

OPEN AND DISTANCE EDUCATION

Recommendations from the Working Group on Open and Distance Education

National Knowledge Commission

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Composition of the Working Group

Prof. R. Takwale (*Chairperson*)

Former Vice-Chancellor, IGNOU, YCMOU and University of Pune

Prof. V. S. Prasad

Director, NAAC

Prof. B.N. Koul

Former Pro-Vice Chancellor, IGNOU

Prof. P.K. Sinclair

Director, School of sciences, IGNOU

Dr. Salil Misra

Reader of History, School of Social Sciences, IGNOU

Dr. V. Kumar

Assistant Provost and Director of Academic Computing, MIT

Dr. B.S. Bhatia

Former Director, DECU, SAC Ahmedabad.

Mr. R. Pawar

Chairman, NIIT

Prof. S. Banerjee

Vice- Chancellor, NSOU

PREAMBLE

The open and distance education system is a crucial vehicle in the sustained development of a knowledge society. Its potential for flexible education delivery, scope for self and life-long learning and cost effectiveness make it instrumental in meeting the needs of individual and communities at this juncture - in the rapid transition being made from the industrial to the information age.

However, as India prepares to face the knowledge challenges of the 21st century, higher education presents a rather dismal picture. According to the Ministry of Human Resource Development, India, only about 10% of the population in the relevant age-group is enrolled in higher education, and a mere 5% graduate with degrees. With the rapid growth of the service, knowledge and associated sectors in the economy, it is imperative that the populace is equipped to contribute to and benefit from these developments. This requires a radical overhaul of the higher education system, with regard to access, enrolment and most importantly, quality. Failure to address this need and foster more inclusive growth will adversely affect India's future economic prospects and the welfare of its citizens. We believe that this crisis in higher education gives us the necessary impetus for radical change.

Existing 'brick and mortar' campuses alone cannot cope with the current and future demand for higher education, given the limited resources for their construction and management. Even so, it is imperative that the state provides and commits to universal access to higher education. Open and distance education (ODE), enabled and delivered through information and communication technology (ICT), holds the promise to address questions of access and provide new, alternative forms of capacity building.

ICT enabled linkages - propelled by broadband and satellite networks - are of a new, unprecedented kind, with special implications in a globalised world. They give rise to the 'A-3' scenario, where Anyone, Anytime, Anywhere can be connected to others through networks and access devices in a virtual space. This facilitates new forms of organisations and communities, often constituted by the users themselves, and manifested in myriad ways – for example through wiki, blogs, social networks, open resource movements, virtual institutes etc. In working together, these groups and organisations create new resources and ways of empowerment in virtual and real spaces.

In a global scenario powered by global markets, higher education institutions must transform to meet the multi-faceted needs of the changing context – professionals who require in-service training and upgrading, unemployed persons who want to attain job-specific skills, industries and institutes that wish to collaborate to provide training, etc. At the same time, it is evident that higher education cannot be left at the mercy of 'market

forces' alone; doing so would compromise access for those without the means to pay at the point of delivery.

The biggest challenge faced in higher education, therefore, is the provision of *quality higher education* to the greatest number, at the lowest possible cost to the learner. And this is where ICT enabled open and distance education has significant advantages. Using ICT effectively for higher education can bridge the distance between the learner, instructor and the market by transcending barriers of space and time. Seamless access, flexible schedules, quality content and inclusive delivery mechanisms have enormous potential to increase the scale of access and, in that process, bring down the cost of higher education for the individual learner. Despite the physical absence of a 'real' teacher (which often causes ICT enabled education to be perceived as restricted in its social context and pedagogical rigour), ICT based modes foster the engagement of the learner with instructional content as well as work-place applications, to enable one to assess and apply strategies of personal development in meaningful and measurable ways. Most importantly, ICT has the potential to foster greater inclusiveness and overcome spatial isolation by effectively bridging geographical and social divides, especially the rural-urban imbalance.

While emphasizing the importance of ICT in distance education, it must be acknowledged that the current crisis in open and distance higher education is primarily due to the lack of clarity and coordination, the gap between avowed values and the actual practice, and inefficient delivery mechanisms. The recommendations made in this report will attempt to address issues of access and quality in a systematic manner while paying attention to organizational and policy issues.

In view of the changes and possibilities brought on by new markets and new technology, the most suitable educational model for the 21st century must be devised with care and with a keen eye on the processes of the information age. Under modern conditions, the development of a knowledge society rests mainly upon linking economic growth with cognitive growth. Neither can exist meaningfully without the other. Industry or modern economy is engendered by knowledge and knowledge exists primarily as an industry. However, we need to understand cognitive growth in a larger fundamental and philosophical sense and not just in the instrumental, applied and vocational sense. Complex modern and modernizing societies certainly need a literate population and a large number of managers, engineers and operators. But they also need a pool of experts seriously and collectively engaged in the task of explaining and exploring the society and making it more intelligible to the rest. Knowledge cannot and should not be reduced only to its applied and vocational aspects. Therefore, we hope that our recommendations will pave the way for the establishment of a **developmental model of education** that will not only provide **quality education for all**, but also strive towards the economic, social, cultural, environmental and ethical development of the learner and the society.

CHAPTER I

Background

The **National Knowledge Commission** (NKC) was established by the Prime Minister of India in 2005 to recommend and undertake reforms in order to make India a knowledge-based economy and society. The most important part of this mandate, therefore, is to build excellence in the educational systems in order to meet the knowledge challenges of the 21st century and increase India's competitive advantage in the fields of knowledge.

The open and distance education system forms a crucial component of higher education systems. In the light of its significance, the NKC has decided to constitute a working group with the following **terms of reference**:

1. Redefine the objectives of open and distance higher education
2. Identify constraints, problems and challenges relating to the open and distance higher education sector
3. Recommend changes and reforms to address the problems and challenges relating to the open and distance higher education sector, to ensure a holistic human resource development which is necessary for a knowledge society
4. Take necessary steps to mobilise and upgrade the existing infrastructure, delivery mechanism and pedagogy, taking advantage of the latest advances in Information and Communication Technology
5. Explore possibilities for innovation and initiate new programs relevant to our national needs. Suggest methods to bridge the gap between the needs of the employers and employable human resources developed by the open and distance education system, and to continuously upgrade skill sets
6. Suggest means of raising standards and promoting excellence in open and distance higher education, including training of professionals in the same
7. Suggest mechanisms to preserve and give access to indigenous knowledge.
8. Develop mechanisms to monitor activities and evaluate the outcomes of open and distance education programs and to make it a sustainable developmental activity.

9. Examine any other issues that may be relevant in this context

The Working Group met on the following dates: 7th February 2007, 29th March 2007, and 5th May 2007. The members of the Working Group circulated several notes for discussion and the minutes of every meeting were prepared and circulated. The Report has been prepared following extensive discussions at meetings and consultations via e-mail.

CHAPTER II

Vision and Goals

Context and Task:

To develop an open and distance education system for an educated, value-oriented, ever-developing and dynamic Indian society, that meets global as well as local and individual needs of the knowledge age, predicated on the following principles

1. Quantity- access to large numbers
2. Quality – standards and relevance.
3. Equality – affordability and inclusiveness
4. Speed of operations
5. Core values and principles
6. Governance

These issues can be addressed simultaneously through ICT enabled education that is designed and developed to best utilize the new processes of the information age.

New Processes:

IT Generated:

- Digitization,
- Virtualization
- Mass-personalization and mass-customization.

Network Generated:

- Global standards for communicating and working together,
- Self-organisation (Blogs)
- Mass collaborations (Wiki -processes for creating free resources)
- Open resource development
- Meta-databases.

The open and distance education system of the 21st century must be based on personalized and cooperative learning and teaching processes enabled by the above.

Transformations:

1. There must be a change in focus from the capacity building of institutions/campuses to the capacity and capability building of the learners. Thus, the new system must be truly **learner-centric**.
2. Integrative technologies must be used to forge **convergence** of the modes of all existing systems of education - formal, non-formal and informal – to facilitate transition to a **trans-modal system of education** that best serves the needs of a knowledge society. During the transition period, mixed and hybrid modes must be deployed for students beyond the purview of internet connectivity.
3. Dynamic and **high-quality open educational resources** must be created collaboratively and be made available to all, in order to enable the development of a **distributed learning system**.
4. A network of students, teachers and resources to be created for high quality interactivity that enables work-place based situated learning and development. This collaborative approach of working-learning-developing jointly must aim to replace the unidirectional flow of instruction from teacher to student by a mode wherein both learner and educator become **co-creators of value**.

Desired Characteristics:

1. Fosters innovation, creativity and entrepreneurship.
2. Develops new competencies and skills appropriate for knowledge age.
3. Offers quality education for *all*.
4. Creates orientation towards development by linking learning with living and working
5. Provides a solution to the digital divide

Mission:

To integrate ICT-enabled education with pedagogical and management processes in a self-sustaining manner to develop a world-class, globally competitive, flexible and value based open and distance education system that has the scope to provide quality life-long learning to all citizens and meet the developmental needs of the country.

