



International Forum on Adopting an ICT Perspective to Education and Learning

31st October to 4th November 2016

New Delhi, India

A Report

Prepared by

**Central Institute of Educational Technology
National Council of Educational Research and Training
New Delhi, India
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FOREWORD

Information and Communication Technology (ICT) has become, within a very short time, one of the basic building blocks of modern society. Many countries now regard understanding of ICT and mastering the basic skills as part of the core of education, alongside reading, writing and numeracy. The recent efforts of the Government of India (GoI) seek to deepen the use of ICT in almost every sphere of life. The Digital India Campaign (2015) strives to transform India into a digitally empowered society and knowledge economy by focusing on the three vision areas i. Digital Infrastructure as Core Utility to Every Citizen, ii. e-Governance and Services on Demand and iii. Digital literacy and empowerment of citizens. The three cardinal principle of the draft New National Education Policy (2016) viz., access, equity and quality could be served well by harnessing the huge potential of ICT. Any-time and any-where mode of delivering quality education using ICT is one such implication of technology in education. The Govt. of India undertakes various activities to widen educational opportunities promote equity and improve quality of educational processes at all level.

The comprehensive choice of ICT for holistic development of education can be built only on a sound policy. The initiative of ICT Policy in School Education aims at preparing youth to participate creatively in the establishment, sustenance and growth of a knowledge society leading to all round socio-economic development of the nation and global competitiveness. The ICT policy wishes to create an environment to develop a community knowledgeable about ICT and an ICT literate community which can deploy, utilise, benefit from ICT and contribute to nation building.

The policy intends to promote universal, equitable, open and free access to ICT and ICT enabled tools and resources to all students and teachers. It also intends to promote the development of local and localised quality content; and to enable students and teachers to partner in the development and critical use of shared digital resources. It aims at the development of professional networks of teachers, resource persons and schools to catalyse and support resource sharing; academic support to students, and management and networking of school managers and administrators. This results in improved efficiencies in the schooling process, research, evaluation and experimentation in ICT tools and ICT enabled practices in order to inform, guide and utilise the potentials of ICT in school education.

We are glad that India has implemented the first phase, and now we are in the second phase of implementing the quality concerns, developed by UNESCO in collaboration with its Member States, known as the General Education Quality Analysis/Diagnosis Framework (GEQAF). The objective is to strengthen national capacity in assessing education systems based on local knowledge and expertise. The diagnostics/ analysis guided by the GEQAF should strengthen both the qualitative and quantitative knowledge base required to design and implement responsive, targeted and timely quality improvement interventions.

This event has strengthened the relationships between the participating nations and India in order to ascertain quality education to the child whom it is least accessible by the able tools of ICT.

Prof. Hrushikesh Senapaty
Director, NCERT, Delhi, India

ACKNOWLEDGEMENTS

Firstly we would like to express our sincerest gratitude to Shri Upendra Kushwaha, Minister of State for Human Resource Development, Government of India for taking some time out from his busy schedule to inaugurate the Forum on October 31, 2016. His exhortation to take the ICT to the masses was truly inspiring. We take this opportunity to express our sincerest thanks to Ms. Angelina Angie Matsie Motshekga, Minister of Basic Education, Republic of South Africa; Mr. M.I. Kgatjepe, Provincial Minister, Limpopo, South Africa; Mr. Andrek Lesufi, Provincial Minister, Republic of South Africa for being part of the Forum. Their support and encouragement during the inauguration are duly acknowledged. We take this opportunity to thank Dr. Mmantsetsa Marope, Director, UNESCO-IBE, Geneva for lending her voice and support for the Forum. Although she could not make it to the Forum, her thoughts and guidance remained reflected throughout the event.

We express our profound thanks to Professor Hrushikesh Senapaty, Director; Prof. B.K. Tripathi, Joint Director, NCERT, Prof. Rajaram S. Sharma, Joint Director, CIET, NCERT and Prof. Sridhar Srivastava, Secretary, NCERT for their guidance, encouragement and advice at every stage of the event.

We extend our heartfelt thanks to Shri. Maneesh Garg, IAS and Joint Secretary to the GoI, Department of School Education and Literacy, Ministry of Human Resources and Development for sparing his valuable time and addressing the forum.

We would like to express our earnest thanks to the team at UNESCO-IBE, Geneva for their all-round support in the successful conduct of the Forum. Thanks are due to Dr. Tekaligne Godana, Senior Programme Specialist, UNESCO-IBE, Geneva; Dr. Clarisse Olivieri de Lima, ICT Consultant, UNESCO-IBE; Ms. Emily Sheppard, Education Specialist, UNESCO-IBE, Geneva. We take the opportunity to thank Mr. Jack Fermon, Engineer, Google; Mrs. Karen Walstra, Program Manager (Educational Technology), Google and Ms. Bani Dhawan, Head of Education, Google India for extending their support for the Forum.

We would also like to thank all the facilitators of the forum for enriching us with their vast expertise and knowledge. They all made the session activities interesting and thought provoking. We would also like to thank Mrs Abha Sahgal, Principal, Sanskriti School, Delhi and their staff members who had made the site visit to their school a place for gaining real experience of ICT- pedagogy integration.

We would like to express our sincere thanks to Ministry of Human Resource Development, Government of India for according approval to hold this Forum. Thanks are due to the officials of Government of India in the Ministry of Home Affairs and Ministry of External Affairs for extending necessary clearances to the International Participants.

We would like to thank all participants who came from various parts of the world including India. Their sharing of experiences and enthusiastic participation in deliberations made the Forum lively and enriching for everyone. We take this opportunity to express our gratefulness to partner organisations, viz., International Bureau of Education (IBE-UNESCO), Geneva; Institute for Information Technologies in Education (IITE-UNESCO), Moscow and Google Inc. for providing us the opportunity to host this event in India and for its successful conduct.

We would like to profusely thank all the members of the organising committee from CIET-NCERT (Graphic, Registration, Food, Transport, Venue, Technical, Media, Rapporteur, Office & Account, etc.) for accomplishing the tasks with aplomb. It was their untiring support that made the Forum possible without any hiccup.

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LIST OF ASSOCIATED ORGANISATIONS AND ITS MEMBERS

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2.	Dr. Clarisse Olivieri de Lima	ICT Consultant from Portugal	UNESCO-IBE
3.	Ms. Emily Sheppard	Education Specialist	UNESCO-IBE
4.	Mr. Jack Fermon	Engineer	Google
5.	Mrs. Karen Walstra	Program Manager (Educational Technology)	Google
6.	Ms. Bani Dhawan	Head of Education	Google India Pvt Ltd
7.	Ms. Sunit Kaur Ubhi	Programme Manager	Google India Pvt Ltd
8.	Prof. H.K.Senapaty	Director	NCERT, Delhi
9.	Prof. Rajaram S. Sharma	Joint Director	CIET, NCERT, Delhi
10.	Prof. Sridhar Srivastava	Secretary	NCERT, Delhi
11.	Prof. Amarendra P. Behera	Head, DICT & Training	CIET, NCERT, Delhi
12.	Dr. Abhay Kumar	Assistant Professor	CIET, NCERT, Delhi
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LIST OF ORGANISING TEAM

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LIST OF ABBREVIATIONS USED IN THE REPORT

AIR	All India Radio
CBSE	Central Board of Secondary Education
CCE	Continuous and Comprehensive Evaluation
CC	Creative Commons
CEC	Consortium for Educational Communication
CIET	Central Institute of Educational Technology
DTH -TV Channels	Direct-to-home Television Channels
EIS	Educational Indicators System
GDP	Gross Domestic Product
GEQAF	General Education Quality Analysis/Diagnostic Framework
GoI	Government of India
GNU	GNU's Not Unix
Gsuite	Google Suite
ICT	Information and Communication Technology
IGNOU	Indira Gandhi National Open University
IIT	Indian Institute of Technology
IPR	Intellectual Property Rights
IRMB	Information Resource Management Branch
IT	Information Technology
MCQ	Multiple Choice Questions
MHRD	Ministry of Human Resource and Development
MOOCs	Massive Open Online Courses
NCERT	National Council of Educational Research and Training
NIE	National Institute of Education
NIOS	National Institute of Open Schooling
OER	Open Educational Resources
PSSCIVE	Pandit Sunderlal Sharma Central Institute of Vocational Education
NPSSE	National Programme on School Standards and Evaluation
NPTL	National Programme on Technology Enhanced Learning
NROER	National Repository of Open Educational Resources
NTG	National Technology Group
NUEPA	National University of Educational Planning and Administration
RIEs	Regional Institute of Education
RMSA	Rashtriya Madhyamik Shiksha Abhiyaan
SCERT	State Council of Educational Research and Training
SIDS	Small Island Developing States
SSEF	School Standards and Evaluation Framework
STEM	Science, Technology, Engineering and Mathematics
SWAYAM	Study Webs of Active Learning for Young Aspiring Minds
TPACK	Technology Pedagogy Content Knowledge
TVET	Technical and Vocational Education and Training
UGC	University Grants Commission
UNESCO-IBE	United Nations Educational, Scientific and Cultural Organisation- International Bureau of Education
UNESCO-IITE	United Nations Educational, Scientific and Cultural Organisation- Institute for Information Technologies in Education

CONTEXT

With financial support from Ministry of Human Resource Development of the Government of India (MHRD-GoI), National Council of Educational Research and Training (NCERT) had undertaken a pilot study for implementation of UNESCO's (United Nations Educational, Scientific and Cultural Organisation) General Education Quality Analysis/Diagnostic Framework (GEQAF) in India in the States of Madhya Pradesh and Meghalaya during the FY 2012-13. The study helped to diagnose the strength, weakness; opportunities and threats (SWOT) in the school education system of Madhya Pradesh and Meghalaya. The Study also identified priority actions to be initiated by the state and national agencies working in the area of school education and teacher education, which included:

- Orientation/training of teachers and teacher educators in curriculum analysis, development and training on pedagogy,
- Orientation on Continuous and Comprehensive Evaluation (CCE),
- Sensitization of teachers on gender issues, ECCE, adolescence education, substance abuse and guidance and counselling and
- Capacity building on Information and Communication Technology (ICT) in Education.

Our country is moving towards the second phase of this project from diagnosis to implementation of interventions in which a detailed plan of action for interventions based on situation analysis in the above mentioned 4 priority areas has to be made. For this, UNESCO-International Bureau of Education (IBE) has agreed to support the countries' efforts both through direct technical assistance and by providing platforms to share experiences and the best practices from around the world and build country's capacity to harness technology to improve their education system.

The Digital India Campaign (1st July, 2015) of the Government of India too emphasises on creation of ICT infrastructure, promoting e-governance/EMIS for delivery of services, schemes, programs and digital literacy of citizens. Therefore, further work on ICT in education has been initiated in collaboration with UNESCO-IBE.

As the initial step, UNESCO-IBE in partnership with Google and in collaboration with the UNESCO-International Institute of Technology for Education (IITE) in Moscow; NCERT in New Delhi and the MHRD-GOI proposed to organise an International Forum on adopting an ICT Perspective to education and learning. This International Forum is part of IBE's multi-pronged approach to strengthen education systems for sustained improvement of education quality, equity and inclusion. The Forum was held in New Delhi, India, from October 31st to November 4th, 2016.

The objectives of the forum was:

- To Increase confidence of participants to integrate ICT in teaching, learning and assessment
- To infuse a better understanding of available ICT tools and methods that will enable innovations to improve access, quality, equity and inclusion in education.
- To share best practices toward the integration of ICTs in diverse aspects of education system.
- To address key challenges in education and leverage technology for teaching and learning process.
- To transform the students learning through various tools ICT platforms like MOOCs and Google suite.
- To sensitize the stakeholders on nitigrities to develop OERs, identify and use existing OERs and reflect on licensing under creative commons.

This international Forum was designed differently from the common practices of conferences and workshops characterized by extensive presentations and very little interaction and hands-on activities. When it comes to the use of ICT in Education, this need for experiencing it in practice is essential. Therefore, the Forum sessions were designed to be interactive and build on concrete cases of ICT integration and included well thought practical hands-on activities for the participants as well as some visits to sites demonstrating best practice application of ICTs in education. Best practice cases from countries like India, Lithuania, Mauritius, Oman and South Africa were presented in innovative and engaging ways. At the end of the Forum, the participants had a better understanding of available ICT tools and methods that would enable innovations to improve access, quality, equity, inclusion and efficiency in education system.

The participants for the forum were from Azerbaijan, Botswana, Egypt, Gabon, India, Lithuania, Oman, Seychelles, Saudi Arabia, South Africa and Swaziland. Experts from Brazil, Mauritius and the United States also participated. IBE partner Google also contributed by providing experts to facilitate different Forum sessions. From India a group of officials/faculty representing NCERT, State Council of Educational Research and Training (SCERTs), Rashtriya Madhyamik Shiksha Abhiyaan (RMSA- a flagship programme to achieve universalisation of secondary education), school teachers, National ICT awardees from schools, MHRD-GoI and other autonomous bodies under MHRD-GoI participated.

Outcomes of the Forum

The outcomes of the Forum can be outlined as stated below.

- Sharing the ICT practices adopted by various countries under the project of GEQAF
- Sensitization and awareness of different assistive technologies used for Children with Special Needs (CWSN)
- Awareness about various projects initiated by GoI in the area of ICT like e-pathshala, SWAYAM, Shalasiddhi, etc.
- An enhanced understanding of various Google suite tools for improving teaching and learning and empowering teachers and students
- Cognisance of immense potential of MOOCs and challenges associated with it.
- Understanding the importance of Open Educational Resources (OERs) and underlying licenses
- Appreciation of the development of the school curriculum and material for professional development through Technological Pedagogical Content Knowledge (TPACK) framework
- Exposure to Google classroom
- Sensitization to students' needs about use of ICT in school education system.
- Recognition of integrating ICT in the teaching, learning and assessment.

PROCEEDINGS OF THE FORUM

BRIEF REPORT OF DAY 1 AND SESSION PROCEEDINGS

Day's Brief

The 'International Forum on Adopting an ICT Perspective to Education and Learning' was inaugurated by Shri Upendra Kushwaha, Minister of State for Human Resource Development (MHRD), Government of India. Professor Hrushikesh Senapaty, Director, NCERT, New Delhi gave the welcome address and discussed about the need of ICT initiatives to improve access and quality of education to each and every child worldwide. He welcomed all the dignitaries present on the dais that included the Chief Guest; Ms Angelina Angie Matsie Motshekga, Minister of Basic Education, Republic of South Africa; Mr. M.I. Kgatjepe, Provincial Minister, Limpopo, South Africa; Mr. Andrek Lesufi, Provincial Minister, Republic of South Africa; Dr. Tekaligne Godana, Senior Programme Specialist, UNESCO-IBE; Shri Maneesh Garg, Joint Secretary, Department of School Education and Literacy, Ministry of Human Resource Development (MHRD), Government of India (GoI) and Prof. B.K. Tripathi, Joint Director, NCERT, New Delhi. He also welcomed the participants from the participating countries like Azerbaijan, Botswana, Egypt, Gabon, India, Lithuania, Oman, Seychelles, Saudi Arabia, South Africa, Swaziland, Brazil, Mauritius and the United States of America; and the NCERT faculty members from all the constituent units including Regional Institutes of Education (RIEs), Pandit Sunderlal Sharma Central Institute of Vocational Education (PSSCIVE), the National ICT Awardees, officials from SCERTs, RMSA, school teachers, senior officials from MHRD-GoI, Autonomous bodies under MHRD-GoI and officials from Google. Overall 180 participants participated in the Forum (List of Participants in Annexure 1).

The opening remarks made by Sh. Maneesh Garg informed the august audience about the various initiatives taken by the Government in order to strengthen ICT in Education in India. Brief opening remarks were given by the South African Minister, Ms Angelina Angie Matsie Motshekga. She emphasised the need of UNESCO's support in her country to make e-Education successful. Mr. M.I. Kgatjepe followed the discussion about the need of adoption of ICT perspectives in his country. Later, the chief guest Hon'ble Minister of State for Human Resource Development, GoI, Mr. Upendra Kushwaha officially opened the ICT Forum. He briefly mentioned the Government of India's Digital India campaign in his remarks. He also focussed on the need of making our world a global village and providing comparative quality of education to every child. He emphasised the need of language translation of e-resources for better access and impact. The official opening was followed by the vote of thanks proposed by Prof. B.K. Tripathi. He thanked all the dignitaries and the Chief Guest. He laid focus on the objectives and importance of the ICT Forum and congratulated the organisers for the successful organisation of the event.

After the inaugural session, two keynote speakers Dr. Mmantsetsa Marope, Director UNESCO-IBE and Ms. Bani Dhawan Head, Google Education, India made their presentations. Dr. Mmantsetsa Marope gave her keynote address through a video-conferencing session, as due to her ill health she was not able to attend the program in person (Excerpts of speech given in Annexure 2). The next keynote address was given by Ms. Bani Dhawan where she focussed on transforming the world for 21st century learning.

The day ended with a brief interaction of the organisers, Dr. A.P. Behera and Dr. Abhay Kumar, along with IBE-UNESCO representatives Dr. Clarisse Lima, Ms. Emily Shepard and Dr. Tekaligne Godana with the participants. The interactive session gave the participants the opportunity to clear their doubts. They also briefed the participants with the road map of the proceedings for the rest of the days of the forum (Programme Schedule in Annexure 3 and List of Facilitators along with their brief profile in Annexure 4). The evening was ornamented with a cultural evening organised by Dr. Sharbari Banerjee, Assistant Professor, Department of Education in Art and Aesthetics, NCERT and her team with musical instruments i.e. Tabla, Synthesiser and Violin. Various stalls like e-Pathshala, NROER, SWAYAM on MOOCs, SWAYAM PRABHA, ICT Curriculum, Google, IBE-UNESCO and IITE-UNESCO were showcased.

KEY NOTE ADDRESS

TOPIC: Transforming for 21st century learning

Name of the facilitator: Ms. Bani Dhawan, Head of Education, Google India

Ms. Dhawan opened the session with a relevant concern of empowering the school (Presentation provided in Annexure 5). She discussed the difficulty of keeping up the pace with “GenZ”, as she called it. Google in India is going through two major trends; one is the emergences of the mobile market and the other is the demographic dividend for future India. She paid great inferences on identifying the right problem than solving it. Also, she reflected upon the uses of Internet in education and other related areas. As the need of skill job has increased, there is an urgent need for the involvement of ICT in education. The need of the hour, she stated, is we have to innovate and participate with our users to make Internet work for India. Ms. Bani stressed that Google is different from the mature market; they have innovated and collaborated with the user to really innovate for young generation learners of India that need skills for employment.

The session gave an enriching insight into the transformation possible with the incorporation of ICT in education. She elaborated by citing many examples, one of which included Graham Bell, who was very young when he created the telephone. The session focused on the nurturing of young minds in a comfortable environment to enhance creativity and innovation. Ms. Dhawan further elaborated on the need to collaborate with the consumers to produce as she encouraged this ecosystem. She talked about the classroom setup which can be an exciting experience for the learners by being “more project based than pen and paper.”

She proceeded that all of us really need to be cognizant with the idea of accessing information on our fingertips, thereby empowering GenZ to provide them an environment which is safe and guided. However, she suggested that locking certain apps won’t help as learners have the right to access the information. Giving children the freedom to explore and to enable them to be independent thinkers, she added, is the need of the present times. She expressed her concern on the changing nature of jobs in the near future, demanding knowledge of the world.

The presentation informed the audience about the importance of identifying the right problem and solve it. She promoted the idea of the teacher as a facilitator rather than simply the source of information; the teacher can convert information into intelligence. She proposed that internet can be effectively utilised while she exemplified it by Allo, a messaging app that supports Indian languages. There is a need to re-imagine new models of learning within school systems as Google cannot provide with solutions or services, it can only provide technology that is adapted with the need and requirement of users. She informed that feedback is important for new technologies like Flipped classroom and Blended learning. Flipped classroom is provided with e-resources beyond the classroom. She shared the experience of implementing ICT in the future classroom of Google in Hyderabad, Nagpur and Ahmedabad, working with SCERT, and their research in Information Resource Management Branch (IRMB) to set up a classroom lab in future.

As a Google official, she briefly touched upon Google Education groups in 30 states of India that are learning from each other on how to use Internet technology. When investigating in future, sustainability, equity and impact should be kept in mind. Google provides this platform of collaboration and access. She mentioned Google Suite account (Gsuite) which enable institutions to create their own network which is secure and well managed. She also briefly touched upon the features of Google Chrome books, Android ecosystem and other ecosystems available in Chromebook. Ms. Dhawan’s address to the august gathering was extremely enriching and informative as she hinged on her personal experiences easily understood by the audience.

BRIEF REPORT OF DAY 2 AND SESSION PROCEEDINGS

Day’s Brief

The second day of the Forum started with a recapitulation of the previous day’s proceedings done by Dr. Clarisse Lima, UNESCO-IBE. She briefed the participants about the sessions to be held on Day 2. The first technical session of the second day was jointly taken by Dr. Natalia Amelina from Institute for Information Technologies in Education, UNESCO-IITE, Moscow and Dr. Anupam Ahuja, Head, Department of Education of Groups with

Special Needs (DEGSN), NCERT. Dr. Amelina discussed about designing e-learning environment for education and social inclusion of specially abled students. The joint session was taken forward by Dr. Anupam Ahuja with special emphasis on Assistive Technologies in School Education, which was supported with hands-on using exemplar inclusive learning material.

The second session was jointly taken by Prof. Uma Kanjilal of IGNOU, New Delhi on Study Webs of Active Learning for Young Aspiring Minds (SWAYAM) - A MOOCs platform developed by MHRD-GoI, which offers courses across the education levels and across the subject areas, and Swayamprabha, initiative of MHRD-GoI which offers 32 Direct-to-home (DTH) Educational Television channels across the country. The joint presenter in this session, Prof. Pranati Panda, NUEPA, New Delhi, discussed on Shala Siddhi which is a National program on School Standards and Evaluation.

The day was concluded with the session by Prof. Amarendra Behera, CIET-NCERT on e-Pathshala, a mobile app and website offering e-content (e-textbooks, audio-videos, periodicals, curricular resources etc.). The presentation was followed by a site visit to CIET-NCERT. It was coordinated by Prof. Lal Singh, Media Production Division, CIET-NCERT. The visit acquainted the participants with the states of art Media production facilities- studios, control room etc. and its operations at CIET-NCERT.

Session Brief

Session 1

TOPIC: Designing e-learning environment for education and social inclusion of specially abled students

Name of the facilitator: Dr. Natalia Amelina, Senior Specialist of the UNESCO-IITE, Moscow

Dr. Natalia began the session by introducing each participant to the ‘United Nations Convention on the Rights of Persons with Disabilities.’ This was followed by an intense discussion on various barriers including the physical, social and economic barriers faced by children with special needs. She raised crucial questions regarding overcoming these barriers. To keep the participants’ interest intact in the session, Dr. Natalia Amelina showed a documentary film titled ‘I am not my disability’ on cerebral palsy. It sensitised the participants towards special children and how ICT can help in overcoming their hardships in the field of education. The documentary stressed that each child with special needs is unique in his/her ability to create wonders in this world.

Both the national and international participants participated in the interactive session with great zeal and vigour. About 10 minute discussion took place on the mainstream technologies like computers, web browsers and word processors, and about assistive technologies like screen readers and hearing aids. Typical classroom technologies and the technologies for persons with motor impairments were also included in the discussion. Sensitivity towards the needs of children with special needs was intensified and focused upon throughout the session. Linking ICT in a useful manner with education to overcome the barriers faced by children with special needs was the edifice of her presentation. She informed the audience regarding the modifications possible in infrastructural facilities, curriculum design, teacher training etc. to improve ICT professional standards for a better learning experience for children with special needs. The session was highly interactive, informative, fruitful and enriching.

Session 1

TOPIC: Assistive technologies in school education: Exemplar inclusive learning material

Name of the facilitator: Prof. Anupam Ahuja, Head, Department of Education of Groups with Special Needs, NCERT, New Delhi

The session enabled the audience to ponder over inclusive education that implies “all for the children for all the children”. Prof. Ahuja addressed a sensitive issue about the needs of children with difference. The idea was not simply to discuss about the children with special needs, rather to stress that all young learners have something unique about them. In a pictorial way, she illustrated that exclusion could be social, economic, cultural, lingual and the like. Her energetic talk urged the listeners to pose questions and pen down all the significant details Prof. Ahuja shared in the discussion.

She introduced Barkha: A Reading Series for All as she focused on equal learning for all learners. Barkha, a Graded Reading Series was developed by the Department of Elementary Education (DEE), NCERT that focuses on developing reading skills during early years, learn to read with meaning and for leisure, re-read previously read books and understand several concepts from various perspectives. She elaborated that it has four levels consisting forty stories. Each story is in a form of a small booklet across four levels and five themes. The stories, she added, have five broad themes namely relationships, birds-animals, musical instruments and games and toys, and things around us and food.

The contents of the presentation included an orientation to the Barkha series that was successfully illustrated with a sample story, followed by the discussion on the print and digital version of the book. The stories in the Barkha series are based on children's contexts and everyday experiences, she explained. Every theme has eight stories revolving around events/problems. Illustrations on every page are provided to give flight to children's imagination. Sentences are based on spoken language. Characters are of intended readers' age. Having explained the features of the book, she also described the variations in the levels that are as follows: sentences and illustrations, number and complexity of sub-plots, and syntax. She demonstrated how the levels are colour-coded as a parameter to assess the learner's progress.

The focus of the discussion was on the needs of the disabled children, who as she stated "often shy away from independent reading". The series is an outcome of a number of discussions and workshops among experts at a national level. She reported that they came to a conclusion that children need to go beyond the textbooks and the prescribed curriculum to develop a sense of confidence and build camaraderie among peers. This can be achieved through the use of assistive technologies and incorporating Principles of Universal Design for Learning (UDL) in the books. She also delved deeper to make the audience aware of the rationale behind it. To provide supplementary reading experience for early graders according to UDL standards; to give multi-sensory experiences to readers (Tactile, audio and video); and to respect the diverse reading ways and choices were the reasons behind the need to adopt this practice. It is for the first time, she added, that NCERT has ventured into the area of adapting reading material for early graders according to UDL principles.

The unique features of the print version of the book were demonstrated. The print version uses Poly Braille that is invisible, has longer shelf life than the conventional Braille, used on both sides of the paper, and can be imposed on printed text making it accessible to all including the non-sighted. She briefly pointed out the advantages of the print text. Each picture is made in high resolution, highlighting the key ideas. To facilitate ease of use, the pages used are thicker and of higher quality. It also accommodates Braille text on both sides. Page gradation to make it easy for all children to turn each page. Safe and durable binding using 'wiro', binding (use of staples can be dangerous for young children). Regular book binding will not allow the books to open flat for Braille reading. A Note for Teachers and Parents at the end of each story booklet in Hindi and English to facilitate reading. This note includes a story introduction to each story; parents and teachers are expected to read this note aloud to the children.

