status. Though today's interactive training is more often, it is used to train specialists in economics, humanities, science, and much more rarely in

engineering. That's because engineering education needs technological laboratory practical works as well. But this problem is possible to be solved, for example, with the help of so-called virtual laboratories and distance practical works. But in spite of one more important educational factor still exists necessary to build up the character of a young specialist in industry: the absence of interface communication with a tutor. That's why we suppose that as far as technical universities concerned it is expedient to combine classical training with e-learning: mixed educational technologies. Key advantages of e-learning are flexibility, convenience and the ability to study at one's own pace at any time and any place where an internet connection is available. The participants can participate and complete coursework in accordance with their daily commitments. This makes an e-learning education a viable option for those who have other commitments - such as family or work - and/or cannot participate easily e.g. due to reduced body function. There are also cost and time benefits with blended learning, not having to commute to and from a place where education is given face-to-face.

In our earlier published papers [13,14] we tried our level best in presenting the need, applications and maintaining of web audio - visual degree courses with possible explanation. In this paper we are trying to highlight the benefits and implications with an emphasis on call center activities. UGC, NAAC, IIT, AICTE, IISER and IISc institutes are providing high quality education and NPTEL is providing high quality audio-visual supplementary courses in Engineering, Science and humanities streams [23-28]. As India is rich in talent, lagging in research and poor in finance, authors sincerely appeal UGC, NPTEL, IIT, AICTE, IISER, IISc and administrative institutions like IIM, UPSC and supreme court core committees to take initiative in implementing and maintaining industrial and research oriented and certified online audio-visual degree courses across Indian boundaries. In this

context we emphasize that, for the upcoming online degree courses:

- 1) As there is no restriction on available number of (electronic) seats, stress oriented and suicide provoking [29-32] complicated entrance exams need not be required.
- 2) Must be independent of caste, gender, mental stress and economical status.
- 3) Full course fee must be nominal.
- 4) Certificates must be issued and recognizable by all other institutes, industries and organizations.
- 5) Periodical tests must be conducted for evaluating/rating the capability of students.
- 6) By considering the rating of students, effectiveness of the web degree system can be monitored and improved year by year.

2. Benefits and implications of online degree courses

By maintaining an Indian Web University (IWU) with call centers across India, certified online interactive degree courses can be conducted. With this type of unique education, we can have so many benefits and implications.

A. Benefits of online degree courses

By considering the proposed certified interactive online degree courses,

- 1) Distance education system, Open education system and Open book exam [33, 34] etc can be eliminated.
- 2) High quality research orientation can be inculcated among teaching staff.
- 3) Experimental approach and industrial orientation- both can be implemented and maintained simultaneously.
- 4) Educational stress on teenage students and financial burdens on parents - both can be eliminated.

- 5) Reservation issues pertaining to caste and seat allocation can be eliminated.
- 6) Degree level Scholarship schemes can be eliminated.
- 7) All educational institutions can be encouraged to tie up with online degree system with unique pattern and quality and can be forced to focus on laboratory activities rather than teaching.
- 8) Students lagging in grasping the key points can listen & watch the recorded and edited information several times for a better understanding and thus doubts, subject fear, back logs and detaining issues can be avoided to a great extent.
- 9) Current educational staff can be classified into five broad categories as Education wing, Call center wing, Research and development wing, Orator wing and Industrial wing.
- 10) By maintaining educational call centers, interaction with students can be established and online degree courses can be strengthened further.
- 11) With recorded and edited experiments and 3D modeling tools, virtual laboratories can be developed and thus awareness can be inculcated in students on knowledge acquisition on various experiments and experimental setups.
- 12) As there is no restriction on available number of (electronic) seats, stress oriented and suicide provoking complicated entrance exams can be relinquished.
- 13) Poor students, Female students, male and female job holders, physically handicapped students and students not interested to attend colleges can get better education in this scheme.
- 14) For maintaining this online degree system across India, there seems a big scope for new employment.
- 15) By 2040, India can have a leading role in world science, engineering and technology.

B. Implications of certified interactive online degree courses

Clearly speaking, by implementing certified online degree courses, current educational system can be classified into five broad categories. They are:

- 1) Education wing
- 2) Call center wing
- 3) Research and development wing
- 4) Orator wing
- 5) Industrial wing

III. RESULTS AND DISCUSSION

1) Advantages of education wing

- a) Throughout the country, starting from remote villages to major towns & cities - clearly speaking 'Galli to Delhi', students will get same IIT or IIM standard education and there will be no stress in their teenage.
- b) With digital web lessons, like a song, same topic can be browsed and listened for several times so that any student can easily understand the subject thoroughly.
- c) For any student (either regular or distance mode or job holder) - pre recorded and edited 'experiments' and 3D modeling tools will help a lot in understanding and executing the experiment.
- d) Irrespective of their financial status-round the week, regular students, physically handicapped students, job holders and poor students (male & female), sitting in their homes can get the quality education compared with the existing Open and Distance schemes.
- e) As online degree course is able to provide theory part as well as virtual laboratory, student is exposed to (virtual) practical knowledge, his/her creative, reasoning and grasping skills can be improved to a greater extent.
- f) As online degree course is able to provide the theory part as well as virtual laboratory, all other institutions can concentrate on laboratories so that experimental knowledge can be enhanced among students and new ideas and innovations can be generated at a faster rate.
- g) Junior teachers and students can improve their teaching skills through the recorded and edited audio-video lessons.
- h) With this online degree system, all universities and affiliated colleges can be linked well and a standard syllabus and a standard education can be maintained across India.
- i) Existing schemes of Professional, Open and Distance educations can be well inter-linked with this online degree system.
- j) As time passes, Web University's quality of education will be improved and cost of education fee will be reduced to a minimum or free.
- k) As there is no problem with seat allocation system, irrespective of their caste and financial status, students can take any branch of engineering/science/arts with reference to their personal interest at any time.
- l) By joining with online degree system, existing money oriented institutes will reduce course fees and gradually transforms into good institutes for survival.
- m) Forward and backward community problems can be eliminated in seats allotment.
- n) Parents stress in educating their 'boy kids' as well as 'girl kids' can be relieved to a great extent.
- o) Usage of Internet, computers, audio-video devices and printers will be increased to a great extent and there by their cost will be reduced.
- p) From time to time syllabus can be modified and maintained easily across India.
- q) In future, Audio-Video lessons can be aided by international professors and thereby we can have One World - One University.
- r) Irrespective of their caste and other social elements, very soon, education, research and