System Components:

1. **Network** connecting all provider institutions, students, teachers and resources. 9

2. **Content** development and delivery of courses through teams of institutions, teachers and experts through a convergent delivery mode.
3. Development of **Open Educational Resources** and maintenance of **Meta-databases**.
4. **Organisation of training, evaluation and certification**, and maintenance of mass-personalized record of student studies and achievements.
5. Organisation and management of partnerships and delivery through **consortia** of institutions and agencies involved in the programs.

Standing Committee for Open and Distance Higher Education:

The Standing Committee is to be the nodal agency that supports and facilitates the transition to the new paradigm. Its functions would include coordination amongst various institutions and stakeholders (public and private), development of open educational resources, ensuring quality education and services for the learners and devising special mechanisms for bridging socio-cultural, economic and digital divides. The Standing Committee must also be responsible for evolving sound business and financial models to make the system publicly accountable yet self-supporting.

Key Elements:

- **Formation of consortia** for participative, democratic and open decision making / functioning.
- Continuous development of **dynamic open education resources** for learning and teaching.
- An enabling **intellectual property rights** framework in the context of open educational resources
- **Quality training of tutors and teachers** for offering network-based quality services
- **Total e-governance**, including digital access centers for supporting distance education and easily accessible records of accounts and operations.
- **Core principles and core values** that promote working and serving together in the new paradigm.
- **Participation of communities, industry and civil society** through public-private-community partnership
- **Sound and sustainable business and financial models** for sharing costs and benefits amongst participating institutions and individuals.

Approach to Recommendations

In making the recommendations in the following section, we hope to perform two tasks simultaneously - address problems with the current scenario and pave the way for the best model to serve the knowledge society of the 21st century. We envision life long learning for anyone, anytime, anywhere; and for that learning to promote empowerment processes by linking knowledge with economic, social, environmental, cultural and ethical development

CHAPTER III

Recommendations on Specific Areas:

The discussion on each of the specific areas is structured under the following heads:

- *Introduction to the current scenario*
- *Issues within the current scenario*
- *Needs of the knowledge economy*
- *Changes required for reform*
- *Action points*

3.1 Access

3.1.1 About 10% of the relevant age-group in India currently enrolled in higher education, whereas in developed countries corresponding figures stand between 30%-50% of the relevant population. Out of this 10%, the ODE system in India accounts for about 20% of the total enrolment.

3.1.2 The *raison d'être* for open and distance education is to extend higher education to non-traditional learners by adopting an open, flexible and relatively inexpensive approach. Increasing access to higher education, which is relevant and need-based, has been and remains the mantra of the ODE system. This inclusiveness is aimed especially at those who are at a disadvantage in the conventional system with respect to age, gender, geography, social and economic background.

3.1.3 The knowledge-driven economy is predicated on an intimate and reciprocal relationship between knowledge/skill development and economic growth. In order to achieve our goals and sustain these achievements, relevant education must be provided to all citizens, and life-long learning to anyone, anytime, anywhere. At the same time, those who wish to enter the system for the sheer pleasure of learning must find the environment receptive.

3.1.4 Quality education for all can be achieved through proper utilization of the advanced technological resources available to the ODE system. The need of the hour is to create a broadband-enabled network, linking all teachers, learners and other stakeholders – particularly partners from industry and civil society – to enable the system to best utilize the technology at its disposal. This network, administered through appropriate mechanisms of e-governance, would ensure increased scalability, mass personalization of programs and customized pedagogical support to the learner. Special attention must be given to learners who have so far been outside the purview of the system, and special

policies for inclusion in the system must be devised for learners with specific disadvantages.

Over time, ODE has evolved intimate links with other systems. It uses the expertise of the conventional system. It brings in professional and technical expertise from industry for development and delivery of its programs. It is also linked to more than 100 universities through their distance education programs. Therefore, the ODE system is well-equipped to adopt an integrated approach in developing a convergent mode of education for the 21st century.

3.1.5 We recommend the following action points with respect to the issue of access:

- ICT must be suitably integrated into the ODE system, not only to ensure wider outreach and delivery but also to make the pedagogical process more relevant, user-friendly, accessible and updatable. Pedagogical delivery in the ODE system must discard its heavy reliance on textual material and content-based evaluation and move towards skill, competency and capability development suited to the life and work situation of the learner. At the same time, the learner must have the freedom to choose any pedagogical mode of one's convenience from the present modes of pedagogical transaction, be it print, audio-visual or internet based.
- In view of ODE's objectives of inclusiveness, flexibility and life long learning, admission criteria and the system of credits should be as flexible and adaptable as possible, in order to serve best the needs of the learner and his or her workplace. Provisions must be made for multiple entry points, multi-exit points, a flexible timetable and assessment mechanisms for supporting life-long learning.
- The credit system of evaluation and credit banking should be introduced to replace the year-end examination/marks system, in order to enable the learner to move across systems/institutions/programs. The success of the system will be contingent upon the high quality of credit programs and their acceptability across all systems, institutions and the market.
- The ODE system must suitably deploy *all* modes of educational delivery, and the freedom to choose, mix and match the mode of delivery should be left to the learner. Metadata standards should be instituted to enable convenient combination of content through several modes (see section **3.5**).
- Special provisions with respect to policies for inclusion must be devised to ensure equity with access to socially and economically disadvantaged individuals and communities (see section **3.13**)

- Special mechanisms should be devised to enable specially challenged individuals to partake in the ODE system. The ODE system has the potential to best address the requirements of these individuals (see section **3.10**)

3.2 Programs

3.2.1 The ODE system emphasizes self-learning and non-traditional pedagogy, yet the structure and content of the bulk of the programs offered in ODE are replications of that offered by the conventional system.

In addition, there are significant numbers of graduates from the conventional higher education system, who hold degrees but find themselves ill-equipped in terms of skills required by the market. They constitute a vast portion of the youth who are “qualified”, yet un-employable and, therefore, underemployed or unemployed

3.2.2 Courses and programs currently offered in ODE are not necessarily designed to fulfill the developmental needs of learners in the new knowledge economy. The relevance and the quality of program content remain questionable. Self-instructional components in most of these programs are poor. Programs are not structured to be dynamic enough to cope with the knowledge/skill needs of a rapidly changing economy. Moreover, special enabling/vocational/application programs must be designed and instituted in the open and distance mode to impart need-based skills to graduates from higher education programs to allow them to find a place for themselves and their skills in the market/ place of employment.

3.2.3 The knowledge economy demands that educational processes should be both development oriented and learner-centric. The ODE system must simultaneously provide for heterogeneous individual/local development needs, global skills requirements, and market oriented applications. The focus should be on capacity-building of every citizen, at every level, for which educational packages should be flexible, high quality and low cost. The impact of all programs should be to impart skills, knowledge and aptitudes that are essential in the knowledge economy, to upgrade workforce skills and to make learners and workers capable of making optimal use of the changing technology.

3.2.4 The key to flexible, dynamic, learner-centric and need-based programs/curricula in the ODE system is the creation of high-quality common open resources, which can be effectively utilized across all modes. These resources must be structured to facilitate the devising of diverse, flexible, demand-driven and adaptable programs. These programs must also be structured for those who have completed higher education programs but who need market-based reinforcement and upgrading of their knowledge and skills.

The orientation of educational programs and courses has to change from content mastery to the *application* of content to local and global situations which the learner encounters¹⁴

in one's life and work. In the context of globalization, innovation and creativity have to be nurtured and developed for conversion into value addition and wealth generation. This requires integrating the processes of personalization, customization and contextualisation of knowledge and its application. This complex exercise should be approached through the creation of open educational resources and meta-databases, where all content is made available to the learner under the guidance of the teacher/educator. This implies different processes of learning such as cooperative learning, value-based sharing of work and development, sharing experiences amongst learning and developing groups etc. to pursue situational learning and development.

3.2.5 The following action points are put forward for developing programs for the ODE system:

- *Open educational resources* (OER) must be developed through a collaborative process, pooling in the effort and expertise of all institutions, since such a task is beyond the scope of a single institution. A **National Educational Foundation** with a massive one-time infusion of funds must be established for this task. This will function as a national resource centre for various courses and programs run through ODE, and made available for utilization by all.
- A policy framework must be adopted to enable all public institutions working in the field of education and training to contribute to the development of OER and offer services for quality guidance and personalized pedagogical delivery.
- *Reusable learning objects* (RLOs) will be the building blocks of common open resources and meta-databases. An extensive training program should be developed to help teachers/educators create *self-instructional materials* (SIM) in order to maximize learner autonomy.
- *Common metadata standards* should be instituted to enable reusability, free movement and combination of open courseware content. These standards and specifications should be used for developing associated tools. They must also be consonant with international standards for allowing access to global resources
- Policies pertaining to *intellectual property* should be framed in a way that does not restrict access to the content of common open resources. It should provide an enabling framework for educators and learners to combine pedagogical techniques and materials to suit diverse purposes. This cannot, however compromise intellectual authorship and credit, which must be acknowledged and protected.
- A range of quality services must develop around these open resources like testing, certification, guidance, personal portfolio development. These services may be charged

in lieu of the use of content from common open resources, to make the latter as inexpensive for the learner as possible.

- *Special programs* of an enabling/ vocational/application/market oriented nature must be devised to provide employment opportunities. Computer-assisted processes may be designed to match skill requirements and market opportunities to individual learner profiles to provide short-term, personalized training and upgrading packages, which would improve the employability of the learner in the mainstream market. This would be especially useful for graduates from the conventional system who are unable to meet the skill requirements of the market.