Further, Prof. Ahuja talked about the digital version of the text. As she rightly said "Assistive technologies can help in mastering effective reading strategies which enable children with varying needs to excel in the future." Technology is indeed an equaliser; hence she introduced the audience with the key features of the Digital version of the Barkha series. It can be accessed on computers, laptops, mobile phones and tablets. Also, to be available on NCERT website as part of e-Pathshala, all the features of the print version are retained in the digital version which is accompanied by a "how to use" section. It has a friendly packaging: 40 story book cover pages displayed in a bookshelf. Also, the content can be viewed in 3 different background colour combinations for the child to view as per preference and need. To highlight key words, flash cards appear with a picture to reinforce words through real images. Key visuals on each page made in high resolution. She also provided the link of the digital version on the NCERT website.

Finally, she illustrated how schools in India are incorporating the series effectively in their everyday classroom teaching. Maharani Gayatri Devi Girls' school, Jaipur, Rajasthan and Blossoms School, Bhubhaneswar use the print version of the text. The digital version is successfully implemented in Saksham, Delhi and Umang, Jaipur, Rajasthan. She concluded using a dialogue between a businessman and a teacher the importance of inclusion; emphasising that children are not products that can be measured or competed against each other, but humans with flesh and blood who need care and nurturance.

Session 2

TOPIC: SWAYAM (Study Webs of Active Learning for Young Aspiring Minds): MOOCs for school and Higher Education

Name of the facilitator: Prof. Uma Kanjilal, Library and Information Science, Director I/C of Advanced Centre of Informatics and Innovative Learning (ACIIL), Indira Gandhi National Open University (IGNOU), Delhi, India

Prof. Uma introduced the SWAYAM and SWAYAM PRABHA programme initiated by MHRD, GoI to the participants. She introduced the national co-ordinators for this programme, National Programme on Technology Enhanced Learning (NPTEL), Consortium of Education & Communication (CEC), Electronic Media Production Center (EMPC)-IGNOU, CBSE, NCERT & NIOS. She began the session by informing the audience that the soft launch of the programme was done on 15th August, 2016. The session went ahead with the case for MOOCs as viable solution and mass education in India. The programme SWAYAM was conceived as a product of Digital India initiative of MHRD. Interactive session was conducted on the four words of MOOC i.e. Massive, Open, Online, Course. She raised a relevant question “Is the MOOC really open?” to brainstorm the participants. Explanation was given on the different components of MOOCs, growth of MOOCs as 550+ universities with 4200+ courses serving 35 million students was also on the agenda.

She elaborated on the NPTEL Online Certification Exam by IIT. Examples were cited of online courses and proctored exam conducted by NPTEL. Open- Edx features of Certification programme were also stated.

Other important points stressed by Prof. Uma Kanjilal, IGNOU during the session were:

- The objectives of SWAYAM is to provide the best teaching learning resources to all; bridge digital divide for who have not been able to join the mainstream and also the most disadvantaged sections
- Indigenously developed IT platform of SWAYAM was showcased to the participants
- It's one stop web and mobile based platform
- Host of various courses, taught in classrooms from 9th class till post-graduation was also demonstrate
- Emphasis was given on 4 quadrants of SWAYAM (1) video lecture, (2) reading material that can be downloaded/printed (3) self-assessment tests through tests and quizzes and (4) an online discussion forum for clearing the doubts
- High quality learning experience and peer interaction features
- Hybrid model of delivery of high quality education
- In order to ensure best quality content is produced and delivered, the role of seven National Coordinators were discussed
- User-friendly ecosystems of SWAYAM were demonstrated such as Single window, Centralised, Integrated, Multi-lingual
- Website demonstration was done and registration process for courses delivered through SWAYAM (available free of cost to the learners) was presented
- Elements of SWAYAM such as syllabus template, surveys, overview, time line, announcements, instructions were stressed upon
- Assessments through MCQs, Assignments, Activity based and Peer evaluations were showcased
- SWAYAM PRABHA, an educational channel programme was shown. All the 32 DTH channels launched were listed
- Major issues that require immediate attention with SWAYAM were also discussed such as 20% of credit earning approved by UGC, mentoring 30 million students, window shoppers registering for SWAYAM, retaining engagement to encourage learning, increasing acceptance by other universities, conducting proctored exams, etc.

Session 2

TOPIC: National Programme on School Standards and Evaluation Shaala Siddhi: An initiative towards school improvement

Name of the facilitator: Prof. Pranati Panda, Professor of Comparative Education and International Cooperation, NUEPA, Delhi, India

She began the session by explaining Shaala Siddhi as a programme meant for ‘School Improvement through School Evaluation’ (SSEF). It proceeded by introducing NUEPA objectives and its relevance, the challenges of school development and empowering schools through the use of ICT.

Focus was given on the need for effective schools and improving school performance in the Indian education system to provide quality education for all children. As a major step towards comprehensive school evaluation as central to improving quality of school education in India, National Programme on School Standards and Evaluation has been initiated by National University of Educational Planning and Administration (NUEPA), under the aegis of Union Ministry of Human Resource Development.

The School Standards and Evaluation Framework (SSEF) comprise seven ‘Key Domains’ as the significant criteria for evaluating performance of schools and 45 core standards. The Framework has been developed through a participatory and mutual consensus approach on ‘How to evaluate diversified Indian schools for Incremental Improvement’. The SSEF has the flexibility that makes it eminently suitable for adaptation, contextualization and translation in state- specific languages. It has been designed as a strategic instrument for both self and external evaluation. Both the evaluation processes are complementary to each other and ensure that the two approaches work in synergy for the improvement of the school as a whole.

As part of the SSEF, a ‘School Evaluation Dashboard-e Samiksha’ has been developed to facilitate each school to provide consolidated evaluation report, including areas prioritized for improvement. The School Evaluation Dashboard is developed both in print and digitized format.

The School Evaluation Dashboard, obtained from each school, will be consolidated at cluster, block, district, state and national - level for identifying school- specific needs and common areas of intervention to improve school performance. A web-portal and Mobile App on School Standards and Evaluation are in the process of development.

She informed that in order to translate the objectives of National Programme on School Standards and Evaluation (NPSSE) to institutionalize ‘School Evaluation for Improvement’, a strong operational plan has been formulated to extend support to each state. A dedicated unit at NUEPA is leading this programme under the guidance of National Technical Group (NTG) in strong collaboration with the states.

Post Lunch Session

TOPIC: e-Pathshala: A mobile platform for accessing digital books and other digital resources

Name of the facilitator: Prof. Amarendra Behera, Head, Department of Information and Communication Technology & Training Division, CIET- NCERT, Delhi, India

The post lunch session of the second day of “International Forum on Adopting an ICT Perspective to Education and Learning” was conducted by Prof. Amarendra Behera, Professor CIET-NCERT on e-Pathshala. Prof. Behera began with the explanation of the Hindi word pathshala to bridge the gap of language for all the participants. He informed that the e-Pathshala portal and three mobile apps (Android, iOS and Windows) were designed and launched in 2015 with the main aim, as he quoted “Anyone can access resources anytime and anywhere.” He described the threefold vision of digital India campaign. The digital India campaign has promoted extensive use of ICTs in the teaching learning process. e-Pathshala, a joint initiative of MHRD, GoI and NCERT has been developed for showcasing and disseminating all educational e-resources including textbooks, audio, video, periodicals, and a variety of other print and non-print materials for students, teachers, parents, researchers and educators. It provides access to digital textbooks for all classes, graded learning materials, etc. He also demonstrated the launch video of e-Pathshala.

The session proceeded with how e-Pathshala portal is helping students and teachers throughout India. Prof. Behera demonstrated the real time working of e-Pathshala portal and app. e-Pathshala mobile app is available for a variety of stakeholders using Android, iOS and Windows platforms for wider access, and contains textbooks and other e-books as E-Pub 3.0 and Flipbooks. Other resources available on e-Pathshala were also discussed with participants.

Basing his argument using statistics, he stated that the total number of users, who are using e-Pathshala portal till 18 October 2016, was 82,36,845. This number, he elaborated, is increasing day by day. Later, he shared the data of e-Pathshala app with the participants. The total number of downloads for this app is about 4.5 million till now and this app is made available in 15 Indian languages. He discussed the different actions initiated to popularize the e-Pathshala portal and app. By giving illustrations, he discussed how e-Pathshala is useful for students, teachers, educators and parents.

Prof. Behera also mentioned that e-Pathshala portal has been nominated for UNESCO award for best ICT practices in education. India has reached great heights with respect to ICT practices in education. One great achievement of Haryana state was also proudly shared by him. Haryana has become the first state in India, which has successfully digitized textbooks and disseminating through launching of mobile app Meri ePustak. He briefly gave an insight into the future plans that included the vision of providing e-textbooks and as training resources and supplementary materials of all forty-eight state boards and 35 SCERTs/SLEs.

The session concluded with obtaining feedback, queries and suggestions from participative members. The participants raised different queries and shared their own experiences of their institutions and countries.

Post Lunch Session

SITE VISIT: For Digital content creation- Hands on in studio

Name of the facilitator: Prof. Lal Singh, Head, Media Production & Engineering Divisions (MPD & ED), CIET- NCERT, New Delhi, India

The participants of the forum were given the exposure of media production division works in CIET- NCERT. Prof. Lal Singh discussed about the audio and video developmental activities. He briefed the participants about the process of audio and video programmes development as well as the post production activities in the division. After this the participants of the forum were divided in 4 groups for the site visit at CIET-NCERT. The groups visited four sites in CIET for Television Production, Audio Production, EDUSAT Communication and Digital Story telling. All the groups were exposed to different technical areas to know about the studio production activities.

The group on Digital Story telling was led by Dr. Indu Kumar, Associate Professor, CIET-NCERT. She discussed about the digital story and how digital story can be a powerful tool of communication. She gave many examples of digital stories to the participants and explained how the digital story can be created using ADDIE instructional design model.

Another group was led by Prof. Lal Singh, Head, Media Production. He gave the hands on practice session for making Video programmes to the participants. They were shown the role and effects of light, camera, basic shots etc. The participants recorded and developed four Video Programmes on the use of ICT in Education, recorded panel discussions on different issues/topics on Role of ICT in Education. The topics of the discussion were as under:

- Role of Science and Technology in the development of the Society.
- The importance of ICT in Primary Education
- ICT in various countries and how it is being integrated in the field of Education
- ICT on professional development of Teachers Educators

The third group was led by Mr. M. Upendranath, Assistant Engineer, CIET-NCERT, who provided the participants with hands on activities of audio programme production. He demonstrated the usage of microphones, voice/audio level test, music and sound effects etc. In this group the participants recorded various songs, stories etc.

The fourth group was led by Mr. Rajender Kumar, Assistant Engineer, CIET-NCERT, who demonstrated the live

communication/ video conferencing to the participants with RIE, NCERT, Ajmer, Bhopal, Bhubaneswar through EDUSAT. Participants were given exposure of EDUSAT Communication through live video-conferencing used for synchronous communication for teacher training. Participants enjoyed the hands on practices and production exercises during the site visit.

BRIEF REPORT OF DAY 3 AND SESSION PROCEEDINGS

Day's Brief

The day 3 of the forum began with a report presentation of the previous day by Dr. Clarisse Lima of UNESCO-IBE. The first session was divided into two parts taken jointly by Dr. Airina and Dr. Margarita from Vytautas Magnus University, Republic of Lithuania. These sessions covered the various aspects on Open Educational Resources (OER) and Massive Open Online Courses (MOOCs), their survey in 20 non-English speaking countries; also they covered issues related to OER adaptation, development and use as integrated within the curriculum, this part of the session was based on hands-on activities and the presenter shared different tools helpful in development of OERs.

The next session was facilitated by Dr. M'hammed Abdous from Old Dominion University, Norfolk, USA. This session, enriched with hands on activities, was based on Technology Pedagogical Content Knowledge (TPACK). The next session on National Repository of Open Educational Resources (NROER), was facilitated by Dr. Nagarjuna G., from HBCSE, TIFR, Mumbai.

Session Brief

Session 3

TOPIC: Adapting, Using and Developing OERs in 20 Different Countries

Name of the facilitator: Dr. Airina Volungeviciene, Associate Professor at Vytautas Magnus University, Lithuania

Dr. Airina began the session with the meaning of OERs i.e. openly available resources or reusable learning objects that can be used to enhance education. It is implemented in 20 Non-English speaking countries like Lithuania, Brazil, Poland, France, Kenya, Russia and China. The adaptation strategy focused on Higher Education, Policy costs, Transformation, Reflections and Practices. The following presentation was prepared by Dr. Svetlana Knyazeva and presented by Dr. Airina Volungeviciene.

She elaborated on the initial findings and proposals of the project that include the internal motivation of producers and users of OER, encourage innovative methods, willingness to expand access to materials for better learning outcomes, enhance visibility and outreach for better penetration, additional recognition and scores during appraisal as an incentive for better performance. Nonetheless, she did not ignore its barriers. Dr. Airina mentioned that immense focus was laid on infrastructure and not on educational content. Also, there was lack of awareness of educators about OER and opportunities, unfamiliarity of Intellectual Property Rights (IPR) regulations and rights, incompatibility of OERs with open licenses, teachers lack emerging pedagogical approaches and quality assessment mechanism was not present. There are also language and technological barriers, the infrastructure is uneven, economic issues, legal barriers, lack of knowledge sharing culture in sharing and reusing materials amongst teacher groups, regulatory barriers and lack of focus on pedagogy, differentiating between academic values of sharing knowledge and commercial values of selling content were other impediments. People preferred face-to-face presentation rather than using OER and staff support was lacking to support each other for better learning outcomes.

However, she immediately provided solutions like raising awareness amongst all stakeholders, creation of new education strategies with provisions for OER, public funding for ICT infrastructure and educational content, maintenance of OER and development of ICT skills, revising pedagogical approaches, assessment and credentials for better performers, government supported initiatives, aligning national copyright & IPR legislations and regulations with open licenses leading to a knowledge free world available for all that is not charged. Other

initiatives include open textbook initiatives, capacity building, use of OER resources, teacher supported learner centred pedagogical practices, access, equity and quality in educational content, acceptance of OER and MOOCS, change of roles of teachers and institutions to encourage OERs, results translated to credits, price and quality expectations.

Other suggestions included “Unbundling” of the content (like i-tunes in 2003) for better and cost effective approach, availability of courses as single entities for better choices, digital badges and micro- credentials as incentives, non-traditional education paths, digital certificates, Nano degrees for job ready curriculum and supply chain leadership. She also showed some websites illustrating the adaptation and usage of OERs.

Dr. Airina engaged the participants in hands-on activities that enabled them to develop an OER as a teacher for their classrooms. The participants exchanged their ideas and brainstormed each other based on the factors discussed by the speaker.

Session 3

TOPIC: Lithuania Experience

Name of the facilitator: Dr Margarita Tereseviciene, Professor at the Department of Educational Sciences, Vytautas Magnus University, Lithuania

The Lithuanian experience was presented by Dr Margarita Tereseviciene. She pointed out the challenge of integrating OERs in Lithuania. The path that was followed was Use/Adapt/Develop and Select OER/ICT tools that meet requirements and most suitable for the purpose. An URL/ link was shared with the participants to make them aware about the same. The main challenge, she opined, was to make the stakeholders adapt to OERs. Through an interactive and collaborative tool, the participants were made to choose an OER. A Google document was shared amongst the participants to get their feedback. It was an Online Collaborative task for all participants to first choose an OER and its requirements and then choose tools for the correct OER as per functionality, develop/adapt OER suiting the selected ICT tool.

Some of the discussed options are Google docs for OER Documents, Google slides, Slideshare and Haiku Desk Integration for OER Presentations, IDEaspace, LiveMinutes for OER Collaborative project, WEVideo, Amara for OER Video/Audio editing. Lastly, she emphasized to choose the appropriate licensing option to publish the work. Different options for licensing were discussed with various possibilities.

This was followed by suggestions and discussions from the participants. Some adapted OER examples in various languages were also shown to the participants. Lastly, Dr. Margarita shared her experience on how to integrate OER in curriculum Development.

Session 4

TOPIC: Technology is not an afterthought: TPACK as a framework for ICT Integration into Teacher Professional Development

Name of the facilitator: Dr. M’hammed Abdous, Assistant Vice-President for Teaching and Learning with Technology at Old Dominion University in Norfolk, Virginia, USA

Dr. Mohammad Abdous made a presentation on the above mentioned topic consisting of six ideas: (i) technology – then and now; (ii) technological divide; (iii) technology integration models (iv) what is TPACK; (v) TPACK Cards Game; (vi) implications of all the five aspects. He said that for more than 100 years people have been saying that technology is a panacea for all the ills facing the society yet we are not satisfied with what technology is offering to us. Starting from 1923, when radio came into being and which is still the cost effective technology; in 1937, when IBM invented automated test scoring machines for schools; in 1970 – when the television came into being, technology is being harnessed in the school or in 2013 when 90% students use mobile technology, we are not fully satisfied. We keep trying for new technology.

In order to understand TPACK, he remarked, we have to develop historical perspective in which continuity and

change have become inevitable process in technology. The initial technologies took more than 500 years to come to this world whereas today technology is changing every six months.

The nature of the classroom has not changed for nearly 100 years, Dr. Abdous said. School designs are still like factory buildings. Though learning is becoming more and more personalized, access to resources is a major barrier to educational advancement. The TPACK, as a framework came into being to help teachers to integrate technology into their teaching so that the digital divide is reduced and 21st century skills including ICT literacy are taught to school children. TPACK is based on and the extension of Shulman's idea of Pedagogical Content Knowledge. Dr. Abdous also introduced two concepts – technology infusion and technology integration. Though these are also at times used interchangeably, the difference is subtle. While integration deals with intermixing, infusion deals with introducing technology. He also suggested going through the website - <http://fcit.usf.edu/matrix/index.php> to understand the technology integration matrix.

The presenter also discussed two technology integration models such as Substitution, Augmentation, Modification and Redefinition (SAMR) model and Levels of Teaching Innovation (LOTI) model. This was followed by the discussion on what is TPACK. This is an experimental project currently going to help teachers by providing the pedagogical content knowledge to use technology. Dr. Abdous suggested including all the dimensions of TPACK Framework in all teacher professional development programmes,

There are 7 dimensions of TPACK: (i) content knowledge (CK); (ii) pedagogical knowledge (PK); (iii) knowledge of technology (TK); (iv) Pedagogical content knowledge (PCK) (v) Technological content knowledge (TCK); (vi) Technological pedagogical content knowledge (TCPK) and (vii) putting all the six together formed final dimension. The TPACK framework is also available in the website www.tpack.org. As a tool box TPACK helps teachers to reflect on action and in action. TPACK framework helps in recognizing differences among students. Dr. Abdous later explained the uses of TPACK in developing teacher capacity. There were critics pointing out that they will be doubly burdened on this aspect.

The participants were engaged in a card game during the session. Teachers were divided into 12 groups and each one was given a set of cards – Green, Blue and Orange colour cards. Each set contained Content, Pedagogy/ Methodology and Technology. Each group was asked to identify one content card, develop a question and choose methodology and technology to answer the question. After the discussion, each group presented their views. The presenter elaborated on the points given by each group. Finally Dr. Abdous suggested using the TPACK framework to develop school curricular materials and develop teacher professional development programmes. For all this to happen, one also needs to develop vision, identify the expected competencies and provide the required infrastructure. Dr. Abdous concluded saying, “collectively it is possible to make difference.”

Session 5

TOPIC: National Repository of Open Educational Resources (NROER) online and offline

Name of the facilitator: Dr. Nagarjuna G., Associate Professor, Homi Bhabha Centre for Science, Education, Tata Institute of Fundamental Research, Mumbai, India

Dr. Nagarjuna began by informing about how to use ICT in teaching/learning and related issues. He informed the house that against the population of 1.30 billion people, India has only 1.30 million schools. Further, there are not sufficient teachers in these schools. As a result, it is difficult to meet the challenges for the country which relies on sustainable development.

Dr. Nagarjuna drew an analogy between the life-cycle of a jellyfish and the Internet to display the effect of the Internet on the surrounding world. He further explained NROER using a Mindmap and informed the house about various resources available on NROER which are freely available to all the stakeholders. There are around 5000 e-resources which are available at NROER. NROER started in 2013 and Dr. Nagarjuna recounted the contribution made by some important academicians like Mr. Mamur Ali, Mr. Yashpal Sharma and some National ICT awardees. He especially thanked Prof. Rajaram Sharma whose vision resulted in the NROER success.

He progressed his discussion by giving detailed descriptions about various components used in NROER and about various applications added to NROER e.g. metadata sheet, filtered resources, making of group, downloading and uploading of resources etc.

He also informed during the session that All India Radio (AIR) will also air resources which shall be very helpful for the masses. He suggested the delegates of other countries to share pictures/material by creating groups on NROER. He also informed about 'Internet in a Box'; a new technology, through which e-resources can be used off-line in a particular area.

He elaborated the functioning of the NROER as he named it COOOL. i.e Collaboration, Offline, Online, Ongoing and Learning. The session concluded with a full overview of the NROER project that acquainted the participants with the latest ICT developments in education in our country.

BRIEF REPORT OF DAY 4 AND SESSION PROCEEDINGS

Day's Brief

While the first 3 days engaged in discussions regarding the frameworks of ICT in education for equitable access and improving quality of educational resources, the 4th day began with the site visit to Sanskriti School, New Delhi, India, a school that uses Google applications for education. Mrs. Abha Sahgal, Principal, outlined the participants the various ICT methodologies that are practiced in their school. The purpose of the visit was to make the participants understand the practical implementation of technology within classrooms for building collaborative learning environment.

The participants returned to CIET after the school visit and attended two sessions on Google education tools and STEM education. Mrs. Karen Walstra and Mr. Jack Fermon, Google for Education, South Africa shared Google tools that can effectively transform the shape of the teaching-learning methods. It was followed by Mr. Ricaud Gervais Danyel Auckbur, Director, Tertiary and e-Education, Ministry of Human Resources, Republic of Mauritius, who exchanged his ideas on ICT and STEM Education. He gave the audience an insight into the Mauritian experience of using ICT in teaching-learning, the challenges faced by being a small, isolated island with less connectivity, and the measures taken to overcome the challenges. The major problem communicated was the unwillingness of the subject teachers to use ICT. The Ministry of ICT has developed an open source policy which encourages the use of OERs and open source softwares. OER in Mauritius has been insisted due to unavailability of local resources, reduction of cost and also it facilitates teachers to concentrate more on pedagogy rather than technology. He demonstrated various platforms used for STEM Education in Mauritius like Bee-Bot, Stellarium, Digital Interactive Projectors, Virtual/Augmented Reality labs and Open Sankore (interactive whiteboard software).

SITE VISIT: Sanskriti School, Delhi, India

Name of the facilitator: Mrs. Abha Sahgal, Principal, Sanskriti School, Delhi, India

The fourth day began with the site visit to Sanskriti School, New Delhi a school that uses Google applications for education. The teachers of the school use various Google tools in their classrooms. The teachers demonstrated how ICT intervention has helped the school in engagement of students in bringing in knowledge across the world and collaborate in constructing knowledge. They admitted that though they are hesitant to adopt technology, the mentor motivates them and hand holds them to bring technology into the classroom. The school also demonstrated that professional development of teachers has become an in-house event where Google classroom is based as a platform. It also gave hands on experience on the platform. Also, the participants were given Chrome Book password and the students at the table helped them in logging into Google classroom. All the participants marked their place on Google maps for knowing each other better, and had group presentations on clothing. The idea of social change was shared among the participants and the speaker asked them to write on the same by searching in the Image section and asked to support their observation. Later they did dragging activity for sorting the pictures.

The session was energetically conducted as the participants practiced collaboration learning by interacting with each other in Google classroom. Also, the use of Google maps for teaching social science was demonstrated. Participants worked on Google presentation to submit assignments. Kahoot, a web-based quiz was explored by the participants as everyone took part in an online quiz. The visit to school was truly enriching as participants took home gleeful experience of learning while collaborating.

Session Brief

Session 6

TOPIC: Google education tools: Chromebooks and Classroom hands-on, featuring case studies from WPPS South Africa and Indian Government pilot

Name of the facilitators: Mr. Jack Fermon, Program Manager, Google: Chrome GTM, South Africa and Mrs. Karen Walstra, Leader of Google Connectivity Area for Education, Mexico

The vibrant speakers suggested strategies to promote an inclusive classroom while informing about time-saving and cost-effective techniques to improve the quality of classroom teaching. Mrs. Walstra displayed the Google Calendar that can be used to collaboratively plan meetings. Ms. Saumya, Google India, introduced school teachers who shared their experience of using Google tools in their schools. An assistant teacher proudly expressed his gratitude to Google that trained their teachers to use technology in classroom in 2015. As a Government school teacher, he said, he had never expected to reach these heights. The session continued with Mrs. Walstra's engagement with the Chromebook. She presented the use of the Chromebook by making the participants explore it practically by themselves. Creation, as they insisted, should be the motivation and will enable the youth to become problem solvers. "The more we play, the more we learn" was their idea of education. Mr. Fermon carried the discussion forward by referring to Google Groups and Suites that can be synced with Gmail accounts. He answered many queries of the participants, thus clarifying the use of the tool.

Session 7

TOPIC: ICT and STEM Education: Mauritius Experience

Name of the facilitator: Mr. Ricaud Gervais Danyel Auckbur, Director, Tertiary and E-Education, Ministry of Education Human Resources, Mauritius

The session, "Mauritius: A Small Island Experience on ICT and STEM Education" was delivered by Mr. Ricaud Gervais. Recalling his association with NUEPA, Delhi 15 years ago, Mr. Auckbur began his presentation by thanking the IBE, the GoI and NCERT for the privilege of sharing the Mauritius experience on ICT & Science, Technology, Engineering and Mathematics (STEM) Education. The presentation of the Mauritius experience was divided into four sections.

The session began with the context of ICT education in Mauritius by giving a brief information about the history, geography, economy, natural resources, GDP, education system and its curricula. Mr. Auckbur underlined the realization that ICT has the potential to overcome the isolation of Small Island Developing States (SIDS). However, Mauritius had to work within the context of the digital divide, limited local capacity for digital resource development, lack of high speed Internet facilities in schools and the lack of digital literacy. It was within this context that Mauritius set up a dedicated e-Education Directorate, an Inter-Ministerial Coordination Committee, subsidized Internet connectivity, and designation of a Public Agency for training in ICT for education to enhance teaching and learning. The Ministry of ICT in Mauritius has also adopted an open source Policy to make resources easily and freely available at low cost which can be accessed online and offline. These resources, Mr. Auckbur pointed, was made available with a view to enable the users to use diversity of resources that can be re-contextualized or localized depending on the type of OER license. The most commonly used licenses in Mauritius are GNU general public license 3.0 and creative commons.