industry will be synchronized to a compact & cohesive unit and will keep mother India in No-1 position in the world.

- s) Every year, lakhs of students with IIT/IISER standards can be made available to mother India.
- t) Even though, one lakh engineers/scientists fly away abroad every year, each state in India will have one lakh talented engineers/scientists. With this kind of potential, India can attract its NRIs back.
- u) By 2040, India can become world exporter for innovative technology which in turn increases Indian economy to great extent.

2) Advantages of call centers

- a) Interested teaching and non-teaching staff can enter into 'Call center wing'.
- b) They can have interaction with students on different subjects round the clock.
- c) They can guide students on exam schemes, patterns, schedules and centers.
- d) They can guide students on various aspects of research activities and publications.
- e) They can help in grouping students having similar ideas with cyber networks.
- f) They can conduct national and international web conferences with low financial budget.
- g) They can help students in presenting their ideas in a paper form and journal publications.

3) Advantages of research-development wing

- a) Interested staff can enter into Research and development wing. There is a lot of scope for new ideas, concepts and innovations.
- b) Research network can be initiated among the students having same ideology.
- c) With the R & D wing, research projects can be carried out continuously and creative & innovative things can be developed and can be

patented in the international market of science & technology.

- d) The R & D equipment can be used as a special laboratory for the young students so that they can be exposed to the latest science and technology that develops creative and innovates skills in the their teenage mind.
- e) Since R & D is continuously put into operation, youth can be turned towards Science & technology (other than politics & bad issues) with rewards and cash prizes.
- f) As many of the Indian students are able to get web education, they will get a lot of confidence and they can get good jobs in abroad and within India they can run their own industries effectively there by unemployment problem can also be resolved to some extent.
- g) New and creative ideas, papers, documentaries, short movies proposed by students can be published online from the web university and can be made available to public.

4) Advantages of oration wing

- a) Interested staff can enter into 'Oration'. With proper schedule, round the country, they can give lectures on different aspects of science and technology at call centers.
- b) Current issues of science and technology can reach young students in less time.
- c) Awareness can be created among students on self-employment and small scale industrial schemes.
- d) Again recorded lectures can be put in the web for all other students.
- e) Priority is given to new and challenging topics.
- f) They can highlight the historical biographies of eminent scientists and engineers.

5) Advantages of Industrial wing

- a) Interested staff can enter into 'Industrial development'.

- b) They can tie-up industries and students at all levels.
- c) Innovative and commercial ideas can be brought to the notice of students at all times.

3. To implement and run the online degree courses

- a) Even though initial investments are very high, they can be collected and maintained by big software companies or industries or Govt. Of India and loans from banks.
- b) Huge amount of money allocated for student scholarships can be diverted to digital web and the actual purpose of 'scholarships' can be best availed.
- c) Money can be collected from charitable trusts.
- d) Just like Money saving policies, suitable educational policies can be initiated and money can be collected from the parents well before admissions. Starting from 8th class to Inter second year, parents can be made convinced to pay a prefixed amount as educational policy for a period of 5 years.
- e) Rs, (20,000 to 50,000) can be collected from parents as a consolidate fee prior to joining the course.
- f) Money can be collected from fresh job holders for a limited number of years on EMI basis.

IV.CONCLUSION

Advantages of certified online degree courses are plenty and plenty! Its 'effectiveness' and 'influence' only depends on its implementation and long standing execution. By maintaining web educational call centers, interaction with students can be established and online degree courses can be strengthened. With this scheme, long standing 'caste and seat reservation quota' problems can be completely eliminated. Students stress in getting a seat in good college can be relieved. Parents stress in educating their 'male kids' as well as 'female kids' can be relieved to a great extent. Job holders, female students and physically

handicapped students can best avail this online degree system. Even though many of the regular IIT holders are quitting India, starting from 'galli' to Delhi, mother India can have lakhs of digital IIT holders. As many of the Indian students are able to get IIT like education, they will get a lot of confidence on educational skills and they can run their own industries effectively and there by unemployment problems can also be resolved to some extent. Not only for India, can digital education be implemented in any developing country. Even though the proposal under consideration is interlinked with many political and social issues, with reference to 'Vision2040' program, this proposal can be given a chance in Indian higher education system. For its successful implementation and long standing execution, political leaders, private and public industrial sector, scientists, professors, economists, engineers, IT professionals, officers, doctors, lawyers, private educational institute owners and all Indian citizens must come forward with a great vision and magnanimity. Authors sincerely appeal Indian central and state governments, UGC, NAAC, NPTEL, IITs, AICTE, IISc, IISERs, IIMs, all Indian universities and all other educational institutes to initiate and execute a joint action plan in this context for its full-fledged scope and benefits.

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