3.3 Pedagogy

3.3.1 The hallmark of pedagogy in the ODE system is the creation of self-instructional material (SIM), transmissible through several modes. However, the pedagogical process in the Indian ODE system is fraught with problems of poor quality and low learnability. Moreover, there remains a heavy reliance on the textual mode, and while ICT infrastructure exists (and is more extensive than it appears), its utilization and management for pedagogical (and administrative) purposes leaves much to be desired. The limited nature of pedagogical delivery through the textual mode also implies excessive reliance on face-to-face and temporal interactivity.

3.3.2 The pedagogical process in ODE must evolve beyond that of the conventional system and evolve its own unique structure suited to its basic aims. Pedagogy in ODE encompasses not only the teaching process but also instructional design, interactivity with the learner in terms of supervision and guidance, and the ability to transcend barriers of both space and time to enable life-long learning for all. It must be flexible and dynamic enough to suit the needs of every learner and respond effectively to the needs of the workplace in the knowledge economy. Pedagogical practices must involve students in active and constructive engagement with content and tools and promote skills in identifying and assessing quality resources for addressing practical problems

3.3.3 The needs of the workforce in the knowledge economy cannot be met by the tailor-made and standardized pedagogical exercise currently dominant in the ODE system. The most important function of ODE is to provide personalized delivery of knowledge that is anchored in the real world occupational/vocational/professional context. The pedagogical process must promote self-learning, wherein the learner is an active partner in the process, capable of choosing an instructional design most suited to one's purpose and critically engaged in the cognitive process.

3.3.4 Pedagogy in ODE must abandon the one-size-fits-all approach and be redesigned to provide high-quality education at a low cost to suit diverse needs of life-long learners.16

Such capacity can be achieved through appropriate integration of technology – particularly ICT, broadband and satellite connectivity. The emphasis of pedagogy must be on learner autonomy, personalized modules and situated learning and development.

In this regard, the common open educational resources, created collaboratively by experts and made accessible to everyone, will contain not only the content for learning and developing, but also the tools, technology and software essential for its delivery.

The complex and dynamic pedagogical design desirable in ODE is best achieved by adopting the “Intelligent Flexible Learning Model” which combines interactive multimedia, internet-based access to common resources and computer-based communication using automated response systems. The “flexible learning model” allows the learner to:

- a) choose the content, media and method of learning as per one’s own requirements or requirements of the group where one belongs
- b) get considerable scope for interaction with the tutors /counselors and fellow learners
- c) access global exchanges of views in a learning situation –as the system permits and
- d) take increasing responsibility for one’s own learning within a framework of easily available support.

The Intelligent Flexible Learning Model

Delivery Technologies:

- Interactive Multi Media (IMM)
- Internet based access to WWW resources
- Computer Mediated Communication (CMC)

Personal portfolios become a key element in the mass personalization of pedagogical services. Currently, personal folders usually contain administrative and activity data for clerical purposes. They must be expanded to include academic and intellectual development tracked through artificial intelligence and adaptive learning methodology. The personal and group/institutional folder or portfolio should be able to express strengths, weaknesses and the learning trajectory of the individual or group. The personal portfolio can also be an excellent tool for performance evaluation.

The pedagogical content should address the developmental aspirations of individuals and communities, especially in terms of vocational training, capacity building, devising sustainability and long-term survival strategies. It must promote holistic and all-inclusive development which is consonant with the global mandates of “Decade for Sustainable Development” (D4SD) and Millennium Development Goals (MDG).

3.3.5 The following action points must be implemented with regard to pedagogy:

- Convergence of all modes of education – formal, non-formal, in formal – must occur in order to enable flexible learning. ODE institutions need to become truly *trans-modal*, offering integrated programs of face-to-face teaching, traditional distance education and ICT-enhanced education, with a cross-border scope.
- Along with OER, RLOs and an enabling policy framework (especially with regard to intellectual property and metadata standards – see section 3.5.5), the development of *personal performance portfolios* for every learner in consonance with the credit point system must be incorporated into the certification system.
- All degrees should be granted on the basis of completing a requisite number of credits, obtained from different courses, tailored according to the learner’s needs and transferable from any one educational institution to the other – and across institutions of different types - through a common **credit bank** (see 3.6.5).
- The role of educators must be modified to adapt to the flexible learning scenario. They must be trained to use ICT and e-media effectively and efficiently to tailor pedagogical content to meet diverse learner needs. Their function as mediators, supervisors and advisors will be crucial to the success of the new pedagogical paradigm. This is elaborated upon in the next section.

3.4 Personnel Capacity Development: Staff and Faculty

3.4.1 In view of the faculty crunch that assails higher education, ICT-driven ODE has distinct advantages in that the extent of delivery is not dependent on human numbers alone. However, this does not negate the dire need for highly qualified, well-trained core faculties in ODE institutions. Due to the prevalent and pervasive misconception that ODE systems hardly need human resources, many centres are understaffed for academic as well as administrative purposes. In addition, a large proportion of personnel currently engaged in ODE are not equipped to handle ODE pedagogy and delivery, especially with regard to the efficient use of ICT.

Teacher training programs that have been attempted so far have been sporadic, and followed the “cascade model” – a top-down approach that envisions a downward trajectory from a trained cadre to another in turn, in the hope that this will effect large scale change at the classroom level. However, years of experience has shown that this model entails immense dissipation of energy and resources, has poor transformative value, does not take into account situational peculiarities and is often reduced to a trickle by the time it reaches the end user level.

3.4.2 The ODE system needs to provide incentives to attract and retain talented faculty, as well as devise a corpus of teacher training programs to provide educators theoretical and practical exposure to the latest theories of learning.

New processes in the ODE system require new models of training, which discard cascade models and one-shot operations in favour of linking training with situational contexts

and situated problem-solving. The *situational development training model* would consist of content designed to meet the needs and requirements of teachers and staff in their work situation, and delivery through distributed classroom modes, including web-supported, audio-visual and face-to-face interaction on a regular basis with experts, practitioners and peers. The success of the networked training team, consisting of local tutors as well as master teachers and experts, should be judged from the transformative value they achieve as reflected in the learners' performance. The process of training could be further extended by forming quality learning groups on various pedagogical issues which interact with other groups in the organisation and carry out reform oriented towards organizational learning and development.

3.4.3 Human resource training must be undertaken for developing and maintaining the systemic ability to allow one to learn as one wants, where one wants, when one wants and what one wants. We have to create a human resource cadre with the capability to develop, provide and maintain updated and appropriate infrastructure for each program, as well as the general infrastructure.

3.4.4 The role of faculty in ODE institutions should not be confined only to the creation/transformation of print material. It must be enlarged to include the entire process from the creation of instructional packages to its delivery and transmission, guidance and monitoring, evaluation and examination.

A comprehensive system for upgrading the skills of all the functionaries of the school system must be developed. Training and orientation programs need to be conceptualized at different levels – for policy makers/heads of institutions, for managers, operators and providers of services related to evaluation, personal portfolio development etc and also for section officers, technical staff and assistants. All orientation/training/refresher courses should emphasize learner autonomy and be geared towards the culture of self-learning. Educators and administrators must be trained to creatively develop study materials to cater to a wide range of interests, based on learners' needs.

3.4.4 The following action points are put forward for *personnel capacity development*:

- Field-surveys must be undertaken to identify learners' needs, devise ways of addressing them and developing motivation by studying the different functions of various tasks/jobs. A system or a variety of systems for continuous surveys/feedback must be established. The utilization of the outcome of these surveys must be undertaken on a regular basis.
- Teacher training packages should be devised and administered directly for in-service upgrading, without intermediaries. It must be a continuous process that is embedded in the workplace context and incorporates the following components:
 - Familiarity of all teachers, and teachers-to-be, with ODE pedagogy, utilizing various aids of teaching-learning effectively across modes
 - The ability to use and make available open resource, and knowledge of related IPR issues

- Ability to develop, activate and maintain appropriate learning management systems, and learning resource management systems
- Ability to prepare and update personal portfolios of students, to be credited from various systems, depending upon their movement across the modes of learning/teaching, over a flexible period of time
- Teachers should receive special training to serve the needs of learners with disabilities (See section **3.10**), and acquire familiarity with accessible and alternative pedagogical procedures/curriculum development for this purpose.
- The program for Bachelors in Education as well as teacher training must emphasize theories and practices of self-learning. The existing B.Ed curriculum and teacher training programs must be modified in view of distributed learning systems, convergence of media and future models of trans-modal education.
- A proficiency test for teachers/educators must be devised both for those already in the system, as well as for those seeking employment in the system, to be administered regularly. The proposed National Education Testing Service (see section **3.6.5**) must have a wing that devises and administers tests for educators.
- A mechanism for monitoring quality of training and certification must be established. This would require trained support staff for maintaining a resource base for training and evaluation as well as a computerized database for course clearance and certification.
- In a technology-dependent pedagogical system, regular updating of abilities and competencies in using the latest techno-pedagogical software must be carried out.
- Efforts must be made to provide support to faculty and teachers in the form of forums where they can exchange and discuss their ideas and experiences. Creating portals, networks and databases for teachers is an important component of this process.