The presentation proceeded with discussion on ICT and STEM education. This part of the session was also conducted with a very lively and interactive activity. The participants were given a green card (for Yes) and a red card (for No) to be shown to express their agreement or disagreement with the questions put up on the interactive board concerning the feasibility, effectiveness, challenges and constraints of using various ICT tools in teaching-learning process.

The session later focused on hands on activity for choosing the most appropriate tools to be used in ICT in STEM education. The participants were given post notes on which they can write their choices of tools for presentation, lesson plans, printed handouts, syllabus and course content, STEM education, classroom discussions, assessment, game-based learning, science demonstration or videos from the available tools such as e-book, Image, Data loggers, manipulative software, PPT, Apps, Word, Skype/Google hangout, excel, search engines, pdf, movie

maker, YouTube, audio-recorder, still camera, movie camera, repositories, etc. Later on these choices were pasted on the white board under the appropriate columns and rows. Mr. Auckbur then showed the platform used in STEM education in Mauritius such as the bee-bot, teaching the sky: Stellarium (open software), digital interactive projectors in classrooms, OERs and multimedia resources, PPT, Data loggers, virtual/augmented reality labs in TVET training, tablet PCs, and most importantly Sankore—a francophone African OER interactive Software initiative consisting of: (i) Interactive Apps in open Sankore and (ii) Contextualized resources produced in Mauritius. Mr. Auckbur demonstrated the advantages of the Sankore open Software and its applications in actual classroom situations. The repositories used in Mauritius were also shown to the participants through www.oer.commons.org.

Lastly, Mr. Aukbur opened the discussion, and concluded it with a final comment that it is not technology that alone will make the difference the commitment and creativity of the teachers using ICT that will make all the difference.

BRIEF REPORT OF DAY 5 AND SESSION PROCEEDINGS

Day's Brief

After having discussed the different perspectives on the use of ICT in education, Day 5 began with the engagement with enhancing education system efficiency using ICT. The first session was conducted by Dr. Clarisse Lima. Consultant, UNESCO-IBE that centred upon 360 degree assessment in the school. Her discussion concentrated more on school education than ICT in education. She arrested the audience with the use of pictorial depictions, movie clipping etc. to suggest how the nature of school system has changed from the previous years to the present. Dr. Lima further elaborated on the concept of 360 degree assessment that implies the evaluation process will not move in a linear direction. It can be the student assessing the teacher or school and vice versa. It is a new perspective that allows an exchange of feedback possible. During the session, the participants also tried hands-on activities like conducting a survey and analysing their results themselves; and creating the survey for evaluation and sharing it with the rest of the participants. It also briefly touched upon creating Google forms. Dr. Inas Sobhy, Arab Republic of Egypt shared her e-content Development Project that is running in partnership with Microsoft.

The Joint Commissioner, Kendriya Vidyalaya Sangathan, Dr. Vijaya Lakshmi proceeded the next session. Her concern was “School Automation System of Kendriya Vidyalaya Sangathan: Shaala Darpan”. She summed up the role and agenda of Kendriya Vidyalaya Sangathan calling it the “world’s largest chain of schools”. She provided statistical data to back up her discussion. She stated that Kendriya Vidyalayas have a four-fold mission: to cater educational needs of parents of transferable jobs, to pursue excellence, to initiate and promote experimentation and to develop a spirit of national integration.

The next quick session was taken by Mr. Masome and Mr. Dimani from Botswana who energetically introduced their country to the participants and focussed on status of educational institutions in Botswana.

The last session of the forum by Dr. Badar Hamood Rashid Al Kharusi. Director General of Human Resources Development on “Monitoring the Education System using ICT: Experience from the Sultanate of Oman”. He began by elucidating the change in the school systems from the times of classrooms made under the shade of tree to the present classrooms that are unthinkable without technology. Students, as he stated, are interested in active learning, therefore information technology is the priority of our times. Oman Educational portal provides Educational Indicators System (EIS), which was essentially started to digitalise the data. Around 16TB data related to teachers, students and parents is available. He further elaborated that this application helps in storing the data related to student and teacher. This portal got 21 national and international awards. The session actively engaged the participants in hands-on as they formed three groups: Educational Ministers, District officers, and School related officers who were encouraged to discuss on the issues related to ICT. With the help a video, they demonstrated the procedure of their system. Every record related to students and educational progress is available on their portal.

Session Brief

Session 8

TOPIC: 360 Assessment in the school

Name of the facilitator: Dr. Clarisse Lima, ICT Consultant for UNESCO-IBE, Brazil

The fifth and final day, 4th November, 2016 of International Forum on Adopting an ICT Perspective to Education and Learning started with the session of Dr. Clarisse Lima, Consultant UNESCO-IBE on 360 Assessment in School. The agenda of her session was to contextualize her session in the School and Educational System, Assessment and Evaluation, Standardization and Customization and the problem of “what to assess.” The session centered upon 360 degree assessment in the school. Her discussion concentrated more on school education than ICT in education. She arrested the audience with the use of pictorial depictions, movie clipping etc. to suggest how the nature of school system has changed from the previous years to the present. She was quite impressed with the Sanskriti school visit as she commented “we can’t teach children with yesterday to prepare them for tomorrow.” However, she regretted that ICT is still not practiced in majority of schools, even in her own country, Brazil.

From this point, she questions if the promotion of ICT is enough for better education system. Tracing the trajectory of school system, she lamented that schools run like factories, and therefore are not appropriate spaces to inculcate creativity. To illustrate this, she demonstrated a clipping from a Charlie Chaplin movie, Modern Times that had a recurring motion of Chaplin’s actions as he works in a factory. Similarly, school children, too, are subjected to churning repeatedly one day after the other, without any change. The 360 degree concept of assessment relies on the theory of Multiple Intelligences, proposed by Howard Gardner. The perspective is based on her previous experiences while working with different institutions where this theory was practiced. The teachers and school evaluate the students, and are evaluated by them. All of them are involved in the process. She interjected as she raised the question of involving students, which she answered herself. She stated there is a need to involve students because “they are at the core of the system.”

The session proceeded sustaining the attention on students. Dr. Lima talked about a competition that The Guardian held in 2011 asking children about their idea of a dream school. The children participated in large numbers, and they suggested that children would be more confident if they are a part of the team; some said they want to be listened to; while others wished to have passionate teachers who could ignite a spark in their classes etc. The survey gave a peek into what children really want of school systems, which Dr. Lima thought was central to the idea of education.

Dr. Lima further elaborated on the concept of 360 degree assessment that implies the evaluation process will not move in a linear direction. It can be the student assessing the teacher or school and vice versa. It is a new perspective that allows an exchange of feedback possible.

During the session, the participants also tried hands-on activities like conducting a survey and analysing their results themselves; and creating the survey for evaluation and sharing it with the rest of the participants. It also briefly touched upon creating Google forms. She concluded her session with following activities on Google forms:

Hands-On Activity A:

1. Take A Survey (What would you change in school?)
2. Analyze the Results

Hands-On Activity B:

1. Creating a Survey a) Students evaluating teachers b) Students evaluating the school c) Students self-evaluation
2. Sharing the Survey

Session 8

TOPIC: School Automation system (MIS/ERP) of Kendriya Vidyalaya Sangathan: Shaala Darpan

Name of the facilitator: V. Vijayalakshmi, Joint Commissioner (Academics), Kendriya Vidyalaya Sangathan, New Delhi, India

In the row, Mrs. Vijayalakshmi from KVS, New Delhi delivered a session on KV Shaala Darpan as School Automation Application (MIS/ERP). She highlighted the objectives of *Shaala Darpan* as:

‘*Shaala Darpan*’ refers to mirror view of a school. It is a Mission Mode Project (MMP), with following objectives:

- Enable improvement in quality of learning
- Improve efficiency of school administration and governance of schools
- Improve service delivery of school education department to the key stakeholders including students, parents, community, teachers, and schools
- Access to near real-time and better quality data for decision support

She also insisted on the need for e-governance for there is a need of data digitalisation. She opens up her discussion by listing out the challenges in the process of e-governance like data digitisation, establishment of connectivity of all stakeholders, staff appraisal, access to quality learning material etc. This led to the development of Shaala Darpan i.e. a school automation application, which literally means the mirror view of the school. The objectives of the project were to enable improvement in quality of learning, efficiency and access to real time data. She also demonstrated the website and the various module platforms that cover all aspects of school operations. She talked in detail about:

1. <http://darpan.kvs.gov.in>
2. admission.kvs.gov.in
3. admin.kvs.gov.in
4. learning.kvs.gov.in
5. mip.mgrmnet.com

She concluded her session while presenting about Benefits to Key Stakeholders.

Session 8

TOPIC: School Automation system (MIS/ERP) of Kendriya Vidyalaya Sangathan: Shaala Darpan

**Name of the facilitator: Ms. Inas Mohamed Sobhy, Department Manager Teacher,
Ministry of Education – Egypt**

The presentation followed by the presentation of Ms. Inas Sobhy on e- Content Development Project. She highlighted that the ministry of education Egypt together with SIVCO and Microsoft implemented three projects for improvement of educational eContent:

- Evaluation Methodology for Egyptian Educational Materials
- Pilot project on Localization of SIVCO RLOs

Creating New RLOs: The project, she briefly explained, has three phases: first, evaluation methodology; second, to customise and localise of SIVCO RLOs, and third, creating new RLOs. With the help of a video, she depicted the development of assistive technology for children with special needs. The brief session provided an insight into the ways ICT is adopted (though with a few limitations) in Egypt.

Session 8

TOPIC: The status of educational institutions in Botswana

Name of the facilitators: Mr. Masome B.T. Rebaone, E-Education Policy Coordinator, Ministry of Basic Education- Botswana and Mr. Dimane Mpoeleng, Botswana International University of S & T, Government of Botswana

In the continuation Mr. Dimane Mpoeleng from Botswana talked about the Botswana Case. He highlighted the ICT Infrastructural development at Botswana. They were enthused to provide statistics regarding the status of educational institutions of their country. Further, they discussed the thin line between ICT education and ICT in education. They also mentioned the endeavors done to promote ICT in Botswana like ICT-based textbooks. However, quite playfully, they concluded that children should not be discouraged from playing physically. Finally, they waved the audience with a Hindi sentence and a picture with the auto-driver.

Session 9

TOPIC: Monitoring the education system using ICT: Experience from the Sultanate of Oman

Name of the facilitators: Dr. Badar Al Kharusi, Director General of Human Resources Development, Ministry of Education, and Mr. Faisal Al Busa'idi, Assistant Director of Information Technology, Sultanate of Oman

The morning session ended with Dr. Badar Al Kharusi and Mr. Faisal Al Busa'idi, from Sultanate of Oman who gave a detailed presentation on Monitoring the Education System Using ICT: Experiences from the Sultanate of Oman. Their talk was based on

- General Information
- Education- quantitative and qualitative development.
- Education and ICT in Oman
- Educational Indicators system
- Conclusion

They talked about History, Economy, Geographic Location and Population of Oman. They gave a detailed presentation on Oman Educational Portal- Educational Indicators System (EIS). The Aim of this project is follows:

- Improve education quality.
- Build smart Educational indicators.
- Utilize technology in developing (school, teacher, student) performance.
- Tracking progress of each (school, teacher, and student) in the Omani educational system.
- Provide partner institutions in the Sultanate with educational statistics and indicators in the field of educational work.
- Support the ongoing assessment of plans, projects and educational programs undertaken by the MoE.

They informed - How does the system work?

- EIS is a digital electronic system developed to read databases files from the main educational portal.
- The system developed to produce comprehensive and detailed reports about issues such as overall school performance, academic progress, staff affairs etc.
- The system includes 8 main indicators and 40 sub-indicators.
- The system includes 220 million records.

They concluded their presentation with several examples from the Educational Indicators System.

CLOSING OF FORUM

The 5 day forum ended with the valedictory session. Prof. H. K. Senapathy, Director NCERT, graced the occasion with his presence. Dr. Abhay Kumar, Assistant Professor, CIET and Dr. Clarisse Olivieri de Lima presented a brief report of all the activities of the forum in front of august gathering. Ms. Emily gave a feedback evaluation report. Feedbacks from the participants were invited and participants spoke about the forum activities. They also appreciated the content of the forum along with the hospitality provided to them. Valedictory address was given by Dr. Tekaligne Godana and he thanked organizers for getting pain and flawless programmed happened in India for the efforts to organise a flawless programme. Prof. Senapathy highlighted the importance of ICT towards education and learning of children. He categorically mentioned the usefulness of such ICT Forum towards the broader objective of improving the quality of learning. Prof. Behera proposed vote of thanks. At last Prof. Senapathy, Dr. Godana and Prof. Saroj Yadav, Dean (Acad), NCERT handed over the certificates of participation and memento among the delegates and participants.

FEEDBACK OF THE STAKEHOLDERS

Feedback mechanism has an important aspect to know the efforts we have put to reach our goal. It enables to learn about the needs and expectations of our target ordinances. It gives the participants the opportunity to evaluate the effectiveness of the event such as facilitators, forum topics, hands-on activities, demonstrations, organization, accommodation etc. This makes to improve the organization and also understand the lessons learnt during the event.

In ICT forum also we have gathered the feedback of all the stakeholders. This was done through an online Google Form through which the opinion of every session was asked and also the organization and site visits planning. At the end of each day the form was shared with the participants through email and they have to just click the responses or provide their suggestions in short answer form. The feedback was of participants was summarized below-

DAY-1

- Most of the participants strongly agreed that the keynote speeches set the tone for a global vision, perspective and framework for ICT to education and learning.
- Most of the participants agreed that the keynote speeches contributed to and been relevant for ICT education and learning in your country and/or profession
- Almost all the participants agreed and strongly agreed that ICTs Fair engaging and useful.
- Participants responded that the major key take away from the presentations were- that they shared innovative ideas/ practices about use of ICT, Improvement of quality of School Education, Teaching-Learning process, Assessment & Accessibility through ICT, UNESCO has comprehensive frameworks to deploy ICT in Education, to frame better policies on ICT, how ICT skills can be used judiciously and enhance multi-sensory approaches and prepare students for future.

DAY 2

On day 2 the theme of the first session was on use of ICT for special children and use of assistive technologies. The participants mostly agreed that the presentations were addressing the theme of that day. But most of the participants were neutral, some agreed and some disagreed that hands on activity, interactivity and competency enhancement through this session was completely fulfilled. The major key take away from this session were- knowledge about assistive technologies for students with disabilities, new vision about equity, how Inclusive Education can be done through ICT for all category of society and Coping with all learner's challenges and making all feel welcome and giving them meaningful education.

The next session was on the digital programmes by GoI i.e. SWAYAM, Shalasiddhi and e- Pathshala. About these programmes the participants have been oriented and explored the platforms also. The participants mostly agreed and strongly agreed that the presentations were addressing the theme of that day and also the hands on activities were satisfying. But mixed responses were obtained regarding the competency enhancement through this session. Though mostly the participants agreed that competency was enhanced but many disagreed for the same. The major key take away from this session was- exposure towards MOOCs initiative in India, School evaluation system, comprehensive development of e-content for education. Few participants expressed dissatisfaction towards the issues of hands on component and also the set up in different rooms by the organisers.

On the same day site visit in CIET was planned. Almost all the participants strongly agreed that site visit was helpful in visualizing the application of ICTs for education and learning. They also presented their reflections on the site visit that were- they got an idea as how various technology can be integrated in development of school education, use of multimedia systems, impressive infrastructure, exposure to first-hand experience, lifelong enrichment and interesting amazing experience. Though out of four groups one said that the audio recording in studio was explained in much better way.

DAY 3

On the day three sessions were there on OERs, TPACK Model and NROER. Different facilitators shared their experience regarding the theme. For the first session that was on OERs - The participants mostly agreed and strongly agreed that the presentations were addressing the theme of that day. But for the hands on activities and competency enhancement mixed responses were obtained i.e. some were neutral, some agreed and some strongly agreed. The key take away from this session were- they got exposed to OERs availability, creation, usefulness, constraints, and benefits for students and teachers. Few said that hands on session was a bit short

The next session was on TPACK model and in which the participants were strongly agreed that the session was addressing the theme of the day, provided hands on activities and enhancing the competency also. The major key take away were- How to integrate the technology after following the good content and Pedagogy knowledge, the alignment of content, pedagogy and technology is key for attaining teaching/learning outcomes, Practical and effective approach, understanding of the implementation of the TPACK model and they liked the card games of the session.

The last session of the day was on NROER, in which the majority of participants strongly agreed that the presentation was according to the theme of the day. They also agreed that the hands on activity and competency enhancement were also satisfying. Their major key take away were- the exposure towards NROER (Online and offline mode), contribution and evaluation, usefulness and filling the gap of online education.

DAY 4

It started with the site visit at Sanskriti School Delhi and the participants were strongly agreed that the site visit helpful in visualizing the application of ICTs for education and learning. The reflections of participants on the site- visit were -Real use of ICT, Applied well in an academic friendly atmosphere, session was informative and effective in hands on, the potentiality of application of ICT particularly Google suit is demonstrated well, Manageable, student - centred, well planned lesson activities, interaction between students and students and teacher. The participants liked the overall model, infrastructure, management of the school. Some demanded that they could have same experience at CIET with Chrome books and no specific usage of chrome books were shown with the classroom environment

The session of the day started with Google education tools: chrome books & classroom hands-on, featuring case studies from South Africa and Indian government pilot. The participants strongly agreed that the presentations were addressing the theme of that day. They also agreed and strongly agreed that the session provided them hands on activities and also their competency was enhanced. The major key take away from this session were- How to use Gsuite tool, a platform to explore new things & new ideas under total control of facilitator, greater scope for a quick analysis. Many participants responded that they will be using Google classroom in future and also to register on Gsuite. One of the participants said as ICT Coordinator he will be interested to pilot this in State of Tamil Nadu.

The next session was on ICT and STEM education in which participants strongly agreed that the session addressed that theme, provided hands on experience and also enhanced the competency. But along with this some of the participants remain neutral and agreed on this. The major key take away from this session were- Use of ICT in STEM, STEM and ICT are almost complement, got information about new OER and tools, ICT in education can make learning more fun and collaborative. Some participants planned to visit the primary school in Mauritius.

DAY 5

The day started with the session of 360° assessment in the school in which most of the participants agreed that presentation addressed the theme of the day. But regarding the hands on activity and competency enhancement of this session participants were strongly agreed. The major key take away from this session were- excellent assessments tools, Continuum of Assessment, comprehensive use of Google forms, Survey and Inclusion of students in the Evaluation Process, Holistic approach towards educational outcomes and a newer way of assessment in school. They also understood the role of student in assessment process, need for assessment and use of Google tools.

The next session was on Shaladarpan in which most of the participants agreed that presentation addressed the theme of the day. But regarding the hands on activity and competency enhancement of this session participants mostly agreed and few were disagreed too. The major key take away were- national standards are needed, Creating Survey Forms, A role model of KVS to follow, Developing school standards and Need improvement for data analysis. They were also understood that How effective Educational policies by the Government can play an important role in mass education

The next session was on monitoring the education system using ICT: experience from the Sultanate of Oman in which the majority of participants strongly agreed and agreed that the presentation was according to theme. But most of the participants were neutral about the hands on activity and competency enhancement for the session. The major key take away from the session were- Excellent System of monitoring, redressed of issues, transparency, How Quality Management System can enhance the Educational goals of a country and the role of Big data analytics and how analytical data can be collected and presented from different sources through ICT.

GENERAL FEEDBACK

A general feedback from participants regarding logistics and organization of the event was also taken on daily basis. Few remarks regarding the programme were- well managed and organised, excellent arrangement of programme venue, academic activities of the forum with highly productive discussions and deliberations, all logistic support systems were outstanding, the program set the tone of what to expect for the rest of the conference, activity based experience with discussion, balance workload, address needs of adults with different cultural and academic backgrounds and very well planned whole day programme with useful knowledge and wonderful socio cultural exchange opportunities, besides outstanding professional networking.

SUGGESTIONS

Few suggestions were also given by participants- arrangement for translated version of speech of Hon'ble MoS HRD in English would have helped foreign participants to comprehend, Wi-Fi access for international delegates who don't have 3G mobile access in India, little more focus should be on the hands-on activity, it would be better if the organizers had a little shorter day and participants could see some of Delhi and maybe some cultural exchange (at least hear some native traditions, everyday life routines, symbolic heritage, etc.), all the participants should have an opportunity to interact with the presenters, internet connectivity to participants discontinued due to overload, hands-on session after lunch everyday so that the fatigue factor can be negated, make more countries to participate, site visit might have motivated more, if the school selected were a municipal/government school. They also requested to collaborate through any social media so that everyone can share their practices and links.

ADDITIONAL COMMENTS

Many additional comments were also provided by the participants that were- webcasting to target audience, enlightening and productive from the point of view of professional career and quite purposeful for the onward transmission of the knowledge and skills to students and colleagues for the effective utilization of ICT for qualitative improvement of School Education in India, good learning and would pave the way of applying it in the context of north east India, all the presentations were very relevant and important to all the participants, more and more activity suggestions/reference sites required to enhance the impact of teacher training sessions based on ICT usage, joyful learning about ICT, excellent experience with global ICT experts, addressed how the cost of gadgets and affordability of internet is widening the digital divide and serious research evidences were missing in the presentations.

A feedback of participants on enhancing education system efficiency using ICT was also taken. And they were strongly agreed and agreed that after this Forum, they feel more confident about the integration of ICT in teaching, learning and assessment in their country context and they were more aware of the available ICT tools and methods that will enable innovations to improve access, quality, equity and inclusion in education.

They were also asked that what specifically they learn during the Forum that will apply to their country and profession. Their responses were- ICT Evaluation tools, tools techniques about e-learning, MOOCs, assessment tools, educational resources available online and offline, affordable infrastructure designed for education, content standards, learner management systems like SWAYAM, assessment and evaluation strategies, portable internet solutions, application of Google for education, info about gadgets, learnt how other countries are doing in ICT and why to go for ICT, usage of Kyan and chrome books, useful links and websites like kahoot, NROER, Swayamprabha, Shaala sidhi, Shaala darpan, Video recording ,voice recording, virtual classroom, Digital story creation, Big data Analytics, Using research and collecting feedback for training programmes. These can help teachers, curriculum developers, school administrators, testing agencies.

ANNEXURE 1

LIST OF NATIONAL AND INTERNATIONAL PARTICIPANTS

S.No.	Name & Designation	Organisation/ Institution
1.	Mr. Kgetjepe MI, MEC Education	Limpopo Dept. of Education, Republic of South Africa
2.	Ms. Matsie Angelina Motshekga, Minister of Education	South African Government, Republic of South Africa
3.	Dr. Tekaligne Godana, Senior Programme Specialist	UNESCO-IBE, Portugal / Canada/ Switzerland
4.	Dr. Clarisse Olivieri de Lima, ICT Consultant	UNESCO-IBE, Portugal
5.	Ms. Emily Sheppard, Education Specialist	UNESCO-IBE, Portugal / Canada/ Brazil
6.	Mr. Tlhabane Abram Seliki, Acting Chief Director ICT	Ministry of Basic Education, Republic of South Africa
7.	Mr. Andrek Lesufi, Department official	Gauteng Dept. of Education, Republic of South Africa
8.	Mr. Henry Kavuma, Ministry of Education	Ministry of Education, Republic of South Africa
9.	Mr. Hubert Mathanzima Mveli, Director General	Department of Basic Education, Republic of South Africa
10.	Ms. Maqueen Letsoha Mathae	Dept. Of Basic Education, Republic of South Africa
11.	Mr. Mzwandile Matthews, Policy Formulation and M & E Oversight	Department of Basic Education, Republic of South Africa
12.	Ms. Biyi Minko Manuela	Ministère de l' Education Nationale, Republique Gabonaise
13.	Mr. Otila Ossibadjoud Adolphe, Inspecteur Général Adjoint des Services	Ministère Education Nationale, Republique Gabonaise
14.	Dr. Airina Volungevičienė, Director of Innovative Studies Institute	Vytautas Magnus University, Republic of Lithuania
15.	Mr. Algimantas Teresevičius, Project Manager	Vocational School Lithuania, Republic of Lithuania
16.	Mr. Alvydas Volungevičius, Secondary Education Specialist	Žiburys Gymnasium, Republic of Lithuania
17.	Dr. Margarita Teresevičienė, Teacher	Vytautas Magnus University Republic of Lithuania
18.	Mr. Ayaz Abushov, Deputy Head of the Bureau on ICT for Education	Ministry of Azerbaijan Republic
19.	Dr. Badar Hamood Rashid Al Kharusi, Director General of Human Resources Development	Ministry of Education , Sultanate of Oman
20.	Mr. Faisal Ali Al Busaidi, Assistant Director of Information Technology	MOE Sultanate of Oman

21.	Mr. Masome B.T. Rebaone, E-Education Policy Coordinator	Ministry of Basic Education, Republic of Botswana
22.	Mr. Dimane Mpoeleng	Botswana International University of S & T, Republic of Botswana
23.	Mr. Fahed Heliwan M. Almetiri, Ministry of Education	Saudi Arabia Education, Kingdom of Saudi Arabia
24.	Dr. Mohammed Abdulaziz A. Almadani	Ministry of Education, Kingdom of Saudi Arabia
25.	Mr. Benjamin Rondolf Choppy, Principal Secretary for the Dept. of Information and Communication Technology from the President's Office (DICT)	Ministry of Education, Republic of Seychelles
26.	Ms. Merida Marie Antoinette Delcy, Principal Secretary Education	Ministry of Education, Republic of Seychelles
27.	Ms. Michelle Rosalind Denys, Director, ICT Support Services Education and Student Services Division	Ministry of Education, Republic of Seychelles
28.	Mr. Gamil El-Sayed Ahmed Farghly, Researcher – Foundation of Education (Teacher Professional Development)	National Center for Educational Research, Arab Republic of Egypt
29.	Ms. Inas Mohamed Sobhy, Department Manager Teacher	Ministry of Education, Arab Republic of Egypt
30.	Mr. Leonard Mgcibelo Tsela, Senior Inspector ICT	Ministry of Education and Training, Kingdom of Swaziland
31.	Ms. Sibongile Mavis Mtshali-Dlamini	Kingdom of Swaziland
32.	Ms. Natalia Amelina	UNESCO IITE, Russian Federation
33.	Mr. Auckbur Ricaud Gervais Danyel, Director, Tertiary & E-Education, Ministry of Education and Human Resources	Ministry of Education, Republic of Mauritius
34.	Dr. M'hammed Abdous, Assistant Vice-President for Teaching & Learning with Technology	Old Dominion University, Norfolk , United States of America
35.	Mr. Jack Fermon, Engineer	Google
36.	Mrs. Karen Walstra, Program Manager (Educational Technology)	Google
37.	Mr. Nicodemus Merafhe, Principal Education Minister	Ministry of Education, Botswana
38.	Ms Bani Dhawan, Head of Education	Google India
39.	Prof. Braham Prakash Bhardwaj, Head	DTE, NCERT, Delhi
40.	Prof. Sharad Sinha, Head	RMSA, NCERT, Delhi
41.	Prof. Anupam Ahuja, Head	DEGSN, NCERT, Delhi
42.	Prof. A.K Srivastava, Dean	NCERT, Delhi
43.	Dr. Ratnamala Arya, Associate Prof.	RIE, Bhopal, Madhya Pradesh
44.	Prof V.K.Singh, Associate Professor	DEGSN, NCERT, Delhi