3.5 Technology

3.5.1 Technology is the bedrock of the open and distance mode of education. Having come a long way from correspondence via print material, the technology that currently drives most of ODE is that of the “Third Generation”, i.e. involving facilities for audio-teleconferencing, video conferencing, audio-graphic communication and broadcast via TV/radio and audio-teleconferencing. The establishment of EDUSAT must be noted in this regard. While ICT infrastructure in this scenario is apparently more extensive than believed, its utilization, management and sustenance leaves much to be desired. Adequate effort is not being made to integrate technology into the pedagogical process. Currently, even the available electronic media stands underutilized for purposes of instruction, assignments, examination and governance.

The spread of information technology – mobile telephony, broadband connectivity, high fidelity internet and nanotechnology – and state promotion and support of related

policies have profound implications for ODE pedagogy and governance, especially in terms of enabling mass-personalized modules that transcend all barriers of space and time. However, despite advanced ICT permeating the ODE system, there are immense problems of coordination, quality of utilization, wastage of resources, and a near-total lack of inter-institutional linkages and interoperability. Instructional package designers and curriculum developers are often enamoured of the latest technologies without dealing with the associated issues of learner profiles and needs, the influence of the media upon the instructional process, equity of access to interactive delivery systems and new roles of teachers, site facilitators and learners in the distance learning process¹.

3.5.2 Advanced ICT must be made an inalienable part of the ODE system, if the latter is to achieve the goals set out for it. Only efficient use of technology can resolve the issues of access, cost-effectiveness and quality simultaneously. ICT integration is essential for communication and interactivity with the learner, development of learning management systems, knowledge resource pools, personalized packages and learner nurturance, evaluation and governance. ICT application also has enormous potential to bridge the rural-urban divide, which must be utilized thoroughly to make ODE more inclusive, equitable and scalable.

3.5.3 The knowledge society imperative of quality life-long education for all requires assimilation of ICT in the education system, not only for purposes of pedagogy (i.e. the “Intelligent Flexible Learning Model”), but also for management and governance. Development of software to this end is a vital task. In the information age, ICT is expected to provide a solution to the last-mile problem.

The culture created by ICT enabled linkages across the globe promotes openness, collaboration, transparency, participatory decision-making and co-creation of values – qualities that must permeate the ODE system as well. In addition, it is necessary to institute stable metadata standards consonant with international norms.

3.5.4. Listed below are some key components of the infrastructure for a network-enabled open and distance education model. A *public body* must be set up for establishing *stable ODE-related standards* for each of the following:

- i. A resource common of high quality diverse educational materials, modularized for easy use
- ii. A development and quality assessment process to ensure quality applications and tools to access, view and navigate across concepts, courses and curricula

¹ Sherry, L. (1996).” Issues in Distance Learning”, *International Journal of Educational Telecommunications*, 1 (4), 337-365

- iii. Flexible construction of customized learning materials, enabled by standardized tools and formats and delivered in a variety of formats and media (web, tests, and digital media)
- iv. Capabilities for domain specific and customized interactions

A comprehensive ICT project must be developed at the centre and then disseminated across the ODE system. All the recommendations that follow are contingent on excellent connectivity. Therefore, ***a national ICT infrastructure must be set up through state support that can meet the technology demands of the ODE system.*** In addition, priority must be accorded to setting up a **national ODE network** covering all open universities and DEIs (with access to students, teachers, management staff and other stakeholders) for supporting distributed education throughout the country.

3.5.5 The following action points are recommended to integrate and streamline ICT in ODE:

- The overhaul of already existing ICT applications is crucial. For instance, instead of satellite interactivity being available only at certain times in the study centres (as is the case currently), direct-to-home technology can be suitably employed to make terminals available to students at the time and place of their convenience. Efforts must be made to revitalize the role of cyber cafes, community centres and FM radio more effectively
- Stable ODE-related standards must be formulated and implemented by a public body established for this purpose. The following categories require attention in this context:
 - i. **Metadata standards:** Essential for labeling learning content developed by different agencies in a consistent way to support indexing, storage, discovery and retrieval of learning objects by multiple tools across multiple repositories.
 - ii. **Content packaging:** Applied in order to enable organizations to transfer courses and content from one learning system to another. It involves both learning objects and as well as the mechanisms for their combination, modification, adaptation and delivery.
 - iii. **Learner profiles:** Allow different system components to share information about learners across multiple system components.
 - iv. **Application interoperability and integration**
- Specifications and standards for various components of ODE are critical since online learning will continue to evolve and embrace new methods, such as learning object-based curriculum design, competency-based learning, and performance and knowledge management to meet learning and performance needs. Some key standards used internationally are given in the annexure
- Attempts must be made to create an ICT driven knowledge centre in every village, through the mission mode.

- In order to oversee the above implementations at an ongoing basis, creation of the following two **advisory bodies** has been recommended:
 - i. A **Technical Advisory Group** with representatives from the IT sector, telecom, space and industry in order to provide guidelines, monitor interoperability, ensure flexibility and track the latest developments in application.
 - ii. A second Advisory Group on **Pedagogic Content of Open Resources** with representation from UGC, CEC, IGNOU, NCERT/CIET, TIFR, IIT etc and private content generators, that would provide guidelines for development of repositories, exchange of material, access to students etc.

3.6 Governance

3.6.1 The Indira Gandhi National Open University was established in 1985 by an act of Parliament (IGNOU Act, 1985) as the first national university to impart open and distance education and also the nodal agency to coordinate, encourage and set standards for the same. Its degrees are recognized to be at par with other universities by the UGC (as of 1992). In addition, IGNOU also allocates and disburses funds for open universities and distance education systems in India through the **Distance Education Council (DEC)**. Authority to do so has been granted to IGNOU under Clause 16 and Statute 28 of the IGNOU Act 1985.

3.6.2 Presently, there are 14 open universities and about 130 distance education institutions (DEIs) of conventional universities in operation. The entire system is fraught with serious disparities – between open universities and DEIs, in the quality of different institutions and even in different programs of the same institutions.

In addition, the national open university (IGNOU) is simultaneously responsible for arbitration of standards and allocation/disbursement of funds. In order to supervise and coordinate the extensive and radical reforms recommended in this report, which involves not only convergence of the modes of formal, non-formal and informal education, but also transition to a future trans-modal education for the knowledge society, it is essential to establish an independent regulator and promoter.

3.6.3 Leveraging the ODE system requires efficient governance and regulation at the centre, as well as adequate decentralization of authority and participatory decision making for the preservation of institutional autonomy. The central authority must provide central support vis-à-vis open resources, support for ICT and networking, software development and management techniques. It must function as an umbrella institution with adequate representation from member institutions, learners and all relevant stakeholders.

3.6.4 The Report of the National Knowledge Commission (2007) envisages the constitution of an **Independent Regulatory Authority for Higher Education (IRAHE)** assisted by several standing committees. We, accordingly, propose the setting up of a standing committee

on **Open and Distance Higher Education**, representing the interests of all stakeholders, which would serve as the central regulatory body. The standing committee should provide an enabling environment for facilitating institutional networking, coordination, quality assurance and a level playing field. In addition, the IRAHE should also incorporate the **National Education Testing Service (NETS)** and the **Credit Bank**.

3.6.5 Therefore, recognizing the need for an independent central regulatory authority in order to catalyse the proposed reforms, we recommend the following action points:

- The **Standing Committee** on open and distance higher education shall develop transparent criteria for accreditation and lay down broad standards for quality assurance. Its mandate must be to undertake overall planning, coordination and monitoring of the ODE system without compromising institutional autonomy, and ensuring participatory decision-making at all levels.

The Standing Committee would carry out the following functions:

- i. **Networking** by connecting all provider institutions, students, teachers and resources.
- ii. **Content development** and delivery of courses through teams of institutions, teachers and experts through convergent delivery mode.
- iii. Development of **open education resources** and maintenance of **meta-databases**.
- iv. **Organisation of training, evaluation and certification**, and maintenance of mass-personalized record of student studies and achievements.
- v. **Organisation and management** of partnerships and delivery through **consortia** of institutions and agencies involved in the programs

The Committee will have representation from public, private and social institutions involved in educational and developmental sectors; this includes the central Open University, state open universities, private open universities, conventional education institutes, as well as the chairpersons of the Technical Advisory Group and Advisory Group for pedagogical content management. The Standing Committee would work on mission mode and will be responsible for the developing the new paradigms offering quality higher education to all those enrolled in the system.

The standing committee would also serve as the nodal organization for the following bodies:

- (i) The one-time national network of institutions and experts to undertake the collaborative task of developing common open resources for all (see section **3.2.5**)
- (ii) The Technical Advisory Group (see section **3.5.5**)

(iii) The Advisory Group for pedagogical content management (see section 3.5.5)

- An autonomous **National Education Testing Service (NETS)** must be established through legislation and invested with functional power and responsibility for assessing all potential graduates in higher education. This unified examination system shall test whether the learner has acquired the ability to perform intellectual/practical tasks expected of her/him, rather than duplicate the current examination method with its stultifying periodicity and memory driven evaluation. All courses, degrees and activities offered by universities should be certified through this system
- An autonomous and well-endowed **Credit Bank** should be established where each learner's credits would be added up and stored, according to which one's qualification would be awarded/obtained. It would also serve as a repository of learners' performance portfolios, to be accessed by potential employers/ agencies etc., with due permission of the account holder.
- The accreditation of groups and institutions should be granted on the basis of development achievement recorded and performance results accumulated in the group/ institutional portfolio indicating the level of learning and development achieved.

3.7 Quality

3.7.1 The poor quality of provision, with some honourable exceptions, is a major concern with policy-makers, practitioners and stakeholders engaged in ODE. In this context, two distinguishing features of historical experience and current focus of open and distance education deserve mention. Firstly, the beginnings and early growth of ODE systems in India were mainly motivated by *access* concerns. Secondly, in the context of structural readjustment of the 1990s and the shift in perception of higher education as more a private than a public good, many institutions established distance education centres (providing what is commonly known as "correspondence courses") for the primary purpose of resource generation and profit making. It is here, that a distinction must be made in the quality of education provided in open universities, and that provided by *most* of the "correspondence courses". Moreover, the resources generated from these correspondence courses are not plumbed back into the distance education institutions; instead they are used for improving the conventional education wing of the institutions.

3.7.2 Currently, the quality of education in ODE is highly compromised by the following factors:

a) Resource mobilization is prioritized over delivering education – as mentioned above; several institutions establish DE centres, exploiting the certification powers conferred upon them, with

the main objective of earning additional income, thus compromising quality in the process.

b) The prevailing misconception that there is an inverse relationship between access and quality – that increased access would imply degeneration of quality.

c) Quality assurance is seen to be incompatible with cost-effectiveness.

With the advent of advanced ICT, and its proper integration and utilisation by ODE in the new model, the perceived inconsistencies between quality, access and cost can be remedied.

3.7.3 In the present context of market driven economies and a highly mobile workforce, external assessment for purposes of quality assurance is rated highly. It appeals to employers, taxpayers and other stakeholders alike as it is perceived to be objective, unbiased and, therefore, dependable. In places like India, however, where higher education institutions are generally self-regulating and autonomous, external assessment may be perceived as an unwanted intervention against the traditional mechanisms like the academic boards/councils, departmental councils, senates etc.

Moreover, in view of the shifting paradigms of education and pedagogical delivery marked by the ascendancy of ICT, not only must the traditional quality protocols be upheld, but the new quality issues imposed by contemporary ICT applications should be identified and quality benchmarks accordingly revised (for example, standards, interoperability etc - see section 3.5)

3.7.4 The issue of quality requires a two-pronged approach – to tackle pervasive problems of poor quality in the current scenario, and to devise stringent norms for quality assurance applicable to the new ODE scenario. For the latter, quality assessment paradigms must shift from one that is institution-based to one based on the *learner's performance*. Learning should be geared to the development of knowledge and competency and their application for situational development. The associated services to students must be of high quality and they should focus on the curriculum, pedagogical transactions, support services, learning resources and finally, learner's achievement.

With the establishment of the National Education Testing Service, Credit Bank, Common Open Resources and the privileging of learner autonomy, quality evaluation should become a self-regulating, self correcting process. However, no educational system can afford to depend solely on market forces for maintenance of quality. Therefore, market processes, institutional safeguards and an external validating agency must simultaneously undertake the maintenance of quality.

3.7.5 The following action points are recommended for quality assurance:

- An independent **External Quality Assurance Cell (EQAC)** must be set up under IRAHE to assess and evaluate ODE institutions at regular intervals. Its function must be to receive for consideration internal/self-assessment reports from institutions, get them examined through peer review according to standards set by the Standing Committee on Open and Distance Education, conduct site visits to ascertain the claims made in the report, and finally submit a public document containing its judgments.

- The need of the hour is to exercise safeguards against the inadequate pedagogical delivery of some correspondence courses. For instance, courses and disciplines that require hands-on and experimental activity should not be taught only through the existing distance education mode without adequate technical and pedagogical support. The EQAC must issue mandates for this specific purpose. In addition, the resources earned from these courses must be ploughed back into the distance education institutions themselves.
- Each ODE institution must establish an **Internal Quality Assurance Cell (IQAC)** responsible for supporting and conducting essential operations for maintaining quality and ensuring that all statutory compliances are met regularly.
- All ODE institutions, and that includes correspondence courses administered by distance education centres of conventional universities, must be required to make explicit their quality assurance policies and practices, as set down by the IQAC.
- For the evaluation of excellence in performance to be carried out by IQACs, we advocate a simple adaptation of the **Baldrige Model** as the best means assessment and feedback. For details, see annexure for an adaptation of the 'Baldrige approach' to quality benchmarking.
- Monetary incentives should be given for maintenance of quality standards in the allocation and disbursements of funds by the proposed Standing Committee.

3.8 Research

3.8.1 It is contended that in the three decades of its existence, the reason that ODE has been relegated to a 'method' rather than a 'discipline' is because of the lack of comprehensive and serious research in the system. Promotion of research within the ODE system must be undertaken to develop ODE into a well-grounded discipline.

3.8.2 The ODE system has historically depended on the conventional system for most of its intellectual resources, and lacks the culture of robust and regular independent research. However, even in the conventional system, archaism, state patronage, institutional rigidity and absence of incentives and competition have made the research environment moribund. By virtue of its fluidity, dynamism and capacity to absorb new technologies and innovations, the ODE system is well placed to develop a research wing of its own, without duplicating research undertaken so far in the conventional system. However, there exists no institutional mechanism for promoting the above; instead, bureaucratic rigidity and lack of access to funds serve to stymie research initiatives.

3.8.3 Knowledge society requires research that caters to the demands of learners and employers in the knowledge market as well as that which strives to explore, understand and explain economy and society in order to contribute towards the holistic development of

the individual and community. In addition, we need indigenous and original research to contribute to a corpus that enables the system to address local needs in a wider national and global context.

3.8.4 In order to fulfill the integral role envisaged for ODE in the knowledge society of the 21st century, frequent, well-supported and rigorous research activity of two sorts must take place.

(i) *Systemic/Developmental Research*: This pertains to the processes, products and outcomes of the ODE system, taking into account its transformations as it moves into the 21st century and how to serve best the needs of the learner in a changing context. This continuous systemic research directed towards self-improvement should focus on:

- the learning habits and strategies of learners, especially ‘the new learner’ and ‘the digital native’
- the precise educational and training needs of our society
- the financial, technological and pedagogical requirements of the system and
- the psychological, societal and practical issues native to the context of our rapidly developing economy

(ii) *Academic/Professional/ Discipline-based Research*: Academic and developmental research must be taken seriously, promoted and conducted in every ODE institution by an active and well-supported research wing. New research priorities must be evolved and an enabling policy framework must be put in place for the above.

3.8.5 The following activities should be undertaken to leverage research in the ODE system:

- An autonomous and well-endowed **Research Foundation** must be set up under IRAHE to commission and facilitate multidimensional research for developmental and academic purposes. This independent body must set down terms and conditions for undertaking research projects, devise suitable enabling policies including provision for sabbatical leave, and work out mechanisms for disbursement of funds. Monetary endowments, both by the state as well as public and private agencies must be permitted to feed the corpus.
- The Internal Quality Assurance Cell (IQAC) must undertake and delegate projects on intra-institutional systemic developmental research on a regular basis.
- All ODE institutions should create and develop a culture for research by the following mechanisms:
 - encourage interaction across disciplines to facilitate a multi-dimensional approach to intellectual activity
 - institutionalize arrangements for having national and international scholars in residence
 - organise workshops and conferences on contemporary developments

in academia and society and

- undertake in-depth projects on new and developing areas
- The Standing Committee on ODHE should bring out a prestigious peer reviewed journal of international quality to provide scholars in ODE a platform for publishing their work.

3.9 Local and Traditional Knowledge

3.9.1 The prevailing opinion of the group is that local and indigenous knowledge are important aspects that must be accorded special attention; and the ODE system can play a vital role in the process by virtue of its flexibility. Initiatives have been taken for ODE involvement directed towards local and community development, but they are rare and must be scaled up.

3.9.2 Indigenous knowledge systems are tenacious and enduring. They must be protected to ensure that valuable skills and knowledge are not lost or forgotten. Similarly, local innovations in the context of a global scenario must be mapped out and mainstreamed in order to forge valuable partnership between local creation of knowledge and the market. The ODE system, with the technology and outreach at its disposal, is well-equipped to undertake this task.

3.9.3 The co-creation of knowledge and values – between the learner and the educator, between the local and the global – must be a valued aim of the knowledge society. In order for this partnership to occur, we must strive to protect all that is valuable in traditional knowledge, as well as motivate local creation of knowledge and ensure that it does not get lost in the global arena. The rights of local populations and indigenous peoples must be protected through an adequate intellectual property policy framework.

3.9.4 The ODE system must identify areas of indigenous/local concern, transform them into intelligible knowledge products through research, and transmit them into suitable instructional packages for transmission through the curriculum. The objective must be to disseminate these packages to wider stakeholders, while simultaneously protecting intellectual property rights, to enable the co-creation of value.