45.	Mr. Sanjay Awasthi, Member Secretary	National Council for Teacher Education, Delhi
46.	Prof. Saroj YadavDean (A)	NCERT, Delhi
47.	Prof. A.Sukumar, Principal	NERIE, Shillong, Meghalaya
48.	Prof. Nityananda Pradhan, Principal	RIE, Bhopal, Madhya Pradesh
49.	Mr. Lokesh Bajaj, Vice President	IL&FS Education, Noida
50.	Mr. Diptiman Das, Chairman & MD	CMD, EDCIL, Noida
51.	Ms. Mansi Nimbhal (IAS), Director, SCERT	Government of Odisha
52.	Prof. S.Suresh Babu, Professor	SCERT, Telangana, Hyderabad
53.	Dr.(Ms) Poonam Nagpal, Principal	Directorate of Education, RMSA, Delhi
54.	Dr. V. Vijayalakshmi, Joint Commissioner	Kendriya Vidyalaya Sanghathan, Delhi
55.	Dr. Manas Ranjan Panigarhi, Programme Officer	Commonwealth of Learning (COL), CEMCA, Delhi
56.	Dr. Meena Kumari Devi, Director	SCERT, Manipur
57.	Mr. Sukhwinder, Asst. Professor	ESD, NCERT Delhi
58.	Mr. R.R. Koireng, Asst. Professor	DCS, NCERT, Delhi
59.	Dr. P.K Thilak, Research Officer	SCERT, Kerala
60.	Mr. Tasongwi Newmei, Assistant Professor	NERIE, NCERT, Shillong
61.	Mr. Arnab Sen, Assistant Professor in Physics	NERIE, NCERT Shillong
62.	Mr. M.V Shrinivasan, Assistant professor	DESS, NCERT, Delhi
63.	Mr. Neelkanth, Assistant Professor	NIE, NCERT, Delhi
64.	Mr. Jitendra Kakati, State Programmer MIS	RMSA, Assam
65.	Dr. Rudrnarayan Sahoo, Education Specialist	UNICEF, Delhi
66.	Dr. Begur, TE/IT	UNICEF, Delhi
67.	Shri Tapas Kumar Nayak, Assistant Director	DTE & SCERT, Odisha
68.	Ms. Shanthala, Sr. Assistant Director	DSERT, Karnataka
69.	Ms. Moirangthem Indira Devi, Principal	DIET, Senapati, Manipur
70.	Mr. Asir Julius, Assistant Professor	SCERT, Chennai, Tamil Nadu
71.	Dr. Emteyaz Alam, HOD, Audio Visual Department	SCERT, Patna, Bihar
72.	Geeta Chopra, Director	ICSI, Ansal bhawan , New Delhi
73.	Mr. Pratyush Nanda, Assistant Professor	Vijaywada, Andhra Pradesh
74.	Mr. Sachin Wadekar, Co-ordinator	MSCERT, Pune, Maharashtra
75.	Dr. F.S. Khan, Sr. Lecturer	SCERT, Madhya Pradesh
76.	Shri M.N.V. Sreenivasa Rao, Assistant Director	RMSA, Andhra Pradesh
77.	Shri. K.U.V. Satya Sandeep, E-governance Consultant	RMSA, Andhra Pradesh
78.	Mr. L.J. Fuller, Deputy Secretary	Council for the Indian School Certificate Examinations, New Delhi
79.	Mrs. Poonam Sodhi, Deputy Secretary ISC	Council for the Indian School Certificate Examinations, New Delhi

80.	Col. Sreejeth (Retd), Deputy Secretary IT	Council for the Indian School Certificate Examinations, New Delhi
81.	Mr. Sanjeev Joshi, Assistant SPD, ICT, SPO	RMSA, Directorate of Education Uttarakhand
82.	Mr. Santosh Bhatt, Chief Assistant, ICT	RMSA Uttarakhand
83.	Mr. Owais Shaikh, Senior Consultant	RMSA, Maharashtra
84.	Mr. Pradip N Wayal, Programme Officer	RMSA, Maharashtra
85.	Ms. Sangeeta Gulati, Head, Department of Mathematics	Sanskriti School, Delhi
86.	Ms Sanchita Ghosh, Head, Department of History	Sanskriti School, Delhi
87.	Ms Sunit Kaur Ubhi, Programme Manager	Google India Pvt Ltd, Gurgaon, Haryana
88.	Mr. Hemant Aameeta, Research Assistant	SCERT, Rajasthan
89.	Ms. S. Pugazhendi, State Coordinator of RMSA & ICT	SSA, UT of Puducherry
90.	Mr. Manohar Lal Rai, Head Master	Govt. Middle School, Madhya Pradesh
91.	Mr. Love Srivastava, PGT Computer Science	DMS, RIE, Ajmer, Rajasthan
92.	Mr. Suryaveer Singh, PGT Geography	SD Public School, Delhi
93.	Mr. S. Dhillip, English Graduate Teacher	Government Higher Secondary School, Tamil Nadu
94.	Mr. Ramesh Prasad Badoni, Lecturer	Government Inter College, Dehradun, Uttarakhand
95.	Sh. Mohan Kumar Beshra, Work Education Teacher	RIE, Bhubaneswar, Odisha
96.	Mr. Sanjeev Sharma, PGT (CS)	Kendriya Vidyalaya, Palampur, Himachal Pradesh
97.	Mr. Naveen Gautam, Lecturer	Government Senior Secondary School, Himachal Pradesh
98.	Mr. Dharmender Singh, PGT, Economics	RIE, Bhopal
99.	Ms. Surksha, Research Scholar	CCSU, Meerut
100.	Mr. Manoj Kumar, Office Superintendent	Directorate of Education, RMSA, Delhi
101.	Sanchita Lal	International Chamber for Service Industry (ICSI), New Delhi
102.	Mrs Neeraj Punia, TGT Chemistry	DAV Public School, Gurgaon, Haryana
103.	Mr. Himanshu Tiwari, Head- Fulfilment	IL & FS Education, Noida
104.	Ms Roopali Arora, PGT, Economics	Sanskriti School, Delhi
105.	Mr. Aman Luthra, Business Lead	IL&FS Education, Noida
106.	Mr. Naushad Ahmed, Tech Support Lead	IL&FS Education, Noida
107.	Ms. Anita, Assistant Programming Officer	IT Branch, Directorate of Education, Delhi
108.	Mr. Manas Arora, Manager	IL& FS Education, Noida
109.	Mr. Arpit Miglani, Program Manager (Technical)	Manav Rachna International University, Gurgaon

110.	Ms. Mahapurva Phuja, French interpretor	Jawaharlal Nehru University, Delhi
111.	Mr. Ajay Kumar, French interpretor	Jawaharlal Nehru University, Delhi
112.	Ms. Ankita Sindhaina	NIMR, Delhi
113.	Nandkishore P. Wanjari, Assistant Teacher	Jilla Parishad Upper Primary School, Nagpur
114.	Ms. Renu Punhani	IL&FS Education, Noida
115.	Mr. Amitoj Gill	IL&FS Education, Noida
116.	Mr. Vagish K Jha	IL&FS Education, Noida

ANNEXURE 2

EXCERPTS OF SPEECH BY DR. MMANTSETSA MAROPE, DIRECTOR UNESCO-IBE

Greetings

Chairperson of the 2016 International Forum on Adopting an ICT Perspective to Education and Learning
Excellencies, Honorable Ministers Leading Different Portfolios of the Education and Learning System of the Republic of India

Excellency the Honorable Minister of Education of the Republic of South Africa,

Excellency the Honorable Minister of Education of the Kingdom of Swaziland who is here with us in spirit.

Esteemed Directors General / Permanent Secretaries / Principal Secretaries of Ministries

Representatives of the IBE's principal partner in this initiative GOOGLE

IBE's collaborators for this Forum the NCERT and the UNESCO IITE

Distinguished delegates

I sincerely apologize that for health reasons, I couldn't be in this Forum in person today as I had planned for months.

However, I take solace in knowing that this Forum will be a resounding success because of the commitment and rich contributions of all of you. Most importantly, because of the guidance of Excellencies who are with us today. Chairperson, before I start my address, I want to thank all key players that significantly contributed to the growth of the GEQAF initiative.

To start with, the Republic of South Africa is one of the five founder countries that contributed during the design and the development stage of the GEQAF. I can still hear Honorable Motshekga saying to the then DG Soobrayan....Booby, I want this Framework to work. The four others countries were the UAE, Peoples' Republic of China, Norway and Finland. Without these countries, I don't believe I would have been able to lead the development of a usable and realistic GEQAF.

After validating the GEQAF in the UAE, the Republic of India was the first country to apply the Framework. And in the process, Hindi became the second language of the GEQAF following English. The GEQAF is not on line in 7 languages ...as partner countries kept translating it as they use it.

Thanks to the generosity of H.E. the then Minister HRD Honorable Kapil Sibal, India released five senior experts to join the UNESCO Secretariat in co-facilitating the application of the GEQAF in the Sultanate of Oman and later in the Republic of South Africa.....S/S collaboration

Today, India is hosting one of the second phase activities of the GEQAF, this Forum, not only as a partner country but in recognition of the phenomenal contribution India continues to make in the development of ICTs and their application to education and learning.

Dr. Badar of the Sultanate of Oman played a significant role not only in co-facilitating the application of the GEQAF at home, but also in the Republic of Seychelles, and for in co-leading with me, the first International Conference of GEQAF partner countries early 2014 in Riyadh, the Kingdom of Saudi Arabia, with immense support of the then Honorable Minister Prince Al Faisal of the Kingdom of Saudi Arabia. Riyadh 2014 was where GEQAF partner countries shared findings of their respective systems analyses.

I also sincerely thank all the countries that are going to share their best practices toward the integration of ICTs in diverse aspects of their education and learning systems: The Sultanate of Oman, the Republics of South Africa, Mauritius, Lithuania, India, as well as the US.

Last but not least, I thank the IBE's own team. I thank Dr. Godana for having relentlessly and selflessly led this work, and all his team members and collaborators.

Where the GEQAF Initiative Stands

Thanks to all these contributions and indeed of all GEQAF partner countries, today, we are in New Delhi together, to address one of the common challenges identified in the Riyadh conference: The inadequate and fragmented adoption of ICTs in education and learning systems.

As it will be reiterated several times during this Forum, the GEQAF is a systemic approach.

Consistent with this approach, this Forum advocates for the adoption of an ICTs perspective to education and learning.

Chairperson, Excellencies, distinguished delegates, a perspective generally refers to a point of view that one or a collective adopts in a particular context and at a particular point in time.

But, when this viewpoint transcends contexts and time; when the viewpoint becomes habitual, or characteristic, it gets to be elevated to a life view, a way of being and a way of doing

For example, today we talk of a LLL perspective to education and learning. This is because this is the lense we consistently take whenever, wherever, and with whomsoever we talk about and/or do education.

In this vein, this Forum advocates for the adoption of an ICTs or a technology perspective to become our way of educating and of learning.

The Current State of ICTs in Education and Learning Systems

- Needless to say that, ICTs are progressively becoming integral to education and learning, but as it shall become apparent different countries tend to adopt technology in some aspects of the education and learning system, but not in the entire system, [recently, I had the opportunity in Muscat, to discuss this matter with Her Excellency the Honorable Minister of the Sultanate of Oman. She acknowledged the impressive strides progress the country has made in applying ICT in managing the system, but was very quick to note that, much more effort is still required at the classroom level to more directly impact teaching and learning].
- We are therefore yet to adopt an ICTs perspective, in a systemic manner. However, the good news is that with peer learning that this Forum promotes, partner countries can share their areas of excellence and thus fast track the systemic approach advocated in this Forum.
- Within the GEQAF initiative, we believe that a careful consideration needs to be given to address key challenges in education today and to leverage technology at each and every critical pulse point of an education and learning systems.

Key Challenges in Education Today That ICTs can help us address

Last year during the Google Global Symposium on Education, I outlined how critical challenges in education today for which we need to seriously leverage technology to address them. These are to:

1. Expand access [in 2014, 263 million children, adolescents and youth were out of school, 758 million youth and adults lack basic literacy] to education and learning and ensure equitable and inclusive access. Especially for the marginalized, the physically hard to reach, the displaced, and those in fragile environments.

2. Deepen quality and ensure equity of education quality consistent with SDG4 [diverse assessments and equity of quality]

- Using ICTs to support deep pedagogies for deep learning
- Customizing learning opportunities to diverse learning styles and needs
- Acquisition of future competencies that are not necessarily easy to teach using traditional pedagogies, especially soft competencies in their own right and as enablers of the acquisition of other competencies
- Assessment of soft skills that are difficult to assess through pen and paper methods
- Support assessment for learning real time and continuously
- Support the analytics required to inform teaching and learning real time
- Affordable and sustainable provisioning of basic and enriching teaching and learning resources
- Support the transformation of the role of teachers (facilitative co-learners) and of learners (self-directed learning, co-facilitators of learning and monitoring their own learning processes) the 21st century learning spaces
- Support lifelong learning

3. Enhance system leadership, management, and governance

- Capacity for data collection and management
- Capacity for data analysis and for continuous system renewal
- Plugging system leakages
- Monitoring and ensuring continuous system development
- Tracking desired system impact
- Strengthening strategic leadership for leveraging technology to transform and bring our education and learning systems to the 21st century

4. Realize high resource efficiency gains and sustainability taking a holistic approach to resources while placing the right accent on key cost drivers

- Time, especially teacher and learners' time
- Technical resources such as the pooling of best practice teachers and teaching
- Physical resources especially where there is shortage and where there is under-utilization
- Fiscal resources

5. Placing an accent on key cost drivers in education and learning

- Teachers
- Teaching and learning materials
- Physical spaces and equipment

Way Forward

Chairperson, Excellencies, distinguished participants, I trust that the Forum will very concretely explore how to reinforce ongoing efforts of GEQAF partner countries towards the adoption of an ICTs perspective to education and learning. In the process, the Forum will take into account challenges associated with the adoption of this proposed perspective. Some these challenges include the initial costs of adopting ICTs, connectivity, the fast pace of change of ICTs which far outstrips any fashion industry of our times

What constitutes appropriate phasing and sequencing

How to identify key levers of progress

How to sustain the proposed transformation.

In conclusion, I wish to reiterate the IRE's commitment to support GEQAF partner countries in this endeavor. Both the IBE and Google will be listening closely to areas which partner countries identify as requiring our joint support. The IBE / Google partnership will remain responsive and I trust will continue to grow. It has carried us this far and it has worked.

I wish you a very successful Forum.

ANNEXURE 3

PROGRAMME SCHE

INTERNATIONAL FORUM ON ADOPTING AN ICT PERSPECTIVE TO EDUCATION AND LEARNING

NEW DELHI – October 31st to November 4th , 2016

PRELIMINARY PROGRAM

DAY 1 - Monday, October 31st - Global Vision, perspective and framework for ICT in education

TIME	DESCRIPTION
09:00 – 10:00	Reception and Registration
10:00 – 11:15	<p>Words of welcome: Professor Hrushikesh Senapaty: Director, National Council of Education Research and Training (NCERT), New Delhi</p> <p>Opening Remarks: Honorable Minister Ms. Matsie Angelina Motshekga, Ministry of Education, Republic of South Africa</p> <p>Opening Remarks: Mr. M.I. Kgatjepe, Provincial Ministry of Education of Limpopo Province, South Africa</p> <p>Opening Remarks: AndreK Panyaza Lesufi, MEC for Education, Republic of South Africa</p> <p>Opening Remarks: Mr. Maneesh Garg, Joint Secretary, MHRD-Government of India, New Delhi</p> <p>Opening Remarks and welcome: Mr. Tekaligne Godana, Senior Project Officer, UNESCO-International Bureau of Education (IBE), Geneva</p> <p>Official Opening: Shri Upendra Kushwaha, Honorable Minister of State for Human Resource Development (MHRD), Government of India</p> <p>Vote of Thanks: Prof. B.K. Tripathi, Joint Director, NCERT, New Delhi</p>
11:15 – 11:45	Networking Coffee break
11:45 – 13:15	<p>Keynote address: Why Adopt an ICT Perspective to Education and Learning: Setting the Scene - Dr. Mmantsetsa Marope – Director, UNESCO-International Bureau of Education (IBE), Geneva (Video Message)</p> <p>Discussions moderated by Mr. Tekaligne Godana, Senior Project Officer, UNESCO-International Bureau of Education (IBE), Geneva</p>
13:15 – 14:15	Lunch
14:15 – 15:15	<p>Keynote address: Transforming for 21st Century Learning – Ms. Bani Dhawan, Head of Education, Google India</p> <p>Discussions</p>
15:15 – 15:30	Presentation of programme and session Facilitators for Day 2 to Day 5
15:30 – 15:45	Tea/ Coffee break
15:45 – 17:00	ICT Fair : Showcase of tools and resources from participating countries and partners, i.e. GEQAF web-version, Google, CIET-NCERT, etc.
18:00 – 19:00	Cultural Evening
19:00 – 21:00	Dinner, Ashok Hotel

INTERNATIONAL FORUM ON ADOPTING AN ICT PERSPECTIVE TO EDUCATION AND LEARNING

NEW DELHI – October 31st to November 4th , 2016

PRELIMINARY PROGRAM

DAY 2 - Tuesday, November 1st - Expanding equitable access using ICT

TIME	DESCRIPTION
09:00 – 09:10	Introduction for the day: Review of the programme for the day and general announcements including daily evaluation – Dr. Clarisse Lima (IBE)
09:10 – 11:10	Session 1: Designing e-learning environment for education and social inclusion of students with disabilities (Dr. Natalia Amelina - Institute for Information Technologies in Education - IITE-UNESCO, Moscow) Assistive Technologies in School Education: Exemplar Inclusive Learning Material (Prof. Anupam Ahuja, Head, Department of Education of Groups with Special Needs, NCERT, New Delhi)
11:10 – 11:30	Tea/ Coffee break
11:30 – 13:30	Session 2: SWAYAM (Study Webs of Active Learning for Young Aspiring Minds): MOOCs for School and Higher Education (Prof. Uma Kanjilal, IGNOU, New Delhi) National Programme on School Standards and Evaluation Shaala Siddhi: An initiative towards School Improvement (Prof. Pranati Panda, NUEPA, New Delhi)
13:30 – 14:30	Lunch
14:30 – 15:00	ePathshala: A Mobile platform for accessing digital books and other digital resources (Prof. Amarendra Behera, Head ICT and Training, CIET-NCERT)
15:00 – 15:15	Tea/ Coffee break
15:15 – 17:00	Site visit: CIET-NCERT – Digital Content Creation – Hands on in Studios (Prof. Lal Singh, Head, Media Production Division, CIET, NCERT, New Delhi)

INTERNATIONAL FORUM ON ADOPTING AN ICT PERSPECTIVE TO EDUCATION AND LEARNING

NEW DELHI – October 31st to November 4th, 2016

PRELIMINARY PROGRAM

DAY 3 - Wednesday, November 2nd - Improving availability and quality of education resources using technology

TIME	DESCRIPTION
09:00 – 09:10	Introduction for the day: Recap of the previous day (main points). Review of the programme for the day and general announcements - Dr. Clarisse Lima (IBE)
09:10 – 11:10	Session 3: Adapting, Using and Developing OERs in 20 different countries (Dr. Svetlana Knyazeva, IITE-UNESCO, Moscow) Lithuania Experience (Dr. Airina Volungevičienė and Dr. Margarita Tereseviciene, Vytautas Magnus University, Republic of Lithuania)
11:10 – 11:30	Tea/ Coffee break
11:30 – 13:30	Session 4: Technology is not an afterthought: TPACK as a Frame work for ICT integration into Teacher Professional Development (Dr. M'hammed Abdous, Old Dominion University, Norfolk, USA)
13:30 – 14:30	Lunch
14:30 – 16:15	Session 5: National Repository of Open Educational Resources (NROER) online and offline (Dr. Nagarjuna G, HBCSE-TIFR, Mumbai)
16:15 – 16:30	Tea/ Coffee break
16:30 – 17:00	Announcements for the next day: Review of the programme for the following day: Arrangements for site visit and programme - Dr. Clarisse Lima (IBE)
19:00 – 21:00	Dinner hosted by Director NCERT

INTERNATIONAL FORUM ON ADOPTING AN ICT PERSPECTIVE TO EDUCATION AND LEARNING

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PRELIMINARY PROGRAM

DAY 4 - Thursday, November 3rd - Improving the delivery at classroom level through innovative ICT applications

TIME	DESCRIPTION
08:30 – 09:00	<p>Participants will meet at the lobby of the Ashok Hotel to take a shuttle for the Site Visit.</p> <p>Participants staying at the NIE Guest House, NCERT will meet at the lobby of the guest house to take a shuttle for the site visit.</p>
09:00 – 11:00	<p>Site Visit: SANSKRITI SCHOOL in Chanakya Puri - A School that uses Google Applications for Education (Mrs. Abha Sahgal, Principal)</p>
11:00 – 12:00	Tea/ Coffee break at the school and return to CIET-NCERT
12:00 – 14:00	<p>Session 6: Google Education Tools: Chromebooks & Classroom Hands-on, featuring case studies from WPPs South Africa and Indian Government pilot. (Mr. Jack Fermon & Mrs. Karen Walstra, Google for Education)</p>
14:00 – 15:00	Lunch
15:00 – 17:00	<p>Session 7: ICT and STEM Education, Mauritius Experience (Mr. Ricaud Gervais Danyel Auckbur, Director, Tertiary and e-Education, Ministry of Education Human Resources, Republic of Mauritius)</p>
17:00 – 17:15	Tea/ Coffee break

INTERNATIONAL FORUM ON ADOPTING AN ICT PERSPECTIVE TO EDUCATION AND LEARNING

NEW DELHI – October 31st to November 4th , 2016

PRELIMINARY PROGRAM

DAY 5 - Friday, November 4th - Enhancing education system efficiency using ICT

TIME	DESCRIPTION
09:00 – 09:10	Introduction for the day: Recap of the previous day (main points). Review of the programme for the day and general announcements - Dr. Clarisse Lima, IBE-UNESCO
09:10 – 11:10	<p>Session 8: 360° assessment in the school, Dr. Clarisse Lima, IBE-UNESCO</p> <p>School Automation System (MIS/ERP) of Kendriya Vidyalaya Sangathan: Shaala Darpan, Dr. (Smt.) V. Vijayalakshmi, Joint Commissioner (Acad.)- Kendriya Vidyalaya Sangathan, New Delhi</p> <p>E-content Development Project in Egypt, Ms. Inas Mohamed Sobhy, Department Manager Teacher, Ministry of Education – Egypt</p> <p>The status of educational institutions in Botswana, Mr. Masome B.T. Rebaone, E-Education Policy Coordinator, Ministry of Basic Education- Botswana and Mr. Dimane Mpoeleng, Botswana International University of S & T, Government of Botswana</p>
11:10 – 11:30	Tea/ Coffee break
11:30 – 13:30	<p>Session 9: Monitoring the Education System using ICT: Experience from the Sultanate of Oman, Dr. Badar Hamood Rashid AL Kharusi, Director General of Human Resources Development, Ministry of Education, Sultanate of Oman and Mr. Faisal Ali Nasser Al Busa'idi, Assistant Director of Information Technology, Sultanate of Oman</p>
13:30 – 14:15	Closing of Workshop
14:30 – 17:00	Lunch and Sightseeing for those who have not travel arrangements for today

ANNEXURE 4

LIST OF FACILITATORS ALONG WITH THEIR BRIEF PROFILE

S.NO.	NAME, DESIGNATION AND BRIEF PROFILE
1.	<p>Ms. Bani Paintal Dhawan Head of Education, Google India</p> <p>Ms. Bani Paintal Dhawan heads Google for Education in India. She has been in Google for over 7 years and has held leadership positions in marketing and sales before leading the education group at Google in India. With over 17 years of experience, Bani has spearheaded many program at Google impacting student learning and teacher professional development. Prior to Google, Bani was heading global communication at Infosys where she lead her team to achieve milestones like the remote opening of NASDAQ by Infosys and India Everywhere campaign at World Economic Forum at Davos</p>
2.	<p>Dr. Natalie Amelina Senior Specialist of the UNESCO –Institute for Information Technologies in Education, Moscow</p> <p>Dr. Natalia Amelina, Ph.D., senior specialist of the UNESCO Institute for Information Technologies in Education. Professional activity of Mrs. Amelina N. is connected with studying, analyses and development of training materials and recommendations on various trends of ICT use in educational process, including ICT for skills development, adaptation and use of ICT for people with disabilities, ICT in preschool and primary school education, etc. She has experience of more than 20 years in pedagogics. Natalia Amelina is an author of more than 30 publications in the field of education. Working for UNESCO IITE Mrs. Amelina took part and organized many international and national conferences, carried out a large number of international meetings and the training in different countries of the world.</p>
3.	<p>Prof. Anupam Ahuja Head, Department of Education of Groups with Special Needs, NCERT , New Delhi</p> <p>Dr. Anupam Ahuja is Professor and Head of the Department of Education of Groups with Special Needs at the NCERT. She has more than 30 years of national and international experience in the field of Education with a focus on developing inclusive practices. She has worked on training, initiating, guiding and evaluating and inclusive programmes in Africa, Asia, and Eastern Europe for UNESCO, UNICEF, World Bank, Braillo Norway, and a number of other international organisations. She has contributed to many national and international publications on education and school improvement for marginalised groups. She reviewed the “Education for All’ plans for 17 Asian and Pacific countries with a focus on the linkages between inclusion and the EFA on behalf of UNESCO Bangkok. She is the founder and co-editor of EENET Asia.</p>