3.9.5 The following action points are recommended for protecting and mainstreaming local and traditional knowledge:

- In order to kick-start the process of content building, a national program funded largely by the State along with private and public donors must be established as a part of the National Foundation for the development of open educational resources (see **3.2.5**), for the purpose of disbursing funds to conduct research in local and traditional knowledge. The program must be set for five years with Rs. 1000-2000 crores at its disposal.
- Institutions that satisfy certain qualifying criteria will be funded to undertake the task of compiling local and traditional knowledge, as the first significant contribution of its kind into the open educational resources' corpus.

Subsequently, individual research wings of universities must be encouraged and funded by the Research Foundation (see section 3.8.5) to undertake projects in this area.

- The process should involve preliminary surveys and regional mappings to bring out specificities of different indigenous/local knowledge systems. New researches should be commissioned and planned on medicinal plants, animal husbandry, local crafts, pisciculture, tea-estate management, etc.
- Once these researches started on pilot basis are completed, they must be conceptualized for inclusion into the open educational resources, and packaged for transmission through the curriculum. The Technical Advisory Group and the advisory body on pedagogical content (see section 3.5.5) must be roped in for this task.
- The Wiki approach to recording, developing and sharing knowledge may be used in creating local and traditional knowledge resources. Such an approach would keep the database dynamic and enable access to national policy makers as well as local personnel for their use.

3.10 Special Needs Education

3.10.1 Learners with disabilities, i.e. those with “physical and mobility difficulties, hearing impairments, visual impairments, specific learning difficulties including dyslexia, medical conditions and mental problems”², face a very raw deal in higher education. Lack of physical access to classrooms and facilities, exclusionary pedagogical techniques, inappropriate teacher training and attitude as well as discrimination from non-disabled peers have caused such learners to be under-represented in higher education institutions.

3.10.2 The ODE system, by virtue of its openness, flexibility, trans-modal educational delivery and use of ICT is ideally equipped to address the issue of inclusion of disabled persons in higher education. The new charter for ODE must accommodate a program devised to best serve the needs of this much-neglected segment of the learner population.

In conjunction with the above, the ODE system must also devise means of catering to the special needs of senior citizens who wish to enroll for higher education and training programs.

² *Code of Practice for the Assurance of Academic Quality and Standards in Higher Education :Chapter 3: Students with Disabilities*, October 1999, Quality Assurance Agency for Higher Education, UK

3.10.3 Persons with special needs must be integrated into the knowledge economy, and this entails ensuring that attempts are made to provide learners with disabilities a learning environment that is akin to that of their peers. New theories of learning, pedagogical practices and information technology procedures and strategies must be fruitfully deployed to create an enabling space for differently able persons in mainstream educational systems.

3.10.4 Appropriate provisions for learners with disabilities as well as senior citizens must become a core element of institutions in the ODE system, and be reflected in their policies, management, processes, activities, strategic planning and resource allocation

3.10.5 The following action points are recommended to orient the ODE system to the special needs of differently able learners and senior citizens:

- **Special Education Committees** must be set up in ODE institutions to address the special needs of learners with disabilities, ensure their participation and provide effective mechanisms for monitoring, evaluation of policies, and collection of feedback from the learners who are its beneficiaries.
- Admission criteria must be flexible enough to allow differently able learners and senior citizens alternative means for meeting program requirements
- Pedagogical tools must be shaped so as to allow adaptations for differently able learners. Learning objects from the OER must be manipulated into alternative formats for special learning needs, as must ICT enabled strategies and procedures. This could include, for example, Braille, colour-contrast texts and voice recordings for the visually disabled.
- The learning schedule and evaluation system for learners with disabilities should be necessarily protean, allowing for breaks and interruptions, re-scheduling of assignments and examinations, additional time for completion and provision of support services like of readers, writers etc.
- Academic facilities like placement, counseling as well as academic resources like online libraries etc must be made available to learners with disabilities and senior citizens who may not be as mobile as younger learners.
- All staff should be provided relevant training in providing support and services in the context of special education. In addition, special personnel must be appointed to take care of the needs and issues regarding differently able learners.

3.11 Linkages with Industry and Civil Society

3.11.1 Insularity is a major problem in the ODE system – a paradox in view of the alleged emphasis on openness, connectivity and provision of need-based, market- oriented training.

3.11.2 The current ODE system is viewed as second rate partly due to this insularity which prevents it from addressing relevant needs of both the learners and the employers. Partnerships and linkages with the various stakeholders will necessary imply the involvement of all partners and increase the relevance of the knowledge and skills imparted.

3.11.3 ODE institutions must evolve modes of partnerships and collaborations with diverse stakeholders in the knowledge society– industry, NGOs, civil society – within certain regulatory parameters, to enable for institutional diversification, impart need-based and relevant training for the market, and claim substantive recognition for itself.

3.11.4 Mechanisms must be devised for forging and recognizing partnerships of ODE institutions with industry and civil society, especially for employment and development oriented programs i.e. vocational/enabling courses (see section **3.2.5**) without compromising the autonomy of either. The underlying principle is the promotion of effective collaboration between the skill/knowledge imparting institution and the market/employer to provide relevant training to the learner.

3.11.5 The following pattern can form the blueprint for partnerships between ODE institutions and other organisations - government, non-government, profit-oriented or non-profit, providers of vocational training etc:

- Any ODE institution is free to propose partnership and invite or associate with any organisation of its choice, and vice versa. While collaborating on a course/program, it would be the responsibility of the ODE institution to document the content processes. The partnership could be strengthened by linking education with employment and apprenticeship. The autonomy given to the partner-organisation will be at the discretion of both (or more) of the collaborating institutions.
- The success and viability of the partnership will be validated, like any other program, through assessment by the National Testing Service (NTS). The impact of the program, its content, process documents etc will be evaluated accordingly. If the performance of the learners is satisfactory, the linkage would be accredited and learners would be accorded joint certificates recognized nationally.
- The cost of these programs should be kept as low as possible. In addition, banks should be asked to devise models for unsecured loans for learners to enable them to pay for these programs

3.12 Open and Distance Education and Professional Education Institutions

3.12.1 There is a great and growing demand for professional education in view of the growing services sector in the economy. In order to feed this demand, institutions offering professional courses like law, management and medicine are proliferating in the country. Most of them are unregulated. Several maintain poor standards and have poor infrastructure. Others charge exorbitant fees. And quality institutions offering professional education are both expensive and incapable of meeting the numbers seeking admission in these courses.

3.12.1 While the necessity of integrating ICT enabled ODE in professional education courses has been recognized, there are regulatory issues involved in allowing ODE to enter the ambit of professional education. The Bar Council of India (BCI), the Medical Council of India (MCI), and the All India Council for Technical Education (AICTE) are the de facto regulatory bodies for legal education, medical education and technical education respectively. ODE institutions attempting to offer courses in professional education are required to seek approval from each of the above bodies. While quality concerns regarding courses offered by ODE are legitimate, an effort must be made to enable ODE institutions meeting the required criteria to offer programs on professional education in tandem with other professional education institutions.

3.12.3 The use of ICT enabled ODE delivery is vital in the access, teaching-learning process and upgradation of skills in the professional world. Radical changes are required in the current situation to remove barriers to enable ODE to offer much needed services in professional education. In addition, professional education courses offered through ODE can significantly scale up delivery and lower costs for learners in this area.

3.12.4 The regulatory roadblocks for setting up professional education programs can be greatly alleviated with the establishment of an autonomous IRAHE (see section 3.6). In addition of the introduction of vocational and technical programs and relevant linkages with industry and market ODE has tremendous scope for several professional education programs, including continuing legal and medical education for faculty and professionals, legal and medical awareness for the public, teachers training, in service training and upgrading of skills etc.

The advantages of ODE technology and pedagogy are manifold– negligible displacement from the workplace, standardized packaging and transparent evaluation, cyber labs and simulation technology for application oriented programs, replicable training, increased access to the best material, affordable costs, flexible time-tables etc

The ODE mode must also be used in order to enable professionals working in the field to feed their skills back into the professional education system. Programs must be devised to facilitate this process of co-creation of value by learners, educators and practitioners.

3.12.5 Some suggestions for ODE intervention in professional education are given below:

- Legal Education³: ICT and distance education must be considered for maximum dissemination of legal knowledge across country by
 - creating portals and programs for increasing legal awareness of the public, feeding into the newly declared National Legal Literacy Mission, 2005-2010
 - providing continuing legal education for faculty members of law schools
 - providing in-service training for upgrading the skills of practitioners of law, thereby improving the skills of the subordinate judiciary
 - video-conferencing of lectures of faculty in India and abroad
 - starting courses for paralegal training to create an efficient cadre of paralegal workers
 - imparting legal knowledge to corporate executives

- Medical Education⁴: ODE can fill crucial gaps in the current medical education scenario by
 - imparting training and offering capacity building programs for paramedical workers, nurses, auxiliary nurse midwives (ANM), etc on an increased scale and in a relatively short period of time
 - providing continuing medical education for health professionals, faculty in medical education, paramedics, nurses ANMs etc
 - devise programs for public health awareness, for example first aid, maternal and post-natal care, etc.