4.	<p>Prof. Uma Kanjilal Library and Information Science, Director I/C of Advanced Centre of Informatics and Innovative Learning (ACIIL), Indira Gandhi National Open University (IGNOU), Delhi, India</p> <p>Dr. Uma Kanjilal is Professor of Library and Information Science and presently also Director I/C of Advanced Centre of Informatics and Innovative Learning (ACIIL) at Indira Gandhi National Open University (IGNOU), New Delhi. She has more than 24 years of experience in Open and Distance Learning System. Among her specialization areas are ICT applications in libraries, Digital libraries, e-learning and multimedia courseware development. She has coordinated major projects at the University and National level like eGyankosh: A National Learning Resource repository, IGNOU FlexiLearn portal, e-learning programmes of the university. She is also working as coordinator for Sakshat portal, official website of National Mission on Education through ICT (NMEICT) of MHRD. Prof. Kanjilal has more than 30 research papers, articles in national and international journals and other publications to her credit. She has authored one book and co-edited two books.</p>
5.	<p>Prof. Pranati Panda Professor of Comparative Education and International Cooperation, NUPEA, Delhi, India</p> <p>Dr. Pranati Panda is Professor of Comparative Education and International Cooperation, National University of Educational Planning and Administration (NUEPA). She has served in various academic positions at NCERT and taught both at undergraduate and postgraduate level, organised capacity development programmes, conducted several research and evaluative studies: Teacher Education Policy Analysis, Evaluative Studies on Centrally Sponsored Teacher Education Institutions, School Based In-service Education and Training of Teachers (SBINSET), Legislation and Educational Development, Large Size Classes, Safe School, Human Rights and Inclusive Education; handled major projects: Encyclopedia of Indian Education and Fifty years of Teacher Education in India: authored several books, monographs, self-learning modules, training packages and published research papers and articles in national and international journals.</p>
6.	<p>Prof. Amarendra Prasad Behera Head, Department of Information and Communication Technology & Training Division, CIET- NCERT, Delhi, India</p> <p>Dr. A.P. Behera is Professor of Educational Technology and Head of Department of ICT & Training Division in CIET-NCERT. He is working in NCERT since 1996 on various assignments - Curriculum Development, ET and ICTs in Education, Development of e-Contents, Training of Teachers and Educators on ICTs in Education. Also involved in various research studies on ET/ ICT in Karnataka, Chandigarh, KVS, SIETs and Rehabilitation Council of India. He has worked on piloting of UNESCO's General Education Quality Analysis Framework (GEQAF) in India. He has organised several ICT trainings for teachers and teacher educators in India. Provided resource support to national and international organisations, i.e. NIOS, KVS, JNV, CTSA, SCERTs/ SIEs, IGNOU, Academic Staff Colleges of Indian Universities, CEMCA-COL, UNESCO, USEFI, UNICEF, USAID, NIE-Sri Lanka on educational technology, media and curriculum development related issues.</p>

7.	<p>Prof. Lal Singh Head, Media Production & Engineering Divisions (MPD & ED), CIET- NCERT, New Delhi, India</p> <p>From 1978 Prof. Lal Singh has been working in the field of educational Media research (Centre For Educational Technology, NCERT). Dr. Singh entered in the field of production of educational audio and video programmes (State Institute of Educational Technology, SCERT, UP, Lucknow & Central Institute of Educational Technology, NCERT). He has evaluated a large number of media programmes. Also organised several trainings on script writing and production for RIEs, SIETs, etc. He has various research papers published in reputed national research journals related to power motivation, impact and management of educational electronic media programmes. Presently he is heading the Media Production and Engineering Divisions of Central Institute of Educational Technology, NCERT, New Delhi.</p>
8.	<p>Dr.Airina Volungeviciene Associate Professor at Vytautas Magnus University, Lithuania</p> <p>Assoc. Prof. Dr. Airina Volungevičienė has been working among leading researchers, methodology specialists and education policy makers in the area of technology enhanced learning (TEL) development in Europe since 1997. Having established the national network for distance and e-learning in the country, she continued as a leader in research and project work to promote the development of TEL in Lithuania and Europe, introducing many innovations in different education organizations from school, VET, adult learning and higher education sectors.</p> <p>Since 2007, her research activities are based at Vytautas Magnus University, where she is the head of Innovative Studies Institute and an associate professor at the department of Education. Airina is responsible for TEL integration into university studies and curriculum designing. She coordinates international projects and implements research with the focus on TEL curriculum designing and quality assurance, virtual mobility, open educational resources and TEL integration into an organization. She published more than 30 papers on TEL, virtual mobility and OERs, as well as 5 research studies and 2 monographs.</p> <p>She established and was the first president of Lithuanian Distance and eLearning (LieDM) association in Lithuania (2010 – 2016). Since 2016 she is the Chair of the Board of this association. Airina was the Vice President for Research of European Distance and eLearning Network (EDEN). She was elected the President of EDEN in 2016.</p>
9.	<p>Dr.Margarita Tereseviciene Professor at the Department of Educational Sciences, Vytautas Magnus University, Lithuania</p> <p>Professor at the Department of Educational Sciences, Vytautas Magnus University, Lithuania. Personal research area: adult learning, recognition of prior learning, technology enhanced learning. She supervised ten doctoral theses on adult learning and teaches in the study programmes of Andragogy. She has been trainer in variety in-service training programmes of adult educators. Has acted as expert in the field of adult education at the Ministry of Education and Science Republic of Lithuania; expert for Research Council of Lithuania. She is also a member of board Lithuania Distance and eLearning Association.</p>

10.	<p>Dr.M’hammed Abdous Assistant Vice-President for Teaching and Learning with Technology at Old Dominion University in Norfolk, Virginia, USA</p> <p>Dr. M’hammed Abdous is the Assistant Vice-President for Teaching and Learning with Technology at Old Dominion University in Norfolk, Virginia and the Director of the university’s Center for Learning and Teaching. In this capacity, Dr. Abdous provides institutional leadership (1) to lead (design, develop, implement, evaluate and research) distance learning and e-learning programs and solutions; (2) to conceive, implement, and evaluate processes for effectively integrating technology into teaching and learning practices; and (3) to develop faculty development programs. Dr. Abdous’ research interests include, among other things, teacher professional development, emerging technologies, learning systems design, and quality assurance for online courses. Along with his academic career, Dr. Abdous has an extensive international consulting experience (including work in Bahrain, Gabon, Moldova, Morocco, Tunisia, Sudan and Syria). In this role, Dr. Abdous has helped several international organizations (such as UNICEF, IBE-UNESCO, and USAID) spearhead projects related to online learning development, teacher professional development, ICT integration, curriculum development, and program evaluation.</p>
11.	<p>Dr.Nagarjuna G. Associate Professor, Homi Bhabha Centre for Science, Education, Tata Institute of Fundamental Research, Mumbai, India</p> <p>Dr. Nagarjuna Gadiraju is Associate Professor in the Homi Bhabha Centre for Science Education, Tata Institute of Fundamental Research, Mumbai, India. His major research interests include Science Education, Cognitive Science, History and Philosophy of Science and Structure and Dynamics of Knowledge. As an activist he focuses on promoting free knowledge and free software and serves as the chairperson of Free Software Foundation of India. Some of his areas of interest are semantic web, knowledge organization, AI, philosophy of science, biological roots of knowledge and modelling complex systems with specific interest in cognitive development. He is the author of a specification and implementation of a distributed knowledge base called GNEWSYS. He is an architect of gnowledge.org, a community portal. He contributed as a core developer and architect of SELF Platform.</p>
12.	<p>Mrs. Abha Sahgal Principal, Sanskriti School, Delhi, India</p> <p>Ms Abha Sahgal is the Principal of Sanskriti School since 2008. Prior to joining Sanskriti, Ms Sahgal was the Founder Principal of Delhi Public School, Sharjah, a branch of Delhi Public Schools, from 2000 to 2008. She is credited for establishing DPS Sharjah as an institution of excellence. She has 30 years of teaching experience, she started her career in DPS RK Puram, and moved as headmistress to DPS Vasant Vihar, in New Delhi. Ms Sahgal has authored and co-authored several books, published by Orient Longman and S.Chand & Co.</p>

13.	<p>Mr.Jack Fermon Leader of Google Connectivity Area for Education, Mexico</p> <p>Mr. Jack Fermon is an IT and Telecommunications engineer with a Master’s degree in Industrial engineering and two other specialties in Data Mining and Strategic Planning. He has worked as freelancer developing web platforms and in several IT companies designing and implementing Web and Telecommunications platforms. Jack has been working at Google for more than nine years in different teams.</p> <p>Besides of the IT projects Jack has several publications in Telecommunications and Data Mining, and he was the National Director of Telecommunications at the Mexican Red Cross for three years, helping communicating affected areas in natural disasters.</p> <p>Currently Jack leads the Connectivity Area for Education. Among his responsibilities and projects, he designs and implements wired and wireless networks for educational institutions and rural schools in Developing Countries among other Connectivity strategies, and leads initiatives in these markets that foster the Internet Ecosystem and prepare them to adopt technology. Recently, he and his team contributed to the development of Scholas, an Education Web Platform to communicate and integrate schools in all the world, sponsored by the Pope Francis.</p>
14.	<p>Mrs.Karen Walstra Program Manager, Google: Chrome GTM, South Africa</p> <p>Mrs. Karen manages Chrome projects to enable emerging markets educational environments. Prior to working at Google she was a teacher, teacher-trainer and head of academics exploring educational change. She coordinated a teacher and school leader development outreach project. She is an author and presenter. She studied Educational Technology at University of the Witwatersrand, and has her Honours with a focus on response systems in the classroom, and her Masters, which focused on mobile learning. She is passionate about how technology can enhance and empower learning.</p>
15.	<p>Mr.Ricaud Gervais Danyel Auckbur Director of E-Education at the Ministry of Education and Human Resources, Tertiary Education and Scientific Research, Mauritius</p> <p>Mr Auckbur is presently the Director of E-Education at the Ministry of Education and Human Resources, Tertiary Education and Scientific Research, Mauritius. He holds academic degrees at Bachelor and Masters levels, and these were topped up with professional specialised qualifications in various sectors of Educational Planning and Administration.</p> <p>He his experience of 25 years in the world of Education started in the teaching of Physics at secondary level, and subsequently grew through various positions in Education administration, getting experience and expertise along the way in several sectors and levels of educational management.</p> <p>As currently Head of E-Education at the Ministry, he is closely presently involved in supporting policy, and in the coordination and steering of Education projects in Mauritius and in both Francophone and English-speaking Africa.</p>

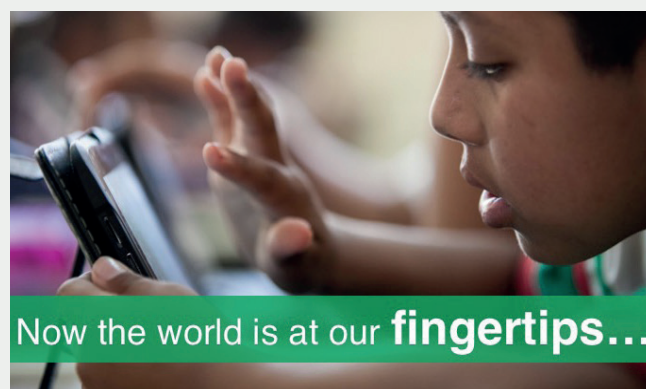
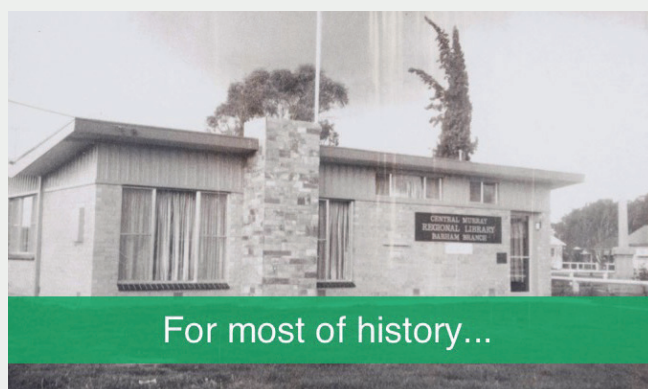
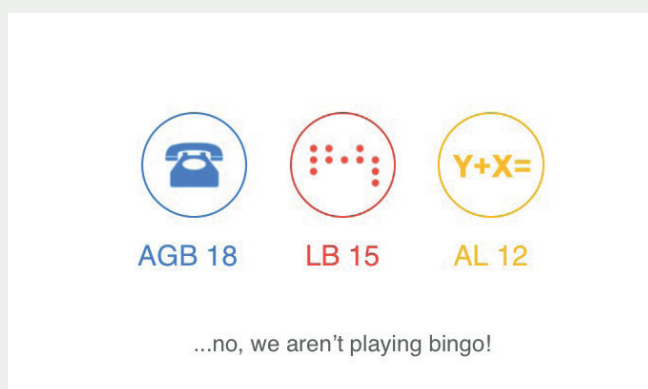
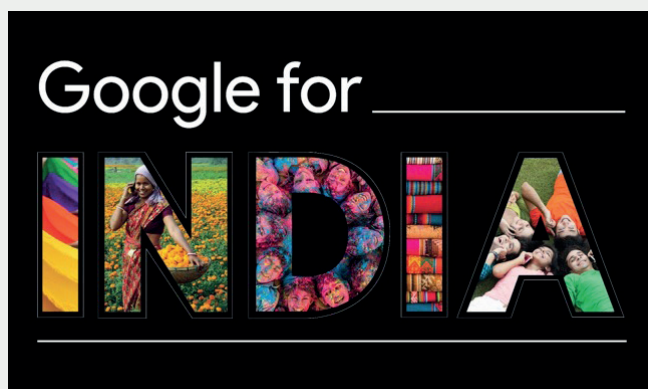
16.	<p>Dr. Clarisse Lima ICT Consultant for UNESCO-IBE, Brazil</p> <p>Dr. Clarisse Olivieri de Lima is an ICT for Education Consultant for UNESCO-IBE. She holds a PhD degree in Educational Psychology from the University of Connecticut, a Masters in Brazilian Education and is a Technologist in Data Processing both from the Pontifical Catholic University of Rio de Janeiro, Brazil. She is also a Specialist in Knowledge Management from Federal University of Rio de Janeiro. Clarisse has a large experience in Education acting mainly in the following areas: global citizenship education, distance education, international development, corporate education, assessment and ICT integration to Education.</p> <p>Throughout her career, Clarisse taught children from vulnerable communities in Rio de Janeiro (favelas), introducing them to the use of computers and the internet helping them build bridges between cultures, languages and realities. She led multicultural collaborative projects and conducted research on gender issues. She designed courses for distance education, provided training for instructors and organized learning trails based on knowledge management processes, collecting, registering and sharing best practices in different work environments. In her most recent job, she has developed and implemented a strategic plan for the Media and Education Department and coordinated the integration of technology into the curriculum through interdisciplinary projects, and designed and delivered professional development programs to promote the acquisition of 21st century skills for students, in-service teachers and coordinators.</p>
17.	<p>Dr. V. Vijayalakshmi Joint Commissioner (Academics), Kendriya Vidyalaya Sangathan, New Delhi, India</p> <p>Dr. V. Vijayalakshmi joined KVS in December, 1995 as Education Officer and served at Mumbai and Hyderabad Regions till 2002. She was promoted to the post of Assistant Commissioner in the year 2002 and served at Bhopal and Hyderabad Regions respectively and also at KVS (HQ) in New Delhi. She was promoted to the post of Deputy Commissioner (now designated as Joint Commissioner) in the year 2010 and is serving KVS(HQ) since then.</p> <p>Her astute insight into the latest educational trends and administrative efficiency enabled her to rise to the post of Joint Commissioner in KVS, within a short time. Having been a Science oriented person, she applies scientific temper and attitude in solving academic as well as administrative problems. Her innovative ideas have helped her to usher in many teacher development programmes and result oriented trends in student development techniques.</p>
18.	<p>Ms. Inas Mohamed Sobhy Department Manager Teacher, Ministry of Education – Egypt</p> <p>Mrs. Inas Sobhy, eContent Development Project Manager at ministry of education - Egypt, studied physics, chemistry and educational sciences at Ain shams University, at Cairo.</p> <p>She continued her education gaining the following diplomas: “Environmental Sciences”, Ain Shams University, “Teaching Technology”, Cairo University, “Methodology of Teaching & Curriculum Reaches”; Chemistry Dept., Ain Shams University, then received her Master Degree in “The Effectiveness of Virtual Classroom In Developing The Environmental Concepts & Solving Problem Skills” at Ain Shams</p>
19.	<p>Mr. Masome B.T. Rebaone E-Education Policy Coordinator, Ministry of Basic Education- Botswana</p>

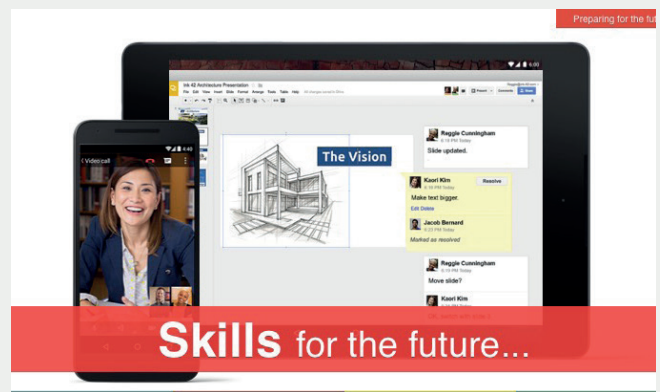
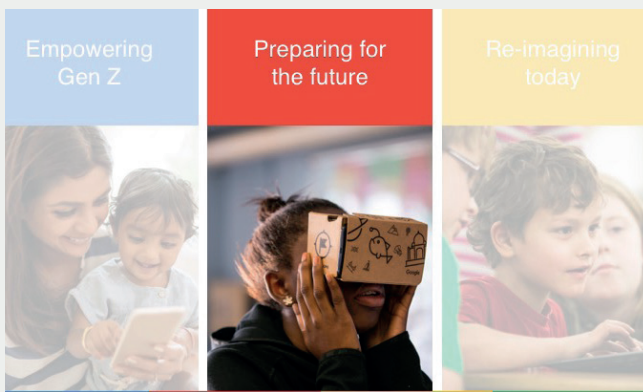
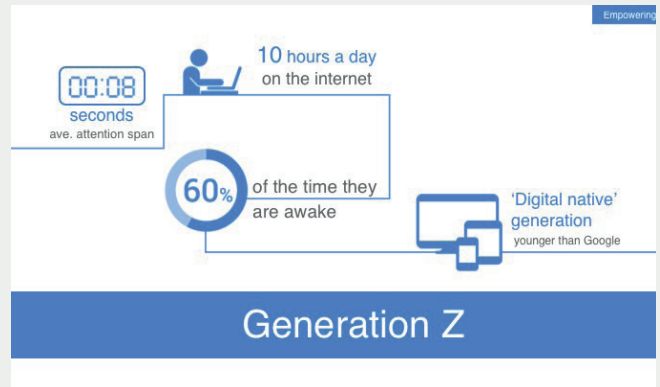
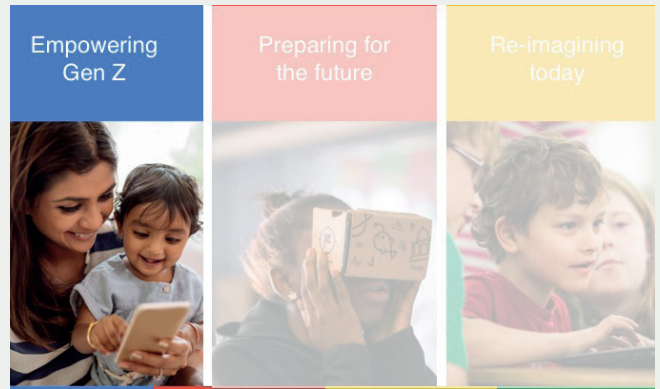
20.	<p>Mr. Dimane Mpoeleng Botswana International University of S & T, Government of Botswana</p> <p>Dr. Dimane Mpoeleng's is a Senior Lecturer in the department of Computer Science and Information Systems, College of Science. He obtained his PhD in 2005 from the University of Newcastle upon Tyne specialising in Fault Tolerance and Distributed Systems. His university teaching experience and research spans 20 years and his publications cover several books, journal papers, conference papers, technical reports, and book chapters</p>
21.	<p>Dr. Badar Hamood Rashid Al Kharusi Director General of Human Resources Development, Ministry of Education, Sultanate of Oman</p> <p>Badar Al kharusi currently serves Director General at Human Resources Development Directorate, Ministry of Education, Oman. He holds a Bachelor of Education and a Master of Education from Sultan Qaboos University. In 2011, he finished his PhD in education from Curtin University, Western Australia. He worked as a teacher and supervisor. He also served as Deputy Director of the Technical Office for Studies and Development, Ministry of Education, Oman. His research interests focus on educational reform, and on issues related to the theory and practice of citizenship education.</p>
22.	<p>Mr. Faisal Alinasser Al Busa'idi Assistant Director of Information Technology, Sultanate of Oman</p>

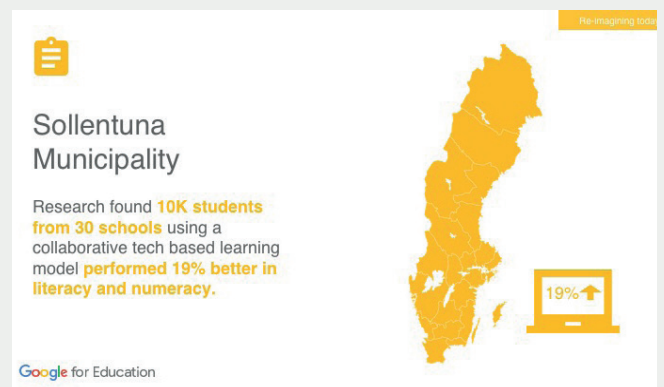
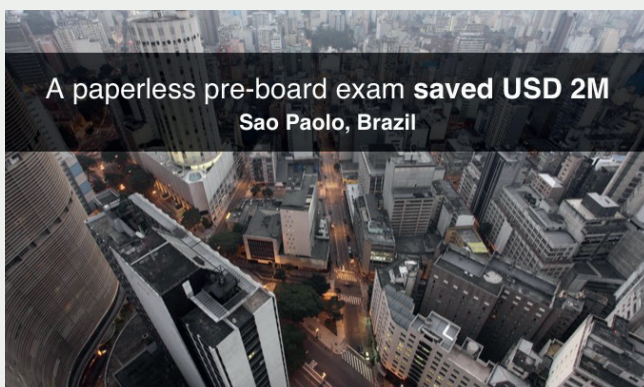
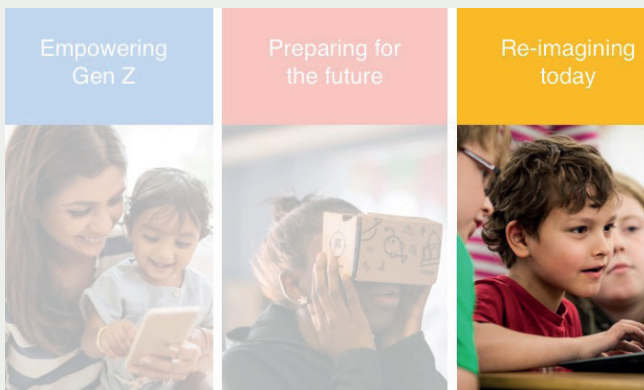
ANNEXURE 5

PRESENTATIONS BY FACILITATORS


Presentation of Day 1 (31ST Oct, 16): Ms. Bani Paintal Dhawan










Re-imagining today

 Southern Cross

Southern Cross Catholic College

Weaving **professional development** into the school's DNA

Google for Education

-  7-minute demos in weekly staff meeting
-  1 hour formal training every term
-  Techno-Breakfast twice a term

Future Classroom initiative
@ GHS School, Vijay Nagar, **HYDERABAD**

@ ZP Upper Primary School, Tarodi, **NAGPUR**

@ Chandlodiya School No 1, **AHMEDABAD**



Re-imagining today



Google Educator Groups

Re-imagining today

Investing in the future...

-  Sustainability
-  Equity
-  Impact

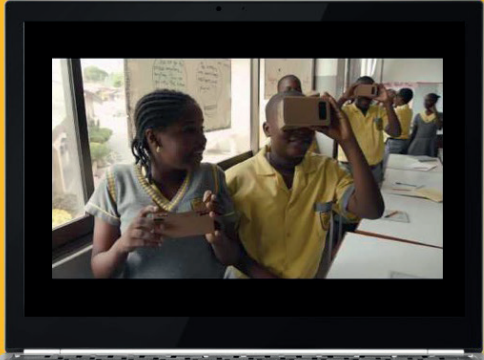
Re-imagining today

The best of Google, for educators and students

-  Google Classroom
-  Google Apps for Education
-  Chromebooks and Android tablets
-  Expeditions
-  YouTube

Collaborative platform High speed learning devices Rich content

Google for Education



Re-imagining today



Presentation of Day 2 (1st Nov, 16): By Dr. Natalia Amelina



UNITED NATIONS
EDUCATIONAL, SCIENTIFIC AND
CULTURAL ORGANIZATION

POLICY ADVOCACY
AND RESEARCH

TECHNICAL ASSISTANCE

TEACHER
PROFESSIONAL
DEVELOPMENT

DIGITAL PEDAGOGY

OPEN EDUCATIONAL
RESOURCES AND
LEARNING MATERIALS

NETWORKING AND
PARTNERSHIP




INTERNATIONAL FORUM ON ADOPTING OF ICT PERSPECTIVE
IN EDUCATION AND LEARNING
NEW DELHI - INDIA – October 31st to November 4th 2016

**Designing e-learning
environment for education
and social inclusion of
students with disabilities**

Dr Natalia Amelina, PhD

UNESCO IITE



UNITED NATIONS
EDUCATIONAL, SCIENTIFIC AND
CULTURAL ORGANIZATION

UNESCO IITE. Focus Areas

POLICY, RESEARCH
and TECHNICAL
ASSISTANCE

TEACHER
PROFESSIONAL
DEVELOPMENT and
NETWORKING


DIGITAL PEDAGOGY,
OER and LEARNIG
MATERIALS



UNITED NATIONS
EDUCATIONAL, SCIENTIFIC AND
CULTURAL ORGANIZATION

IITE. Policy advocacy and technical assistance based on research





- Research and Publications
- Workshops
- Conferences
- High Level Meetings

Policy Brief

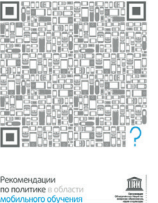
**CLOUD COMPUTING
IN EDUCATION**

EXECUTIVE SUMMARY


Cloud computing is a new paradigm of computing that allows users to access and use computing resources over the Internet. It is a model for delivering IT services in which computing resources are pooled to allow flexible scaling of IT resources and IT usage. It allows for easy and scalable acquisition of computing resources and IT services, and it allows for the delivery of IT services over the Internet. Cloud computing is a model for delivering IT services in which computing resources are pooled to allow flexible scaling of IT resources and IT usage. It allows for easy and scalable acquisition of computing resources and IT services, and it allows for the delivery of IT services over the Internet.