- Technical Education: ODE can contribute in technical education process by:
 - increasing access for learners to infrastructural facilities like laboratories; for instance, by enabling asynchronous delivery of lectures at a time when these laboratories are free for use after class hours, for non-institutional learners
 - speeding up and leveraging skills training, upgrading and certification, following the AMIE (Associate Member of the Institute of Engineers) certification model of the Institute of Engineers, India
 - allowing a wider range of learners to access open education resources set up by experts in technical education and

³ See also Report of the Working group on Legal Education, National Knowledge Commission, 2007

⁴ See also Report of the Working Group on Medical Education, National Knowledge Commission, 2007 34

- supplementing hands-on lab work with cyber labs, simulation, etc
- Management Education: ODE can contribute in the field of management education by:
 - bringing down high costs of management programs for learners through ICT enabled, asynchronous, off-campus delivery
 - forging co-creation of value by developing educational packages where in-service knowledge and skills can be looped back into the education system for the benefit of the learners
- Technical/Vocational Education: ODE can introduce technical and vocational education required by the general degree holders as a part of their preparation for relevant degrees. This can be conducted through partnership with technological institutions, vocational boards and industry (see section 3.12) and their credits *may* be made essential (up to 33 %) in domain related areas, for increasing the employability of a graduate

3.13 Policy for Inclusion

3.13.1 Higher education in India is fraught with low enrolment and high drop out rates. The key to remedying the situation lies in framing a policy for inclusion that encompasses those who are forced to opt out of the system due to lack of access, systemic inflexibility and poverty.

3.13.2 The ODE system must devise mechanisms which go beyond its intrinsic openness, flexibility and cost-effectiveness to give the learners who are disadvantaged due to social, economic and geographical backwardness a chance to partake in the same educational experience as is available to their more advantaged peers.

3.13.3 This disparity in access to education must be addressed through special measures, so that our demographic dividend does not become a liability in the knowledge based economy.

3.13.4 While the state must provide an enabling framework and the raw infrastructure, policies for inclusion in open and distance higher education must be a joint endeavour of the system, its stakeholders and its beneficiaries.

3.13.5 The following measures are suggested as action points in the inclusion policy:

- *Access in remote areas*: The ODE network can reach wherever there is a provision for electricity and connectivity made by the State (minimum bandwidth 2mbps). Learning kiosks and centres must be set up at various points in the country (in areas with a viable population, at a viable distance from remoter,³⁵

sparsely populated outlying areas), in partnership with local entrepreneurs who would provide the learning services.

- *Cost*: For economically weak students, the cost of learning would be borne by the ODE institution (technology would enable exact estimation of the consumption of services and time spent by the aforementioned learner), to be later reimbursed by the State.
- *Funds*: Part of the revenue generated by the National Testing Service (NTS) can be put aside to provide scholarships for economically/socially backward and deserving students
- *Student Loans*: Banks must be encouraged to extend loans to all learners in need of financial assistance, with or without collateral, when they are admitted to institutions of higher learning. The following practices would possibly make loans more learner friendly ⁵:
 - Amount allocated for student loans should be increased
 - Interest rates should be learner-friendly, taking into account the public implications of higher education.
 - The collateral should be waived in special cases for needy and underprivileged learners
 - There should be no penalty if the learner wants to pre-pay
 - Loans to the needy learners should be considered “priority lending” by the Reserve Bank of India

⁵ See also Report of the Working Group on Management Education, National Knowledge Commission, 2007

3.14 Financial Requirements

Government funding in the initial stages would be required for the following:

- National Education Testing Service
- Credit Bank
- Common Open Resources
- Committee for establishing metadata standards (Technical Advisory Group)
- Group for Pedagogical Content Management
- Training programs for educators/administrators
- Raw infrastructure for networking and access centres
- Subsidies/resources for providing services to the needy students
- E-governance development

We propose that appropriate funds be earmarked for disbursement for the above in the **first 5 years**. Once the system is in motion, we hope that the resources will be generated from within the system itself.

EXECUTIVE SUMMARY

A robust, vibrant and well-managed open and distance education system is crucial for the continued development and management of the knowledge society in a country as large as ours. It is with this aim in mind that our Report takes stock of the current scenario and its deficiencies and distortions, offers solutions and projects a future best-model, keeping in mind the pulls and pressures of the 21st century. If implemented in the spirit in which they have been offered, our recommendations can bring about the much needed *long term paradigm shifts* in open and distance higher education, in the following processes:

1. Teaching-learning process

- a. Convergence of all pedagogical delivery modes and development of quality higher education for all.
- b. Precedence of learner autonomy through a credit bank system that is acceptable to all stakeholders and a learning support system that allows the learner to choose one's pedagogical trajectory.
- c. Emphasis on application and development oriented programs for situated learning
- d. Establishment of a national repository of common open resources and meta-databases.
- e. Distributed learning systems enabled by consortia of networked institutions, common open resources and shift to credit system

2. Evaluation process

- a. Shift from the traditional, periodic, memory-based examination system to a competency and capability testing system.
- b. Level-wise grading based on the credit system and personal performance portfolios.
- c. Creation of a national/common testing service supported by the expertise of all universities.

3. Infrastructure

- a. Complete integration of information and communication technology to enable dynamic evolution of new processes, i.e. digitisation, virtualisation, mass personalisation, reusable learning objects and e-governance.
- b. Institution of a robust network for teacher training and in-service skills upgrading and for the development of personnel capacity in the system.

4. Organisation and management

- a. Institution of a Standing Committee on Open and Distance Higher Education under the Independent Regulatory Authority for Higher Education (IRAHE)
- b. National testing services to be carried out transparently by an independent body.
- c. Creation of an independent credit bank.

5. Quality Assessment

- a. Combination of external quality evaluation by an independent body and internal, institutional quality control for maintenance of standards.
- b. Quality monitoring of currently operating correspondence courses and their improvement.
- c. Shift from institutional evaluation to evaluation based on learner's performance.

The operative recommendations to be implemented as soon as possible are as follows:

- (i) A systems framework to be established by appointing a Standing Committee on Open and Distance Higher Education. This statutory body will be charged with responsibility for the overall planning, coordination and monitoring. It must be accountable to the stakeholders at all levels and the Independent Regulatory Authority for Higher Education (IRAHE), which would be the appellate authority. It would also serve as the nodal agency for the National Education Foundation on common open resources, the Technical Advisory Group and the Advisory Group on Pedagogical Content Management.
- (ii) An autonomous National Education Testing Service to be established through legislation and invested with the functional power and responsibility to administer tests and evaluate all potential graduates in higher education
- (iii) An autonomous Credit Bank to be established for storing and filing credits acquired by every learner as well as one's personal portfolio. This implies a shift to the credit system of evaluation to enable the learner to undertake programs across systems and institutions.
- (iv) A national repository of Open Educational Resources to be developed through a collaborative exercise pooling in the effort and expertise of all institutions, under a National Education Foundation set up and funded for this purpose
- (v) Advanced information and communication technology to be integrated effectively in all aspects – access, pedagogy and governance. A national ICT infrastructure must be set up through State support for networking all ODE institutions and meeting the technological demands of the system. A Technical Advisory Body with representatives from the IT sector, telecom, space and industry must be

constituted to provide guidelines, set metadata standards, monitor interoperability, ensure flexibility and track the latest developments in application.

- (vi) An independent External Quality Assurance Cell (EQAC) to be set up under IRAHE to assess and evaluate ODE institutions at regular intervals, according to standards set by the Standing Committee. In addition, every ODE institution must have an Internal Quality Assurance Cell (IQAC) to conduct essential operations for ensuring that statutory quality compliances are met regularly.
- (vii) An autonomous and well-endowed Research Foundation to be set up to commission and facilitate multi-dimensional research in open and distance education for developmental and academic purposes. A peer-reviewed journal to provide a platform for ODE scholars to publish their work. Individual institutions should be encouraged to develop a culture for research, by holding workshops, conferences, and enabling a flow of ideas.
- (viii) A National Foundation, with Rs. 1000-2000 crores at its disposal, to be set up for disbursing funds to research local and traditional knowledge. Institutions that satisfy certain qualifying criteria will be funded to compile resources on the above for incorporation into the curriculum through common open resources
- (ix) Open and distance education to meet the needs of learners with disabilities as well as senior citizens, and Special Education Committees to be set up in each institution for this purpose.
- (x) An enabling policy environment to be created to enable links between open and distance education and industry, civil society, conventional and professional education
- (xi) Teacher training methodology to be changed, and new packages to be created and conducted at regular intervals for personnel capacity development, in addition to regular administration of tests for faculty and staff by the NETS. The B. Ed. curriculum to be revised and updated and made more relevant to distributed education.

Our recommendations in each of the several areas are inter-connected in view of the larger model. Therefore, implementation must take place in all the key areas, and must not be carried out piecemeal. We hope that our recommendations will pave the way for creating a system that meets the demand of the market, while simultaneously providing an opportunity for quality education to everyone.

ANNEXURE

(I) Some key technology standards being used internationally:

(i) **IEEE Learning Technology Standards Committee (LTSC) P1484:** Used by most of the groups around the world working to create specifications for areas related to learning. These groups cover far-reaching topics including learning object metadata, student profiles, course sequencing, computer managed instruction, competency definitions, localization, and content packaging.

(ii) **Advanced Distributed Learning (ADL) Initiative:** developed by the US Federal Government ADL initiative and their Shareable Courseware Object Reference Model (SCORM) for the application and integration of these learning standards.

(iii) **AICC: The Aviation Industry CBT (Computer-Based Training) Committee:** The AICC develops guidelines for the aviation industry in the development, delivery, and evaluation of CBT and related training technologies. The AICC also actively coordinates its efforts with broader learning technology standards organizations like IEEE LTSC, ADL, and IMS.

(iv) **IMS (Instructional Management System) Global Learning Consortium:** The IMS Global Learning Consortium, is developing and promoting open specifications for facilitating online distributed learning activities such as locating and using educational content, tracking learner progress, reporting learner performance, and exchanging student records between administrative systems.

(v) **The Dublin Core:** a metadata element set intended to facilitate discovery of electronic resources, it is widely used for resources in communities such as museums, libraries, government agencies, and commercial. It is an international, interdisciplinary undertaking which promotes a commonly understood set of descriptors that increases the possibility of finding what you are looking for across disciplines (i.e. semantic interoperability). The Dublin Core's Resource Description Framework (RDF) is designed to support the different metadata needs of vendors and information providers.

(vi) **World Wide Web Consortium (W3C):** MIT's Laboratory for Computer Science has provided numerous useful specifications and standards. These include standards relating to **Extensible Markup Language (XML)**, Web accessibility standards, and standards and a framework for Synchronized Multimedia Integration Language implementations (SIMILE) (www.w3c.org). (vii) **Extended Markup Language (XML)** has become a standard format for Internet/intranet data information exchange, serving as a means for

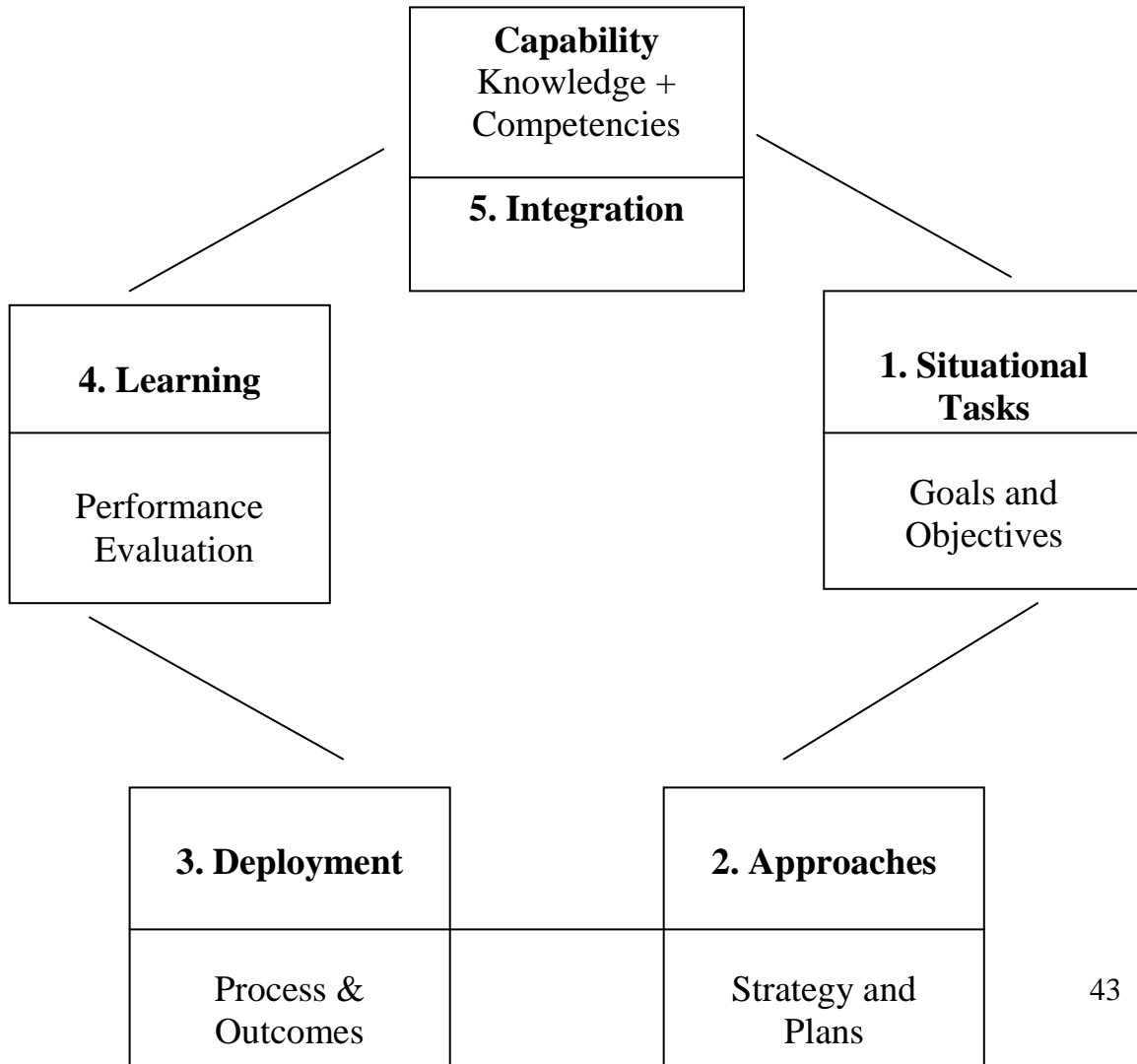
representing data to provide an open, Internet-based integration of cross-enterprise applications. It allows separation of style from content and provides a flexible model for multimode delivery of content in which different styles can be applied on the same data for different contexts or needs. Its structures can be easily parsed or indexed for search purposes. IMS is defining XML-based metadata vocabularies for standardized tagging of learning resources.

(viii) **Open Knowledge Initiative (OKI)**, started at MIT, O.K.I. specifications enable sustainable interoperability and integration by defining standards for Service Oriented Architecture (SOA). OKI's Open Service Interface Definitions (OSID) enables applications to be constructed independently of any particular service environment, and eases integration. It allows choice of end-user tools by providing plug-in interoperability. OKI's OSID's serve as a glue for a host of applications related to online education.

(II) Adaptation of the Baldrige Model for Internal Quality Evaluation in ODE
 (Prof. R. Takwale)

The following is an adaptation of the Baldrige Model for assessing educational excellence, especially in situational learning and development. The purpose is to issue guidelines to ODE institutions on how to use basic concepts of the model innovatively for quality assessment.

Cycle of Operations:



The cycle of operations proposed consists of

Situational Tasks → Approaches → Deployment → Learning → Integration → Reformed Situational Tasks.

The approach towards continuous educational reform involves evaluation and assessment of

- Processes
- Results

Under **processes**, ‘Approach’, ‘Deployment’, ‘Learning’, ‘Integration’ are linked to the goals and objects, inputs and throughputs, measures for feedback and their analysis and the knowledge or learning obtained and its further integration in the system for achieving higher results.

Under **results**, the Internal Quality Assurance Cell should seek the data showing organizational performance results and their levels, improvement rates and relevance.

Following are the brief and broad outlines for the situational development of the university:

1. Situational Tasks:

- a. The ‘situations’ consist of class /tutorial groups, college/university and society; and learners are students, groups of students and their virtualized forms.
- b. On the basis of needs analysis of students, stakeholders and market focus, situational and contextual tasks are identified. “Market” refers to sites where the knowledge, competencies and capabilities of students and institutions find applications and employment.
- c. In this step, goals and objects are identified. They may also be made to conform to the wider goals, mission and core values of the institution. Outcomes and performance achievement targets are fixed and decided depending upon the situation and context.

2. Approaches:

- a. Strategies and processes are identified or designed for achieving outcomes and are measured for appropriateness, effectiveness and systemic relevance

- b. The possibility of replication of methods and processes, and their potential for adoption or adaptation in all components of the university system are assessed for holistic development of the institution.
- 3. Deployment** refers to application of resources and implementation of action plans in a consistent and holistic manner. It also includes continuous assessment of these processes for improvement of overall operations.
- 4. Learning** refers to the outcome of the entire process, and the analysis of the performance. Performance evaluation must be followed by identification of required reform measures and inputs for improving processes and programs. The process should promote best practices, breakthroughs and innovations. It should also judge the outcome and impact of programs and activities through organization-wide systemic changes.
- 5. Integration** refers to
 - a. Aligning local approaches to the regional/national/ global goals and approaches,
 - b. Measurement, evaluation and suggestions for improvement of processes and outcomes/impact in other situational tasks, and
 - c. Harmonizing learning and improvement across the organization.

It must be noted that in partnerships with other organisations and institutions offering development products and services is essential to effect education for sustainable development. This involves linking with social, industrial and professional bodies at the local, regional, national and international levels.

Mobilization of continuous improvement processes require the following to be in place:

- **Organization and management systems** for market information, needs assessment of students and stakeholders and management of partners and resources.
- **Effective leadership** at all levels for forming and managing groups and promoting their interests through sharing and collaborative learning.
- **Common purpose and shared goals** for forming partnerships and consortia for cooperative and collaborative working and developing a culture of openness, accountability and participatory decision making.

The model envisions a continuous improvement of the processes of situated learning and adds transformative value in continuously building up the capabilities of students, stakeholders and the organization.