CONTEXT AND OUTLINE OF THE PROBLEM

The problem of cloud computing in education is a complex one. It involves a number of factors, including the need for a secure and reliable infrastructure, the need for a clear and consistent policy, and the need for a well-trained workforce. The problem of cloud computing in education is a complex one. It involves a number of factors, including the need for a secure and reliable infrastructure, the need for a clear and consistent policy, and the need for a well-trained workforce.








Рекомендации по политике и практике использования облачных технологий



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ICT for inclusive education

Main topics of the session

- Learning barriers and the role of ICTs in overcoming them and facilitating the inclusion education;
- Selection of ICTs for education of persons with disabilities;
- Key principles of design: ICT infrastructure for education of persons with disabilities;
- ICT policy for inclusive education.



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Links

The Salamanca Statement and Framework for Action on Special Needs education (1994). Online:
http://www.unesco.org/education/pdf/SALAMA_E.pdf

Convention on the Rights of Persons with Disabilities (2006)
<http://www.un.org/disabilities/default.asp?navid=13&pid=150>
48th session of the International Conference on Education,
Geneva, 25-28 November 2008
<http://www.ibe.unesco.org/en/ice/48th-ice-2008.html>

Inclusive education resources at UNESCO
<http://www.unesco.org/en/inclusive-education/>



International Conference in Qingdao (China). Qingdao Declaration

INTERNATIONAL CONFERENCE ON ICT AND POST 2015 EDUCATION
A journey towards inclusive and equitable quality education and lifelong learning



Seize digital opportunities and educational transformation:
 Access and Inclusion, OER and Open Solutions,
 Quality Learning, Lifelong Learning Pathways, Online Learning Innovations,
 Quality Assurance and Recognition of Online Learning, Monitoring and Evaluation,
 Accountability and Partnership, International Cooperation

QINGDAO DECLARATION
 International Conference on
 ICT AND POST-2015 EDUCATION
 23-25 May 2015
 Qingdao City, the People's Republic of China

2015-2030: A journey towards inclusive and equitable quality education and lifelong learning

ICT in inclusive education: equal opportunities for all

The provision of inclusive ICTs for students with disabilities or learning difficulties is about removing barriers and enabling all students to access the same educational opportunities. Accessible learning opportunities respect diversity, encourage acceptance and inclusion and ultimately benefit all students, not just those with disabilities or learning difficulties.

Learning barriers and the role of ICT

Learning barriers in education of persons with disabilities are caused by the following factors:

- Physical
- Social
- Economic



The role of ICT in inclusive education

ICTs play 3 main roles in education:

- Compensation uses – technical assistance that enables the active participation in traditional educational activities such as reading or writing
- Didactic uses – the general process of using ICTs to transform approaches to education. Many ICTs that can be used as a didactical tool to enable a more inclusive learning environment
- Communication uses – technologies that can enable communication – often referred to as alternative and augmentative communication devices and strategies

Inclusive ICTs for education

- Mainstream technologies such as computers, web browsers, word processors, whiteboards and mobile phones that contain in-built accessibility features etc.
- Assistive Technologies, such as hearing aids, screen readers, adaptive keyboards, augmentative communication devices etc.




- Compatibility between assistive technology products and mainstream technologies.
- Accessible media and formats, such as accessible HTML (Hypertext Markup Language), videos with captioning, DAISY (Digital Accessible Information System) books, etc.

Typical Classroom Technologies



Software should work with ALL access devices.

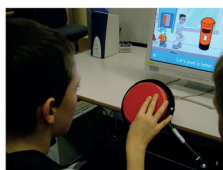
Interactive Whiteboards

Touch monitors and tablets

Large key, high visibility or compact keyboards

Alternative pointing devices, switches, communication devices, magnifiers, symbols etc.

Technologies for persons with motor impairments



Technologies for persons with visual impairments



Technologies for persons with hearing impairments



Selection of ICTs for education of persons with disabilities

- It should be a negotiation process, a constructive dialogue between one or more professionals and the end-user
- The different professionals (physicians, rehabilitation psychologists, physical and occupational therapists, etc.) generally make identification, assessment and evaluation of the impaired function, then they can propose and discuss with the user and his/her family the adoption of a kind of AT.
- In some countries (mostly in the North-West area) it is common to find services on choosing and training on application based on the AT centres.
- Peer counselling



Key stages of ICT policy development in inclusive education

The following four stages for policy development are recommended for the successful integration of accessible ICTs in an educational environment. These include the design and development of the accessible ICTs, their implementation and improvement and the assessment of their benefits



Main areas for policy intervention

Infrastructure

This includes both the technical infrastructure required to support the use of ICTs and the wider AT infrastructure.

Curriculum design and modification

National educational policy should require educational systems to adopt the use of ICT in all areas of curriculum development. ICTs can help transform static curriculum resources into flexible accessible digital media.

Teachers ICT professional standards

Along with the adoption of the new ways of learning, teachers' role is doomed to change very deeply and rapidly: they will become managers and facilitators of learning; will design, adapt, manage and evaluate learning environments.

ICT policy for inclusive education

Principles for development and implementation of ICT policy for inclusive education:

- A non-discriminatory approach encompassing human rights, gender equality and access to services will be taken at all levels of this policy's implementation.
- Access to inclusive education opportunities that provide inclusive curricula, as well as reasonable accommodations to meet individual needs, is every learner's right.
- Access to inclusive accessible and affordable educational ICTs that meet the individual needs of all students, is a right.
- The provision of inclusive ICTs for students with disabilities or learning difficulties must be applied across the continuum of educational opportunities within lifelong learning (anytime, anywhere)

Pilot projects

IT center for persons with visual impairments



IT Center for persons with motor and speech disorders



Hard- and soft-ware for persons with disabilities



UNESCO IITE
invites you for cooperation in the field of ICT-integrated pedagogy to reach the targets of Education-2030

Dr. Natalia Amelina, PhD, UNESCO IITE

n.amelina@unesco.org

<http://iite.unesco.org>



Presentation of Day 2 (1st Nov, 16): By Prof. Anupam Ahuja

International Forum on Adopting an ICT Perspective to Education and Learning

Day 2: Expanding Equitable Access using ICT

November 01, 2016

Assistive Technologies in School Education: Exemplar Inclusive Learning Material

Prof. Anupam Ahuja
ahujaa56@gmail.com
Head, Department of Education of Groups with Special Needs
NCERT, New Delhi
November 01, 2016




"All for the Children for All the Children"

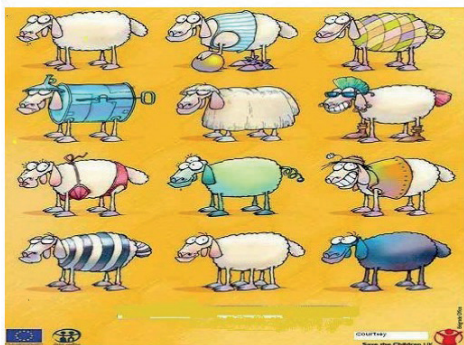
Common belief
ALL DIFFERENT
YET
ALL EQUAL

Inclusive education addresses the needs of each individual learner with special focus on those who are vulnerable to marginalization or exclusion



2

Do I really have the right to be different ?



EXCLUSION HAS OFTEN A SOCIAL, LINGUAL, FINANCIAL BASE...
ANY OTHER ?

3



Hearing something hundred times is
not better than seeing it once. . .



**All children Read One Book
Facilitates
True Inclusion**

Barkhaa: A Reading Series for 'All'



Contents



- Part I :** Orientation to Barkhaa (Original Reading Series)
- Part II :** A Story(Sample)
- Part III :** Developing (UDL based) Barkhaa Reading Series for All Children (Process)
- Part IV :** Print Version- The Reading Series with Additional Features
- Part V :** Digital Version-The Reading Series with Additional Features

6

Part I **Orientation to Barkhaa(original Reading Series)**

The Barkhaa Series



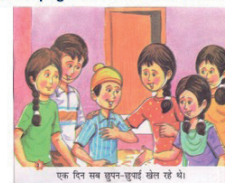
Barkhaa a 'Graded Reading Series'
developed by Department of Elementary Education(DEE), NCERT

Focus on **developing reading skills**
during early years enabling children of
classes I and II to:

- ❖ Develop reading skills
- ❖ Learn to read with meaning and for pleasure
- ❖ Re-read previously read books
- ❖ Understand several concepts from new perspectives



Each page has a visual and text



Barkha Series: Format



About the Stories of the Barkha Series

- ❖ Stories based on **children's contexts and everyday experiences.**
- ❖ Every theme has eight stories revolving around **events/problems**
- ❖ **Illustrations** on every page- to give flight to children's imagination.
- ❖ Sentences are based on **spoken language**
- ❖ **Characters** are of intended readers' age

Variation in levels:

- Sentences and illustrations
- Number and complexity of sub-plots
- Syntax

Levels are color coded

Level 1

- One sentence with an illustration on every page
- Repetition in the syntax- helps children recognize words

Level 2

- Two sentences with an illustration on every page
- Increased repetition in the syntax

Level 3

- Three sentences on each page
- Two to three smaller events or sub-plots

Level 4

- Four sentences on every page
- Two to three plots
- Repetition in the plots but very little in the syntax

Part II

A Story



Let us put on our thinking caps!

- ❖ How can we promote reading with meaning and pleasure among all children(including Ameena, Neha, Mohan, Saumya and Ra and many others) in inclusive settings?
- ❖ Can we provide one book for all to read?
- ❖ Can we use ICT to cater to the diverse/unique reading needs of all children?

The reality is:

- Children with disabilities often shy away from independent reading.
- Respecting the reading choices all children is crucial but poses a challenge .

Part III

Developing(UDL based) Barkhaa Reading Series for All Children- Process

Barkhaa: A Reading Series for 'All'

A series of workshops and consultations with a multidisciplinary team of experts and practitioners at the national level.

This led us to the following conclusions

- All children in the classroom ought to have the opportunity to use the **same book**.
- Transaction of syllabus **only** through prescribed textbooks leads to disenchantment which often inhibits reading for pleasure.
- Therefore there is a need to **go beyond textbooks and highlight the significance of supplementary reading**.
- The use of one book for **all builds a sense of confidence and camaraderie** among peers, leading to inclusive societies.
- This can be achieved through the use of assistive technologies and incorporating principles of Universal Design for Learning (UDL) in the books.

16

Adapting the Barkhaa Series

Rationale (why the adaptations?)

- To provide supplementary reading material for early graders in inclusive classrooms according to Universal Design for Learning (UDL) principles.
- Respecting diverse reading ways and choices
- Provide all young readers' including CWSN, access to Barkhaa as a reading material
- To give multi-sensory experiences to the readers (Tactile, audio and video)

First time NCERT has ventured into the area of adapting reading material for early graders according to UDL principles.

17

Adapted Barkhaa - A Reading Series for 'All'

Unique Features

- Accessible and customised reading material **addressing unique learning needs** for all young readers including CWSN
- All 40 Booklets are adapted both in **PRINT and DIGITAL VERSION** according to UDL while retaining the essence of the original Barkhaa series
- Digital version has been released by the Hon'ble State Minister of MHRD on the 56th Foundation Day of NCERT (1st September, 2016).

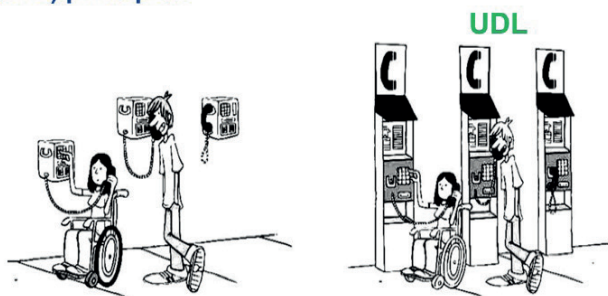


**All children
read 'one
book'- true
inclusion**

18

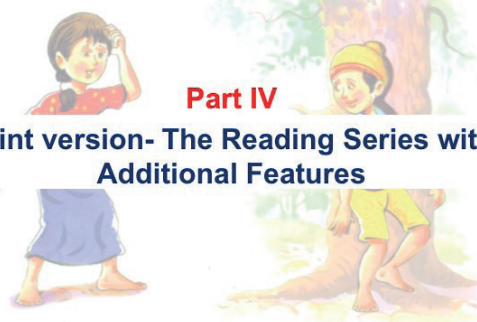
UNIQUE INITIATIVE

Preparing reading material for early graders according to Universal Design for Learning (UDL) principles



Part IV

Print version- The Reading Series with Additional Features



20

PRINT VERSION

Barkhaa: A Reading Series for 'All'



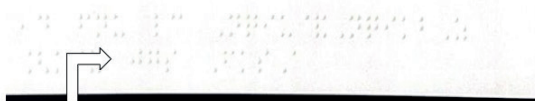
All children read 'one book'- true inclusion

Adapted Barkhaa Series – Key Features of Printed Version

Text in **print and Braille on same page**, thus accessible to all children and promoting collective reading



● एक दिन सब छुपन-छुपाई खेल रहे थे। ●



Poly Braille is used:

- Invisible
- Much longer shelf life than Conventional Braille
- Can be used on both sides of the paper
- Can be imposed on printed text making it accessible to all including the non sighted.

Contd...

22

Visuals made accessible in **tactile form** (embossing and computerised texturing), thus accessible to all children



Embossed Face outline

● जीत ने नाज़िया को चादर के पीछे छुँदा। ●

Contd...

23

Picture windows / flashcard for key words (in print and Braille) to reinforce words through real images



● बबली अलमारी के पीछे मिल गई। ●

Contd...

24

key visuals on each page in the book are made in **high resolution**, to focus on the important events of the story.



● उस दिन जीत की बारी थी। ●

Contd...

25

1. **Black border** on all four sides to bring focus to the illustration and text.
2. **Green dot and red dot** to indicate beginning and end of the sentences
3. **Arrows** that indicate next page



● एक दिन सब छुपन-छुपाई खेल रहे थे। ●

Contd...

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Adapted Barkhaa Series – Other Key Features of Printed Version



- To facilitate ease of use, the pages used are thicker and of higher quality. Appropriate thick sheets (220 GSM). It also accommodates Braille text on both sides.
- Page gradation to make it easy for all children to turn each page.
- Safe and durable binding using 'wiro', binding (use of staples can be dangerous for young children)
- Regular book binding will not allow the books to open flat for Braille reading.
- A Note for Teachers and Parents at the end of each story booklet in Hindi and English to facilitate reading. This note includes a story introduction to each story, to raise curiosity, clarify certain concepts and motivate children to read. Parents and teachers are expected to read this note aloud to the children.

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Part V

Digital Version-The Reading Series with Additional Features

Technology: An Equalizer



Technology – a great equalizer in an inclusive classroom with diverse learners.

"For people without disabilities, technology makes things easier. For people with disabilities, technology makes things possible" – IBM Training Manual, 1991

Assistive technologies can help in mastering effective reading strategies which enable children with varying needs to excel in the future.

Exemplar – Barkhaa: A Reading Series for 'All'

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Preview of the DIGITAL VERSION of Barkhaa: A Reading Series for 'All'

Adapted Barkhaa Series – Key Features of Digital Version



- Can be accessed on computers, laptops, mobile phones and tablets. To be available on NCERT website as part of e-pathshala
- All the features of the print version are retained in the digital version which is accompanied by a how to use section.
- Friendly packaging : 40 story book cover pages displayed in a **bookshelf**
- **'How to Use' page**
- The introduction of each story booklet is in **video and sign language** formats. Helps to arouse curiosity and make reading interesting



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Adapted Barkhaa Series – Key Features of Digital Version (Contd.)



- Content can be viewed in **3 different background colour combinations** for the child to view as per preference and need.
- **Flash cards** appear highlighting key words with a picture to reinforce words through real images.
- **Key visuals on each page made in high resolution.**
- **Note for Teachers and Parents** at the end of each booklet in Hindi and English to facilitate reading.



Link of the digital version on the NCERT website

<http://www.ncert.nic.in/departments/nie/degsn/NCERTBarkhaseries/Start.html>

32

Glimpses: Try out of the print version of the adapted Barkhaa: A Reading Series for 'All'



Try out of the printed booklet in [Maharani Gayatri Devi Girl's School, Jaipur, Rajasthan](#)



Try out of the printed booklet in Bloosoms School, [Bhubaneswar](#)

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Glimpses: Try out of the digital version of the adapted Barkhaa: A Reading Series for 'All'



Try out of the Digital booklet in Saksham, Delhi



Try out of the Digital booklet in Umang, Jaipur, Rajasthan

34

Reflect ...

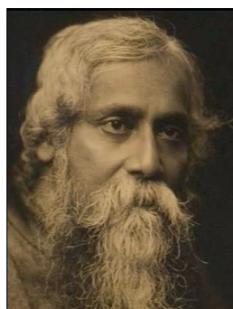


How do you plan to develop and use the print and digital versions of Barkhaa: A Reading Series for 'All' / or similar reading material in your context for all children your schools ?

NEXT STEP(in progress)

Handbook for promoting reading among all children is in progress....

35



"The problem is not how to wipe out the differences but how to unite with the differences intact."

- Rabindranath Tagore

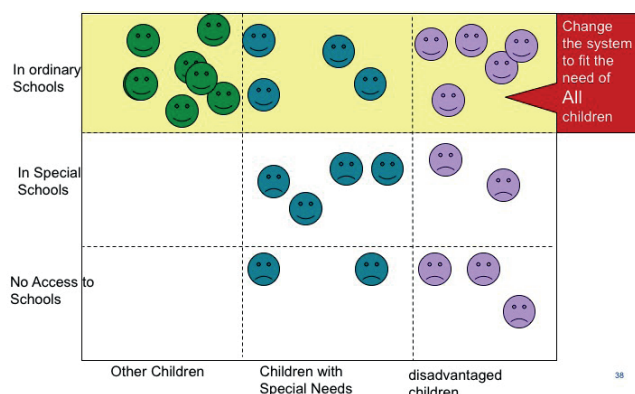
Inclusive education is a constant process...of system transformation and whole school improvement to ensure that Education for All really is for ALL!



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TOWARDS INCLUSION



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A Businessman and the Teachers



Mr. Ravi, an executive at **Mitha Mitha**, an ice cream company in India was representing a group of business people dedicated to improving public schools. He and his company had become famous in the middle 1980s when their ice cream was named as the **'Best Ice Cream in India'**.

Mr. Ravi told to an auditorium filled with teachers who have come to receive in-service training **'If I ran my business the way you people operate your schools, I wouldn't be in business very long!'** He was convinced of two things.

First schools needed to change; they were outdated and out of step with the needs of our emerging "knowledge society."

Second, teachers were a major part of the problem: they resisted change and **most importantly they needed to look to business.**

As a businessman, Mr. Ravi felt that he is the perfect man to orient the teachers on **how to produce quality with Zero defects and Continuous improvement!**

As he finished, a woman's hand shot up who had been waiting to speak up. Her name was Ms. Sneha and she was a high school English teacher.

She began quietly, "We are told, Sir, that you manage a company that makes good ice cream."

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A Businessman and the Teachers



Mr. Ravi smugly replied, "Best ice cream in India, Ma'am."

"How nice," she said. "Is it rich and smooth?"

"100 percent smooth, silky and rich," he crowed.

"high quality ingredients?" she inquired.

"Super-premium" he retorted.

"Mr. Ravi" she said, very pertinently "when sometimes you see inferior quality of Mitha Mitha being produced, what do you do?"

Mr. Ravi replied "I send them back."

"That's right!" Ms. Sneha said, "and we never send back our children. We love all our children."

We take them big, small, rich, poor, gifted, exceptional, abused, disabled, frightened, confident, homeless, rude, and "brilliant". We take them all! Every one!

And that, Mr. Ravi, is why it's not a business. It's school!"

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Journey towards 'Inclusion'



Poster from: IE making a difference; An international disability and development Consortium Seminar on IE; Agra India, EENET, SC


Thank You

Presentation of Day 2 (1st Nov, 16): By Prof. Uma Kanjilal



**SWAYAM
&
SWAYAM PRABHA
INITIATIVES OF MHRD**

Uma Kanjilal



1. **SWAYAM** (Study Webs of Active Learning for Young Aspiring Minds) - **India MOOCs**

2. **SWAYAM PRABHA** – **DTH Project for educational excellence**

Both Initiatives soft launched on August 15, 2016

In India where there is **shortage of qualified faculty** and **resource crunch** in setting up **physical infrastructure** to reach out the learners at mass scale, **MOOCs** seems to be a viable solution.

However, **instead of emulating** the western world we need to design a solution that suits best with the country's pressing need to **impart quality mass education**.

As one of the pillars of the **'Digital India'** Initiative of Government of India, **SWAYAM** seeks to **bridge the digital divide** for learners who have hitherto remained **untouched by the digital revolution** and have not been able to join the **mainstream of the knowledge economy**.

Massive Open Online Course (MOOC)

- **Massive** - potential of extremely large enrolments
- **Open** - both enrolment and resources point of view.
 - Courses are open to anyone without any restrictions or any prior learning requirements.
 - Open courses that are free for anyone interested in registering with open courseware that can be downloaded, saved, and reused.
- **Online** - content delivery mode.
- **Course** - how a course operates requiring enrolment, a definite timeline, instruction delivery and assessment.

Uma Kanjilal, IGNOU

Are MOOCs Really Open? MOOC or MOC?



Most MOOCs are open only in the sense of free enrollment

Components of a MOOC

- **Syllabus** - learning objectives, scope of the topics, readings, discussions, assignments, and quizzes or tests, weekly schedule.
- **Readings and video lectures**- archived material in xMOOC, and in a cMOOC, presentation by the facilitator each week or invite a guest lecture.
- **Learner Interaction**- centralized discussions forums in xMOOCs or distributed open spaces viz. blogs, wikis, Facebook pages, and Twitter in cMOOCs.
- **Assessment and Certification**- Quizzes, assignments, activities and projects for self-evaluation or with peer evaluation. In some cases it may lead to certification.

Uma Kanjilal, IGNOU

Growth of MOOCs

- 550+ universities. 4200+ courses. 35 million students.
- Ecosystem developed around MOOCs with hundreds of people employed full-time, thousands of people involved in the creation of MOOCs, many millions in funding, and, millions in revenue.
- The big three (Coursera, Udacity, edX) employ more than a hundred people each.
- universities are employing teams of video assistants, instructional designers, TA's, and other staff to support the more than 3,000 instructors that have created these courses.
- 22 of the top 25 US universities in US News World Report rankings are now offering courses online for free.

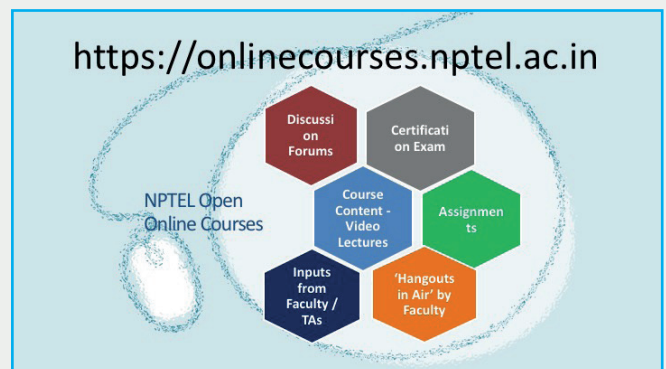
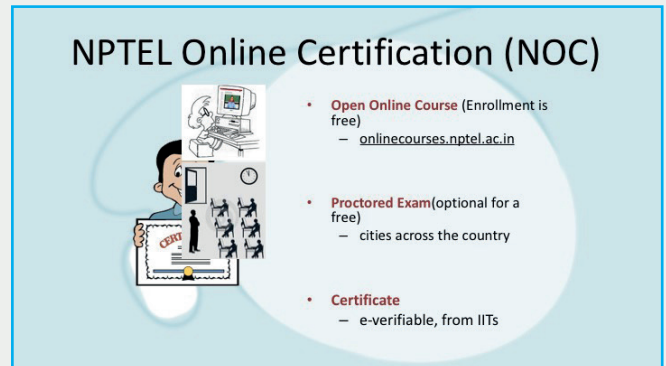
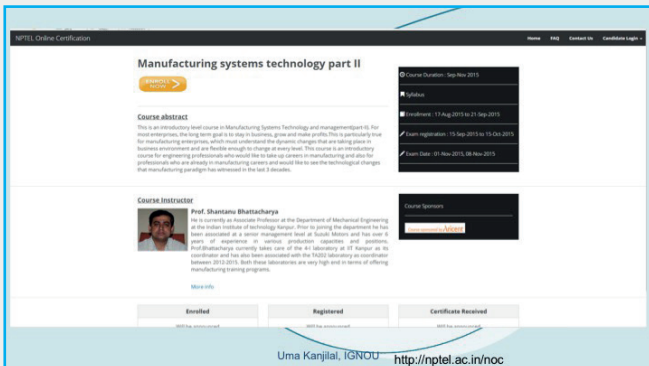
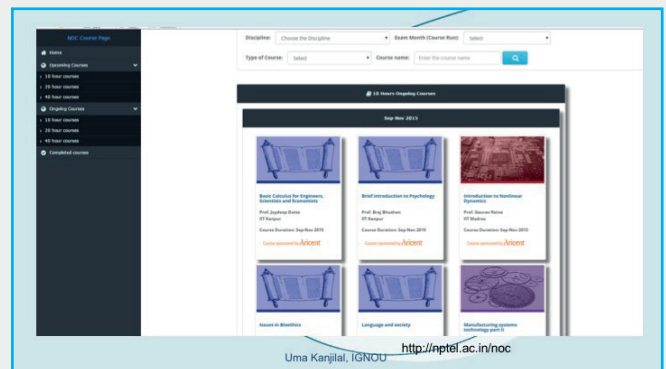
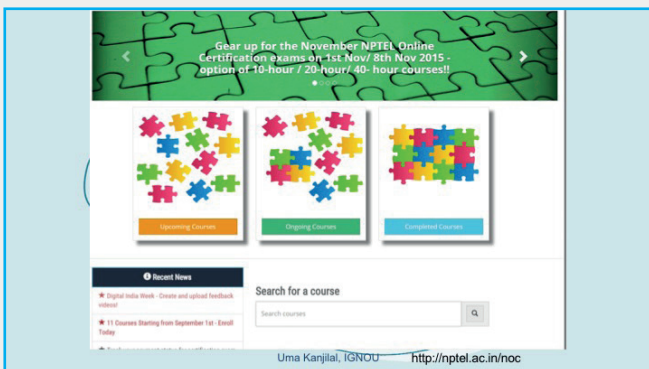
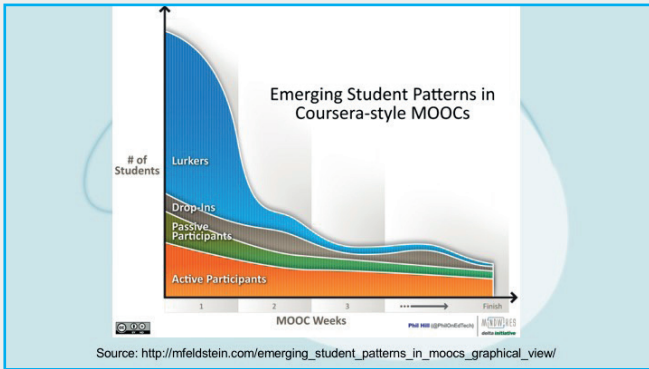
Source: <https://www.class-central.com/report/moocs-stats-and-trends-2015/>

Ten Most Popular Courses in 2015

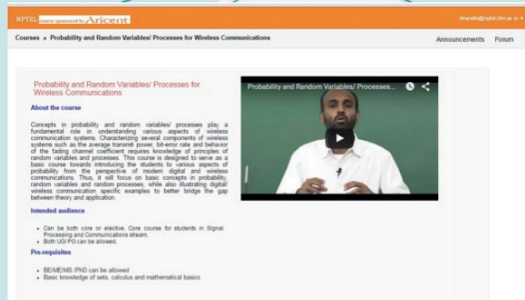
1. A Life of Happiness and Fulfilment (Indian School of Business & Coursera)
2. Introduction to Programming with MATLAB (Vanderbilt University & Coursera)
3. The Great Poems Series: Unbinding Prometheus (OpenLearning)
4. Marketing in a Digital World (UIUC & Coursera)
5. Fractals and Scaling (Santa Fe Institute & Complexity Explorer)
6. What is a Mind? (University of Cape Town & FutureLearn)
7. Algorithms for DNA Sequencing (Johns Hopkins University & Coursera)
8. Mindfulness for Wellbeing and Peak Performance (Monash University & FutureLearn)
9. Programming for Everybody: Getting Started with Python (University of Michigan & Coursera)
10. CS100.1x: Introduction to Big Data with Apache Spark (UC Berkeley & edX)

Source: <https://www.class-central.com/report/moocs-stats-and-trends-2015/>

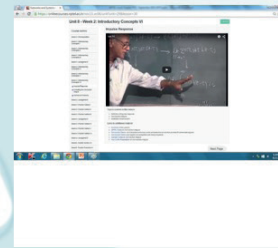
<https://www.class-central.com/mooc/2860/coursera-a-life-of-happiness-and-fulfilment>



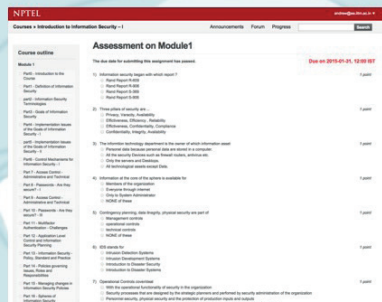
Course Introduction Page



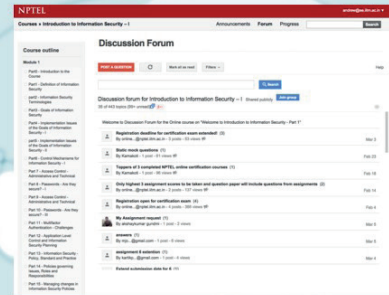
Course Lesson Page



Assessment Questions



Discussion Forum

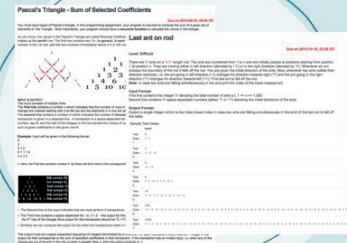


Features of Online Course Portal



- Usual features
 - Videos, Forum, Assignments
- Unique features
 - Hands-on programming
 - C, C++, Java, Verilog
 - Subjective assignments
 - grading by TAs possible
 - Mentors
 - monitor student grades

Sample Programming Assignments



Features of Certification Process



- Proctored exam
 - run by a partner
 - centers across the country
 - around Rs. 1000 per student
 - programming exam for programming courses
- Certificate
 - from IITs
 - e-verifiable through url
 - with NASSCOM, if fitting

Types of Courses

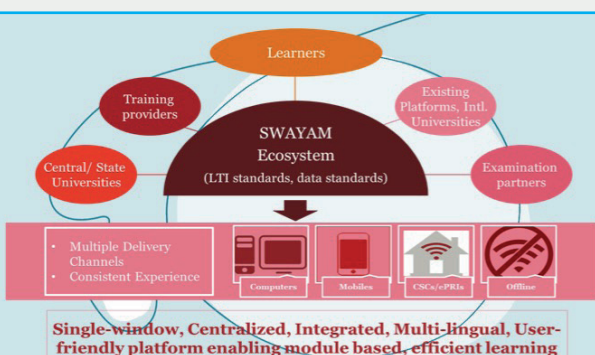
- Half-semester: 20 hours
 - 8 weeks, 2.5 hours of lecture per week
 - Weekly assignments
 - Run like a typical MOOC
- Full-semester: 40 hours
 - 12 weeks, 3-4 hours of lecture per week
 - Two quizzes or practice exams
 - Mostly use existing NPTEL course material for self-study
- 10 hr courses (1 credit equivalent)
 - 4-5 weeks, 2-2.5 hrs of lecture per week
- Disciplines
 - Engineering & Sciences
 - Humanities /Management

SWAYAM is a:

- One-stop **web and mobile based** interactive platform courses ranging from High School to University level.
- **High quality learning experience** using multimedia on anytime, anywhere basis.
- State of the art system that allows **easy access, monitoring and certification**.
- **Peer group interaction** and discussion forum to clarify doubts
- **Hybrid model of delivery** that adds to the quality of classroom teaching.

National Coordinators

Sl. No	National MOOCs Coordinator	Sectors
1.	University Grants Commission (UGC)	Non Technology Post Graduation Degree Programme
2.	NPTEL	Technical / Engineering UG & PG degree programme.
3.	Consortium for Educational Communication	Non Technology Under Graduation degree programme.
4.	IGNOU	Diploma and Certificates
5.	CBSE, NCERT & NIOS	Classes 9 th to 12 th
6.	IIM Bangalore	Management Courses
7.	NITTTR, Chennai	Teacher Training



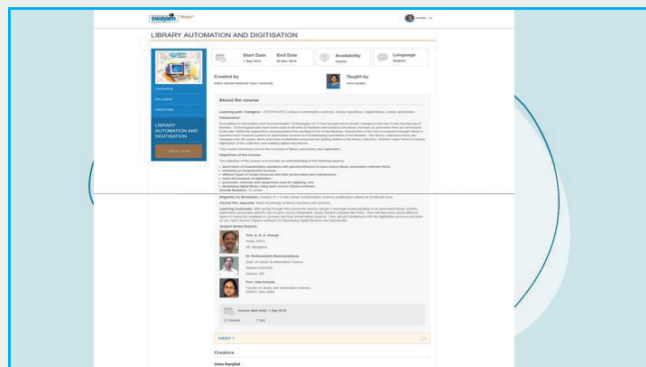
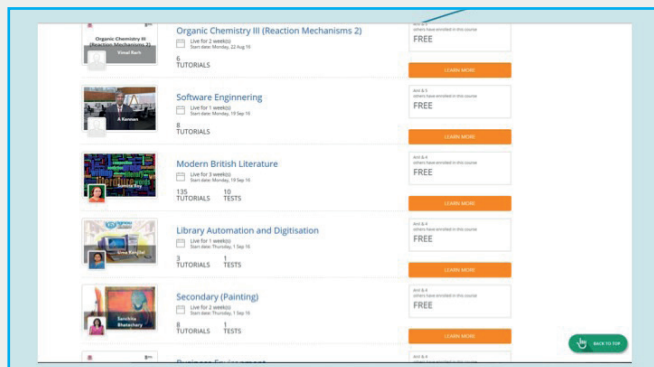
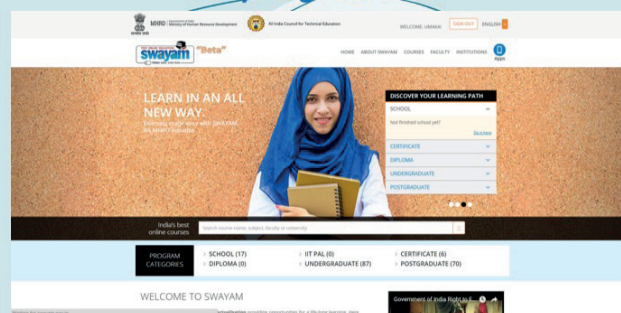
Four quadrant approach

- **Quadrant-I** is e-Tutorial: Video and Audio Content in an organised form, Animation, Simulations, video demonstrations, Virtual Labs, etc.
- **Quadrant-II** is e-Content: PDF, Text, e-Books, illustrations, video demonstrations, documents and Interactive simulations wherever required.
- **Quadrant-III** is Web Resources: Related Links, Wikipedia Development of Course, Open source Content on Internet, Case Studies, books including e-books, research papers & journals, Anecdotal information, Historical development of the subject, Articles, etc.
- **Quadrant-IV** is Self-Assessment: Problems and Solutions, which could be in the form of Multiple Choice Questions, Fill in the blanks, Matching Questions, Short Answer Questions, Long Answer Questions, Quizzes, Assignments and solutions, Discussion forum topics and setting up the FAQs, Clarifications on general misconceptions.

Elements for the overall SWAYAM courses

- **Syllabus Template** (including a course description with key learning outcomes, descriptions of faculty, a detailed course content outline, expectations for participation, certification, and faculty communication, netiquette guidelines, and academic integrity).
- **Pre- and post-course surveys**
- **Course overview** to orient on: What is the course about? What does the course include? What will I learn in the course? How do I use the course features?
- **Course timeline** for scheduling learning activities (week-wise detailed plans)
- **List of Announcements** to deliver reminders for due dates and course transitions.
- **Instructions on synchronous and asynchronous engagements** (prompts for students to post in the Discussion Forum, polling questions throughout the course, interaction with faculty/ TA (eTutor) as per instruction)

Swayam.gov.in



UNIVERSITY GRANTS COMMISSION
UGC (Credit Framework for Online Learning Courses through SWAYAM) Regulation, 2016.
New Delhi, the 19th July, 2016

No. F.1-100/2016(MOOCs/e-content) 1. Preamble.—

- 1.1 Whereas Education has to widen the access to higher education and bring down its cost by using technological advances,
- 1.2 Whereas Massive Open Online Courses (MOOCs) have emerged as a viable model for imparting education, involving conventional and online education,
- 1.3 Whereas the Indian version of online learning is being launched on an indigenous platform of learning, named as SWAYAM (Study Web of Active Learning by Young and Aspiring Minds),
- 1.4 Whereas there is a need to create synergies between the salient features of anytime-anywhere format of e-Learning and the traditional classroom-based chalk and talk method to develop a unique content delivery mechanism, which is responsive to learners' needs and ensures seamless transfer of knowledge across geographical boundaries,
- 1.5 Whereas there is a need to put in place a regulatory mechanism that would allow seamless connect between the online learning and the regular class room learning,
Now therefore;
University Grants Commission in exercise of the powers conferred by clause (f) and (g) of sub-section (1) of Section 26 of the UGC Act 1956 (No. 3 of 1956), makes the following Regulations, namely:

6. Credit Mobility of MOOCs

- 6.1. The parent Institution shall give the **credit mobility** to the courses earned through online learning courses through SWAYAM platform in the credit plan of the program.
- 6.2. **No university shall have any sanction for credit mobility** for the courses earned through MOOCs.

7. Amendment required in University Rules and Regulations for Seamless Integration of MOOCs

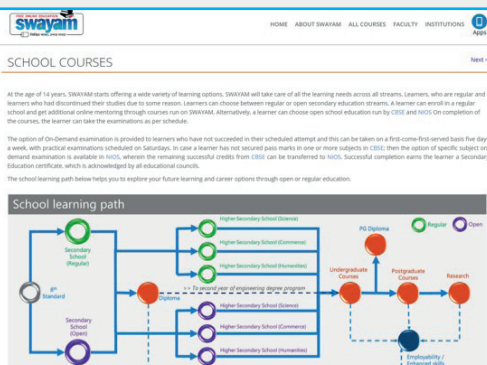
- 7.1 **Every Institution, shall within 4 weeks from the date of issue of these Regulations**, shall decide through their Competent Authority, the amendments required in their Ordinances, Rules, Regulations etc to incorporate provisions of these Regulation.

8. Transitory Measures

- 8.1 The UGC shall notify a Standing committee to resolve any issues that may arise in the implementation of these regulations during the transition period of three years.

Prof. JASPAL S. SANDHU, Secy, UGC

[ADVT.-III/4/Ext/182 (113)]



SWAYAM PRABHA – DTH Project for educational excellence

- MHRD project using **two GSAT-15 transponders** to run (32) DTH channels to telecast high quality educational programmes on 24x7 basis.
- Satellite up-linking station at the **Bhaskaracharya Space Application Centre of Gujarat (BISAG)**.
- The subscribers of **Free DTH service of Doordarshan** can view these Educational channels using the same Set Top Box and TV. No additional investment is required.
- video lessons of SWAYAM would be converted into appropriate format and transferred to BISAG for transmission on the DTH channels.
- Every day, there will be new content of at least 4 hours which would be repeated 6 times a day.
- Curriculum based course contents covering diverse disciplines.
- Channel partners – IITs, NPTEL, UGC, CEC, IGNOU, NCERT and NIOS

ORGANISATIONAL STRUCTURE & ROLES



Channels and their allocation

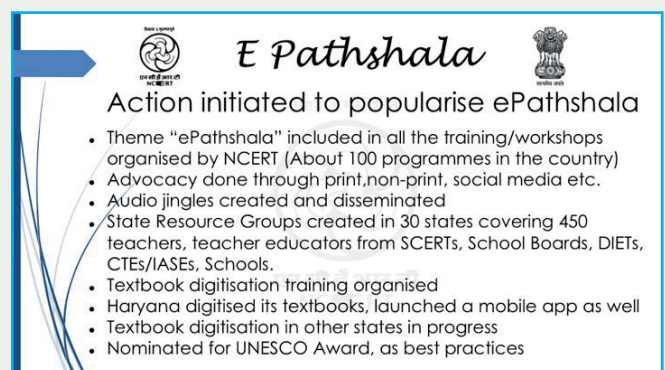
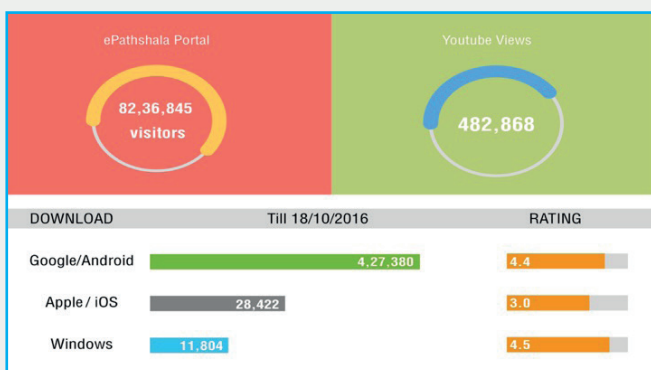
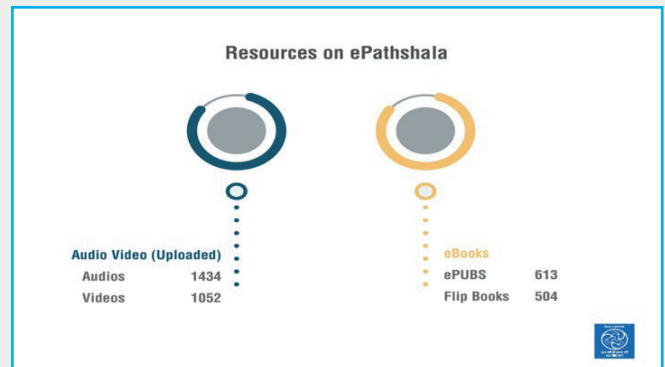
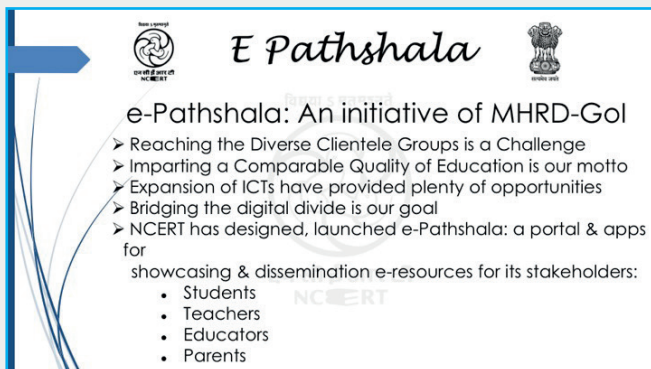
Channel number	Channel content	Coordinator
1.	Building sciences (Civil, engineering and allied)	NPTEL
2.	Computer science and engineering and computer	IIT Kgp
3.	Electrical sciences and engineering	IIT Bombay
4.	Electronics and communication engineering	NPTEL
5.	Mechanical sciences and engineering	NPTEL
6.	Physics, applied physics and engineering physics for	NPTEL
7.	Chemistry, metallurgy, chemical sciences and	NPTEL
8.	Mathematics and applied /engineering mathematics,	NPTEL
9.	Interdisciplinary areas (Bio-tech/nano-tech/sciences)	IIT Delhi
10.	QEEE for improving engineering standards	IIT J
11.	UGC 1: Languages	UGC
12.	UGC 2: Foreign languages	UPLU
13.	UGC 3: Arts & Humanities	UGC
14.	UGC 4: Sciences	UGC
15.	UGC 5: Management and Communication	Jamia
16.	UGC 6: Law and legal studies	UGC
17.	UGC 7: Philosophy/religious/social issues	UGC
18.	CEC 1: Vyas 1 (Non-engineering degree courses)	CEC
19.	CEC 2: Vyas 2 (Non-engineering degree courses)	CEC
20.	CEC 3: Vyas 3 (Non-engineering degree courses)	CEC
21.	School education for 9th and 10th standard	NCERT
22.	Physics for 11th and 12th standard (IIT-PAL)	CBSE
23.	Chemistry for 11th and 12th (IIT-PAL)	CBSE
24.	Mathematics for 11th and 12th (IIT-PAL)	CBSE
25.	Biology for 11th and 12th (IIT-PAL)	CBSE
26.	Open Univ: State Open Univs (out of college students)	IGNOU
27.	Open Univ: Agriculture (vocational) & allied sciences	IGNOU
28.	Open Univ: Liberal arts & Humanities	IGNOU
29.	Open Univ: Culture	IGNOU
30.	Open School: Secondary school syllabus	NIOS
31.	Open School: Senior Secondary syllabus	NIOS
32.	Open School: Teacher Education	NIOS

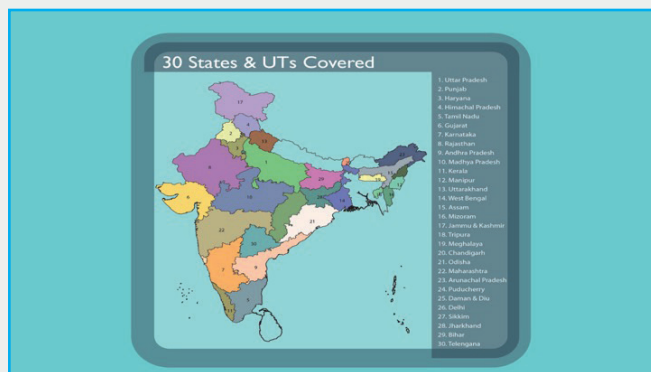
Major MOOCs Issues requiring attention

- MOOCs at present are **courses not curricula**. **Only 20%** at the moment acceptable for credit earning.
- Learning environment is not just content and self assessment. **How to mentor 30 million?**
- Large number of users are only **window shoppers**, this is bound to happen in SWAYAM as well.
- MOOCs do not provide the kind of **engagement to encourage learning**.
- Credit given by the institutions creating MOOCs. **Acceptance by other institutions is going to be a major issue**.
- How the **proctored exams** are to be conducted for **30 million learners** envisaged for SWAYAM in three years?

Thank You
ukanjilal@ignou.ac.in

Presentation of Day 2 (1st Nov, 16): By Prof. A.P. Behera





E Pathshala

Future Plans:

- Bringing all the 48 state boards/SCERTs etextbooks together
- e-Resources in other Indian languages
- Training resources and supplementary materials
- Digitise & disseminate all materials of vocational education
- Advocacy through multiple mode
- Continuous updating of the portal and apps (Android, iOS, Windows)
- Increase interactivity and make more user friendly

E-Pathshala

Thanks for your attention

For comments, suggestions, queries etc.
Contact /mail to the: jdciet.ncert@nic.in

epathshala@nic.in
epathshala@gov.in

Presentation of Day 2 (1st Nov, 16): By Prof. Lal Singh

Video Programmes

- Television is a visual medium.
- Many time pictures no need words.
- Television required visuals, visual ideas and visual illustrations.

Audio Programmes

- Words are required to be spoken and heard.
- The audio listener only hears and speaker.
- The audio writer writing for ear, speaking, simple language, short sentences to be understood correctly.

Format for audio & video programmes

- Story/ straight talk
- Interview
- Panel discussion
- Feature
- Magazine
- Drama
- Documentary
- Docudrama
- Quiz

Studio Production (Studio Side)

- Presenter(s)/ performer(s)
- Camera and Camerapersons
- Floor manager and Floor staff
- Subject Expert/ Content Expert

Studio Production (Control Side/ Production panel)

- Producer and their Assistant.
- Vision Mixer Engineer.
- Character Generator operator.
- Video Recording person.
- Audio Engineer.
- Lighting Person.
- Camera Control Unit
- External links: stock shots (still or video or both), graphics etc.

Editing/ Post Production Work

- Final Cut Pro (FCP).
- Aesthetically, sequentially and presentable form.
- Mixing of sounds, arrangements of shots, graphics, texts etc.

Commitment about production

- A dedicated team.
- Time bound activity
- A well coordinated work.
- An integrated system.

Basic plan for studio production

- Well planned script
- Average length
- Comprises the set and lighting
- Camera rehearsals
- Actual recording operation

Utilization and Evaluation

- A well design sub system of evaluation and obtaining feedback on programme strength and faults to assess the efficacy and value of programme which need constant revision for improvement.

THANKS

Presentation of Day 3 (2nd Nov, 16): By Dr. Indu Kumar

Digital Story telling

Dr. Indu Kumar,
Associate Professor
Department of ICT and Training
CIET, NCERT

The Challenges we face



- 28 States
07 UTs
- 1.49 million schools
- 8.5 million teachers
- 48 School Boards
- 24,85,68,702 children in school
- 96,007 Secondary Schools under ICT@Schools Scheme

What is digital story?

- Digital story is e text, video, audio/voice narration, music, sound effects, images and graphics; singly or in combination to create a fictional or non fictional media or multimedia narration.

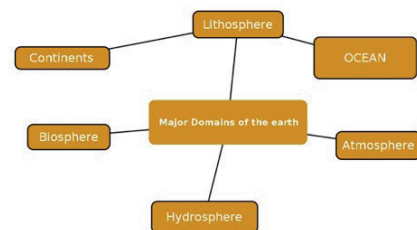
Different Forms of Digital Stories

- Mind Maps
- Simulation
- Audio
- Video
- Advertisement
- Interactive media
- Info graphics
- Photographs
- Animation
- Cartoons as a digital Story
- Slide shows,
- Diagrams,
- Charts,
- Graphs,
- Flow diagrams,

Role of digital stories in effective communication



Digital stories :Example



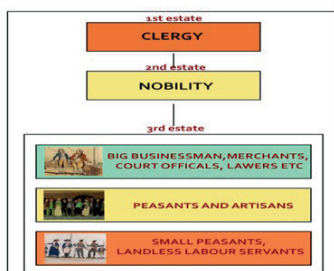
Digital stories :Example



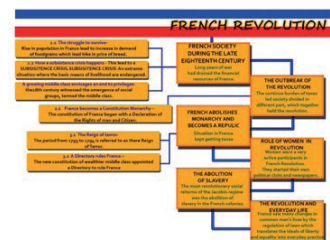
Digital stories :Example



Digital stories :Example



Digital stories :Example



Digital stories :Example



Digital stories :Example



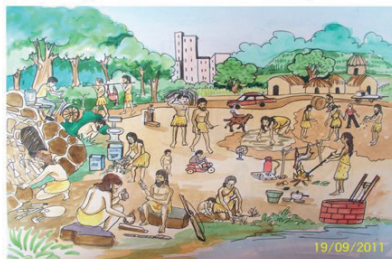
Digital stories :Example



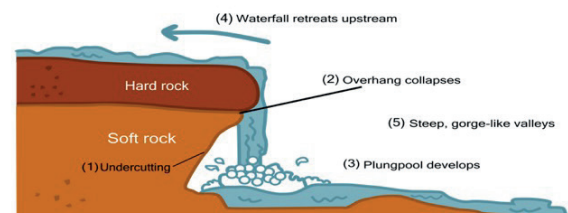
Digital stories :Example



Digital stories :Example



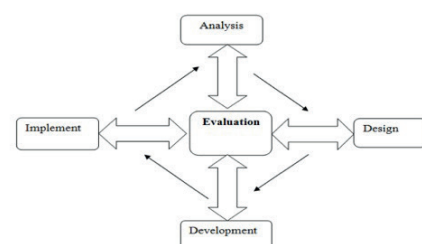
Digital stories :Example



Criteria For Media Selection and Integration

- Availability
- Accessibility
- Reliability and Validity
- Economy/Costing

ADDIE Model




Thank You

induk.babra@gmail.com

Presentation of Day 3(2nd Nov, 16):


Prepared by Dr. Svetlana Knyazeva

Presented by Dr. Margarita Tereseviciene



OER and MOOCs: Survey in 20 Non-English-Speaking Countries

Svetlana KNYAZEVA
UNESCO Institute for Information Technologies in Education



OER definition

OER refers to any educational resources (including curriculum maps, course materials, textbooks, streaming videos, multimedia applications, podcasts, and any other materials that have been designed for use in teaching and learning) that are openly available for use by educators and students, without an accompanying need to pay royalties or license fees (Butcher, 2011).

OER can exist as smaller, stand-alone resources (reusable learning objects), that can be mixed and combined to form larger pieces of content or as larger course modules or full courses.


OER can also include simulations, labs, collections, journals, and tools. These materials are considered open if they are released under an open license such as a Creative Commons license.













UNESCO IITE project "OER in non-English-speaking countries"




Armenia	Latvia
Azerbaijan	Lithuania
Belarus	Moldova
Brazil	Mongolia
China	Poland
France	Russia
Japan	Turkey
Kazakhstan	Ukraine
Kenya	Uzbekistan
Kyrgyz Republic	Vietnam



UNESCO IITE project "OER in non-English-speaking countries"



UNESCO IITE project "OER in non-English-speaking countries"



Findings of UNESCO IITE project "OER in non-English-speaking countries"

Internal motivations of producers and users of OER

- An interest in innovative teaching methods and resources
- A willingness to expand the access of students and colleagues to their materials
- A desire to enhance the visibility of the university
- An opportunity to gain additional recognition and scores during appraisal

Benefits

1. Potential financial saving due to eliminating the duplication of efforts in the development of teaching materials
2. The use of OER can have a positive impact on the quality of the education being offered.

Barriers to the development and use of OER

- National/institutional strategies for the ICT use in education are mainly oriented towards infrastructure and seldom encourage the development of educational content
- Educators often lack awareness about the availability of OER and the opportunities they provide
- Most people are not familiar with intellectual property rights; national IPR regulations are often incompatible with open licenses
- Emerging pedagogical approaches suggesting the use OER are yet to be adopted by educators and HEIs
- Quality assessment and assurance provisions for ensuring OER to be academically and/or pedagogically sound do not exist
- The reward/encouragement system for introducing OER into educational practice is non-existent and the provision of OER is not considered during performance evaluation

Barriers to the development and use of OER

Language barrier

Technological Barriers

- The ICT infrastructure has developed unevenly within the surveyed countries, and is often insufficient to support the widespread development and sharing of OER. Despite considerable progress in recent years, access to and use of ICT is often low.
- Although in recent years much effort and money have been invested in computer literacy training for teachers, their skills in some countries are insufficient to use open source software and OER in their professional activities on an everyday basis. In many of the surveyed countries, the development and adaption of OER is inevitably restricted by the shortage of faculty having the necessary orientation, motivation, knowledge and skills.

Barriers to the development and use of OER

Economic Issues

Most of the surveyed countries belong to the categories of developing or transition economies, thus national governments have to take sensitive decisions on prioritising certain items in their budget expenditures. For most of them, education is a priority, but currently there is an excessive skew towards infrastructure.

Legal Barriers

Electronically concluded contracts and licenses are not valid in some countries, waiving some of the rights granted by existing copyright law is perceived as legally impossible. In many cases, the resistance to adopting open licenses was not always related to the fact that national IPR legislation contradicted the terms of CC licenses. Most, if not all, current legal problems with CC licensing can be overcome through the changes to the relevant laws in the short to medium term.

Barriers to the development and use of OER

Lack of knowledge-sharing culture, particularly around sharing and reusing learning materials

The biggest barrier for teachers is a cultural one around teaching practices and overcoming academic practices surrounding using, reusing or remixing other people's material for fear of infringing copyright or being accused of committing plagiarism; or of believing that it is inappropriate for local needs or poor quality. (Andy Lane, 2010)

In many institutions research or producing your own content is valued higher than using other people's content.

Teachers (in primary and secondary education) may be more interested in pre-developed educational resources that directly help them in their teaching than in adapting resources themselves.

OER development is still rooted in the "publish for use as is" mode, where the sharing is one-way rather than reciprocal.

Barriers to the development and use of OER

Regulatory Barriers and Pedagogy

- Formal primary, secondary and tertiary education is heavily governed by national policies and laws. Institutions and teachers are cautious about changing their policies and practices, including sharing educational resources and adopting and adapting resources from outside.
- There is a tension between the academic values of sharing knowledge and the "commercial" values of selling educational content/services and/or competing for fee-paying students both nationally and internationally.
- Pedagogy still favours face-to-face presentation by a lecturer rather than flexible, resource-based, student-oriented learning.
- A lack of support staff to help teachers adopt new practices is also a serious problem in promoting OER.

Recommendations for the main action lines and measures to be taken

- Awareness raising and promotion of OER and open licenses
- Education strategy with adequate provisions for open education practices
- Allocation of public funding for ICT infrastructure and production of educational content, maintenance of OER repositories, and acquisition of adequate ICT skills appropriate to producing and sharing OER
- Revising pedagogical approaches, curriculum and quality standards
- Assessment and credentialing
- Fostering the concept of "openness" — the philosophy of sharing, reusing, adapting, readapting, translating and localising educational resources — amongst educators, learners and the general population by governments and institutions alike

Recommendations for the main action lines and measures to be taken

- Government strategy and government-supported initiatives are needed. Governments should encourage publicly funded HEIs to collaborate in sharing their educational resources and to provide the necessary infrastructure and support.
- Governments need to take immediate steps to align national copyright and IPR legislation and regulations with open licenses.
- In line with the Organisation for Economic Co-operation and Development recommendations formulated in Giving Knowledge for Free (OECD & CERF, 2007), it is important to **ensure comprehension, at all levels, that academic and research output, as well as the national cultural heritage, made available in digital format with the use of public funds should also be available for education, at no cost.**

Main action lines and measures to be taken by governments

Governments are encouraged to:

- support virtual infrastructure and national DL systems
- promote national OER initiatives (Netherlands Wikiwijs or the UKOER programme)
- establish national consortia (e.g., the Chinese Excellence Courses, Japan and Turkey OCV Consortia) or encourage institutions to join the global Open Education Consortium
- support Digital/Open Universities
- support national OER portals/repositories
- promote national open textbook initiatives
- encourage establishing national Creative Commons affiliates
- revise policies and standards regulating higher education,
- provide financial mechanisms for the production and use of OER
- invest in capacity-building and awareness-raising on OER issues
- recommend wider use of open licensing and open format standards
- rethink curriculum design
- take measures aimed at ensuring the adoption of new pedagogical approaches

Recommendations for the main action lines and measures to be taken

- Institutions and teachers need to promote and support learner-centered pedagogical approaches that rely on educational resources as much as direct teacher instruction.
- Institutions need to provide training and development for their teaching staff, and both recognize and reward teachers who develop and publish good OER.
- Teachers need to adopt new teaching practices that encourage learner-centered pedagogical approaches which use new technologies and require greater co-operation.
- To ensure that the open educational content meets the quality standards required by the institutional users, without the quality control process restricting the spirit of creativity, alternative evaluation practices could be put in place alongside the existing practices that encourage a participatory culture of open peer review.
- OER should be developed in national languages (including minority) other than English.

Foresight project "Access, Equity and Quality: Envisioning the Future of Higher Education in a Digital Age"

Online survey: 147 respondents from 54 countries: Europe (39%), Asia and the Pacific (19%), Africa (11%), North America (7%) and Latin America (5%)

Distribution of respondents across continents

Continent	Percentage
Europe	39%
Asia and the Pacific	19%
Africa	11%
North America	7%
Latin America	5%

Foresight project "Access, Equity and Quality: Envisioning the Future of Higher Education in a Digital Age"

Findings

- The need for curriculum reform is due to such changes as the availability and development of OER
- Varying readiness to acceptance, use and recognition of learning outcomes for OER and MOOCs
- The impact of these developments on the change of the roles of teachers and institutions and the urgent need to (re)train teachers
- The consequences of these developments for the way in which informal/formal learning results are translated into credits and can be transferred and used
- Price and quality expectations vary for the production of resources and delivery of education services, including those for people with disabilities

New Forms of Content Presentation and Credentialing

Unbundling of content

In 2003, the iTunes Store unbundled the CD. For the first time, consumers could purchase the songs they wanted rather than the bundle designated by the artist and label. Sales of digital singles soared but overall revenue fell 50 percent in a decade. Prior to this transformation, the business model for the music industry relied on bundling the music that consumers wanted (singles) with the music that they didn't want (the rest of the album). That meant the music industry made money it wouldn't have made without the bundle.

"Unbundling" content is the future of education: Anant Agarwal, CEO, edX

Bundling has been central to the higher education business model for centuries. Colleges and universities combine content and a wide range of products and services into a single package, for which they charge "tuition and fees."

New Forms of Content Presentation and Credentialing

Digital badges and micro-credentials

The latest trend in higher education is micro-credentialing, the non-traditional education path where students gain skill sets in a specific area and receive a credential. This trend is very promising for life-long learning.

Micro-credentials (nanodegrees) take the form of a digital certificate, which may be a document or image file, or other official evidence that you've completed the necessary work. The organization that grants the micro-credential decides what they will provide, so be sure to check it's what you need before you begin.

In 2015, Udacity announced a new nanodegree (nanodegrees are 'curriculums designed to help you become job-ready') — the Android nanodegree in partnership with Google.

Penn State's College of Business launched an online bootcamp course, 'Supply Chain Leadership Academy', to educate "supply chain leaders of tomorrow in leadership and best practices in holistic supply chain management".

THANK YOU!

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Presentation of Day 3 (2nd Nov, 16): By Dr. Airina Volungeviciene


ICT tools for OER, Unesco ICT Forum, India, 2016

OER adaptation, development and use


as integrated within curriculum

Dr. Airina Volungeviciene
 Prof. Habil. Dr. Margarita Tereseviciene,
 Vytautas Magnus University, Lithuania


Vytautas Magnus University
<http://vdu.lt>


<http://www.vdu.lt>


Media




Dan Moore about successful career




Liberal Arts in Neoliberal Times



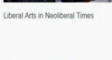
Special Video: VMU in the Rhythm of 25 Hours




A. E. McGrath: Science and Religion. The Big Questions.




Solidi – 1 programme, 3 universities




Assoc. Prof. J. D. Minger on the Liberal Arts



VMU Graduates Discussed Intellectual and Freedom



Lecture by the UN Secretary General Ban Ki-moon

 **YENI KÜLTÜR**

EUROPEAN DISTANCE LEARNING WEEK

2014 Spring 28

Following the successful cooperation between EDEN and USDLA, this year EDEN organizes the first Distance Learning Week (DLW) in Europe.

The week has been announced at EDEN website, both at the [home page](#), as well as under [Virtual events summary](#), where all detailed program of the week is available.


EDEN EDLW events will take place each day - on November 7-11, 2016 - the same hour - at 13:00 - 14:30 CET and in the same Adobe Connect room -

<https://eden-online.adobeconnect.com/EuropeanDLW>

5 online events have been scheduled to discuss:

1. European achievements and innovations - in the opening online panel debate - 13:00 - 14:30 CET, November 7, 2016
2. Quality in open, online and technology enhanced learning - 13:00 - 14:30 CET, November 8, 2016
3. Evolving Open Education: life beyond MOOCs - 13:00 - 14:30 CET, November 9, 2016
4. Validation and recognition of non-formal and open learning - 13:00 - 14:30 CET, November 10, 2016
5. Digital skills in teaching and learning - are we on the right track? - 13:00 - 14:30 CET, November 11, 2016

EDEN also contributes to IJC National DLW with additional events that can be also found at EDEN website.

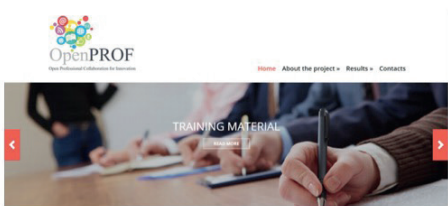


UNIVERSITY OF UTAH
UNIVERSITY OF UTAH

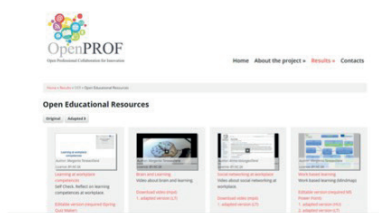
Back to Open Education

Open Educational Resources

<http://Openprof.eu>



<http://openprof.eu/oer>



Collaborative online document for hands – on activities

<https://goo.gl/KHtyvN>

The aim of the session

to experiment the training material enabling learners to develop the following competences:

1. to select the best ICT tools to adapt/ develop OERs for a learning activity
2. to design a learning activity integrating OERs

1) to select the best ICT tools to adapt/ develop OERs for a learning activity

- a) set the requirements for ICT tool for OER development/adaptation
- b) choose ICT tool for OER development/adaptation according the functionality
- c) develop/adapt OER using selected ICT tool
- d) choose the license and mark developed/adapted OER with CC license

2) to design a learning activity integrating OERs

- a) to identify the "place" of OERs in curriculum (learning activities)
- b) to contextualize OERs systematically with the learning curriculum (from the point of view of conscious curriculum designing and quality assurance)

Training material

The session will be organized in a step – by – step activities composed of presentation of the session moderators and hands – on practical learning using training material „ICT tools to develop and adapt OER“ developed during European Union Erasmus+ program Project „Open Professional Collaboration for Innovation“ (2014-1-LT01-KA202-000562)

1) to select the best ICT tools to adapt/ develop OERs for a learning activity

a) setting requirements for ICT tool for OER development/adaptation

Step 1. Think about the type of OER you are going to develop

- Will you develop:
 - A document?
 - A presentation?
 - A video/ audio file?
 - A collaborative artefact?

a) setting requirements for ICT tool for OER development/adaptation

Step 2. What functionality do you need from a chosen ICT tool?

- Will you need to upload the document online?
- Will you need to collaborate with other people?
- Will you need formatting (various text formats, colors, etc.)?
- Will you need to add pictures?
- What other functions of ICT tool do you need?

a) setting requirements for ICT tool for OER development/adaptation

Step 3. What requirements will you raise for the editability of OER?

- Download (possibility to download OER in editable version)
- Online (possibility to edit OER online)
- Limited access (possibility to edit OER for registered users)
- Unlimited access (possibility to edit OER without registration)
- Individual development (possibility to edit OER individually)
- Collaborative development (possibility to edit OER collaboratively)
- Other requirements??



a) setting requirements for ICT tool for OER development/adaptation

Step 4. What requirements will you raise for the usability and accessibility of an OER?

- does the tool allow the use free of charge?
- is it intuitive to use?
- how attractive it is?
- can you add Creative Commons license on you work?
- do you have further requirements for usability and accessibility that you have?



Assignment 1

Assignment 1. Setting the requirements for ICT tools for OER.

The aim of the assignment: having implemented this assignment, you will be able to decide on requirements for ICT tool for developing/adapting your OER. This will help to choose the ICT tool later.

Tasks:

1. select what will be the type of your OER (document, presentation, collaboration, video/ audio or other)
2. set the requirements for functionality of ICT tool and requirements for OER editability. You can use the templates below marking the requirement and writing your comments. If you are developing another type of OER, these templates could serve as an example for you. Using them you can develop your own template for setting the requirement for your OER.
3. specify the requirements for accessibility and usability of ICT tool. You can write your comments in the same table (last row of the table)

The result expected.

After you fill in the template provided below, this will be the guidelines for you in order to choose ICT tool for your OER development/ adaptation.



Requirements for functionality of ICT tool				
Requirements	Yes	Maybe	No	Comment
Formatting document (font, color, spacing, etc.)				
Uploading word document				
Collaboration with other people				
• in real time				
• view history; back to previous versions				
Downloading document (as Word, OpenOffice, etc. pdf, html)				
Specify other requirements:				
•				
•				
Requirements for editability of OER				
Requirements	Yes	Maybe	No	Comment
Downloadal (possibility to download OER in editable version)				
Online (possibility to edit OER online)				
Limited access (possibility to edit OER for registered users)				
Unlimited access (possibility to edit OER without registration)				
Individual development (possibility to edit OER individually)				
Collaborative development (possibility to edit OER collaboratively)				
Specify other requirements:				
•				
•				
Requirements for accessibility and usability of ICT tool				
Requirements	Yes	Maybe	No	Comment
Free of charge				
Intuitive to use				

Template available from training material



Template – for presentation format

Requirements for functionality of ICT tool				
Requirements	Yes	Maybe	No	Comment
Formatting document (font, color, spacing, etc.)				
Inserting images and videos				
Uploading pptx, ppt presentations				
Collaboration with other people				
• in real time				
• view history; back to previous versions				
Sharing with other people				
Downloading document (as .pdf, .ppt, .svg, .jpg, .txt)				
Publishing and embedding in a website				
Requirements for accessibility and usability of ICT tool				
Comments on requirements for accessibility and usability:				



Template for collaborative document format

Requirements for functionality of ICT tool				
Requirements	Yes	Maybe	No	Comment
Collaborative document creation				
Commenting on documents/photos				
Inviting people to collaborate on project/document/wiki				
Formatting document (font, color, spacing, etc.)				
Uploading documents (Word, PDF, from Google Drive, etc.)				
Exporting document (PDF, Word, to Google Drive, etc.)				
Publishing link to collaborative document				
Chat / messages to other people who is working on collaborative project				
Video conferencing option				
Requirements for accessibility and usability of ICT tool				
Comments on requirements for accessibility and usability:				



Template for video / audio format

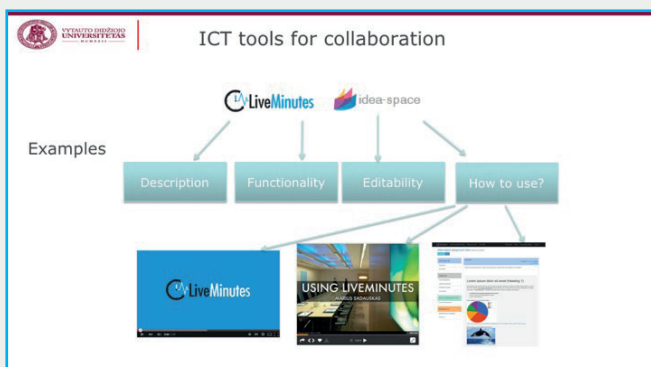
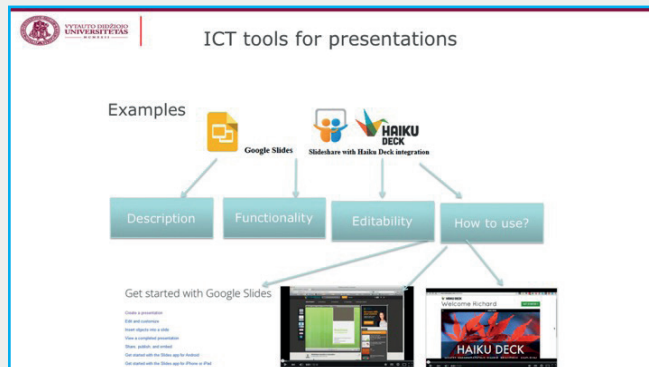
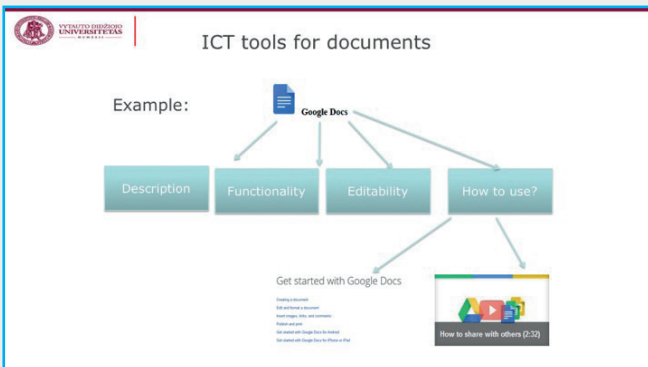
Requirements for functionality of ICT tool				
Requirements	Yes	Maybe	No	Comment
Hosting video/ audio				
Combining multiple videos, audio tracks and images				
Inserting special effects				
Trimming/lengthening/ cutting				
Adding subtitles (transcribe or translate)				
• Uploading subtitles from the file				
• Downloading subtitles, captions, or transcripts				
• Syncing to Youtube				
Sharing with other people				
Downloading video/ audio				
Publishing and embedding in a website				
Requirements for accessibility and usability of ICT tool				
Comments on requirements for accessibility and usability:				



1) to select the best ICT tools to adapt/ develop OERs for a learning activity

b) choosing ICT tools for OER development/adaptation according the functionality

Step 1. Examples of ICT tools for different OER types and formats



b) choosing ICT tools for OER development/adaptation according the functionality

Step 2. search and select ICT tools for OER adaptation or development

Online tools and applications

Assignment 2. Choosing ICT tool for OER development/adaptation

The aim of the assignment: having implemented this assignment, you will be able to choose ICT tool for development/adaptation your OER. Using this ICT tool you will have to develop/adapt your OER during the next Assignment 3.

Tasks:

- Find several ICT tools for selected type of OER.
- Evaluate their functionality and editability options (using the document that you filled in during Assignment 1).
- Choose ICT tool that most fits to your needs.
- Explore how to use the tool.
- Present the ICT tool to your peers.

The result expected.

ICT tool for OER development/adaptation is chosen according the functionality. Chosen ICT tool is presented to peers. Feedback from the audience is received.

c) develop/adapt OER using selected ICT tool

Assignment 3. Developing/adapting OER using ICT tool

The aim of the assignment: having implemented this assignment, you will be able to develop OER using chosen ICT tool.

Using the ICT tool that you have chosen during the Activity 2 develop/adapt your OER.

The result expected.

OER is developed/adapted using ICT tool.

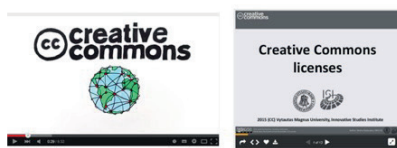
d) choose the license and mark developed/adapted OER with CC license

(this Unit is adaptation of "Marking your work with a CC license", "Publish" and "Best practices for attribution" all by Creative Commons, used under CC BY)

Step 1. Identify Creative Commons licensing types

Step 2. Select your OER CC license

Creative Commons



Assignment 4

Assignment 4 Choose the license for developed/adapted OER
Choose the license for your developed/adapted OER according to provided training material, video presentation and slideshow.
Remark: If your work is an adaptation of a work licensed under either **CC BY-SA** or **CC BY-NC-SA**, then your derivative work must be made available under the same license as per the ShareAlike condition.)
The result expected:
The specific CC license for developed/adapted OER is chosen.

Choose the licence

License Features
Your choices on this panel will update the other panels on the page.

Allow adaptations of your work to be made?

☒ Yes, as long as others share alike

Allow commercial uses of your work?

☒ Yes

Selected License
Attribution 4.0 International

This is a Free Culture License!

Help others attribute you!
This part is optional, but filling it out will add machine-readable metadata to the assigned HTML.

Title of work: ICT tools to develop and adapt

Attribute work to name: OpenProf

Source work URL: <http://openprof.net/>

More permissions URL:

Format of work: Other (Multiple formats)

License mark: HTML+PDF

Have a web page?

ICT tools to develop and adapt OER by OpenProf is licensed under a Creative Commons Attribution 4.0 International License.

Copy this code to the page where you want to use the license:

```
<img alt="Creative Commons Attribution 4.0 International License icon" data-bbox="325 395 345 415"/>
This work is licensed under a Creative Commons Attribution 4.0 International License. To view a copy of this license, visit http://creativecommons.org/licenses/by/4.0/.
```

☐ Normal text ☐ Compact box

Example

Example	Analysis
<p>ICT tools to develop and adapt OER by OpenProf is licensed under a Creative Commons Attribution 4.0 International License.</p>	<p>Author: clearly specifies that OpenProf is the party that should be credited</p> <p>License: clearly specifies the CC BY license with a link</p> <p>Machine readability: yes (copied and pasted code from the license chooser)</p>
Example	Analysis
<p>Under where otherwise noted, content on this site is licensed under a Creative Commons Attribution 4.0 International License.</p>	<p>Author: Since the license is for the CC website as a whole, which includes multiple authors, one attribution party is not specified. Instead, it is clarified in the Terms of Use (linked in the footer on the left) who owns what content.</p> <p>License: The specific CC license is noted (CC BY) and linked.</p> <p>Machine readability: yes (copied and pasted code from the license chooser)</p>

Example: document

Help others attribute you!
This part is optional, but filling it out will add machine-readable metadata to the assigned HTML.

Title of work:

Attribute work to name:

Source work URL:

More permissions URL:

Format of work: Text

License mark: Office

Non-digital works?

Downloadable license graphics

This work is licensed under the Creative Commons Attribution 4.0 International License. To view a copy of this license, visit <http://creativecommons.org/licenses/by/4.0/>.

Example	Analysis
<p>OpenProf, 2015</p> <p>"ICT tools to develop and adapt OER" is licensed under the Creative Commons Attribution 4.0 International License. To view a copy of this license, visit http://creativecommons.org/licenses/by/4.0/.</p>	<p>Author:</p> <p>License: The specific CC license is noted (CC BY) and linked.</p> <p>Machine-readability: no, it's offline</p>

Example: presentation

<p>by Creative Commons</p>	<p>Author: "by Creative Commons"</p> <p>License: The specific CC license is noted (CC BY) with a link provided.</p> <p>Machine-readability: yes, because it was uploaded to SlideShare, a slide-sharing platform that supports CC licensing.</p>
<p>Except where otherwise noted, this presentation by Creative Commons is licensed under a Creative Commons Attribution 4.0 License.</p>	<p>Author: "Except where otherwise noted, this presentation by Creative Commons"</p> <p>License: The specific CC license is noted (CC BY) with a link provided.</p> <p>Machine-readability: yes, because it was uploaded to SlideShare, a slide-sharing platform that supports CC licensing.</p>

Example: video

Example: Video
At the end of your video you can add a CC video bumper for a 3-5 second copyright frame:



Publishing OER at CC-enabled content sharing platforms

Media type	Content sharing platform	Description and publishing instructions
Document		Scribd is a community for uploading and sharing documents that has enabled CC licensing. How to publish on Scribd
Presentation		SlideShare is a community for sharing presentations, documents, and PDFs under CC licenses. Various professionals are linked through with commoners via LinkedIn, Facebook, and Twitter. How to publish on SlideShare
Video		Vimeo is a high-quality video-sharing website that has enabled CC licensing. How to publish on Vimeo
		YouTube is a popular video-sharing platform that has enabled the Creative Commons Attribution (CC BY) license as well as open the Creative Commons license that allows others to reuse your content. YouTube has created a tutorial on how to mark your video as CC BY when uploading videos to a platform at http://creativecommons.org/creativecommons .
Audio		SoundCloud is a music and audio sharing community that allows artists to upload their works under the full range of CC licenses. In use of each upload you can select the license you want to use. SoundCloud has created a tutorial on how to mark your audio as CC BY when uploading audio to a platform at http://creativecommons.org/creativecommons .
		Jamendo is a music platform offering artists the ability to promote, publish, and be paid for their music made available for download under Creative Commons and the Free Art license. How to publish on Jamendo

Assignment 5.

Assignment 5 Marking developed/adapted OER with CC licence
 The aim of the assignment: having implemented this assignment, you will be able to mark developed/adapted OER with CC licence.
 You can use [license chooser tool](#) to get suggested text and/or html code. Marking your OER, please, take into account:

- Author
- Specific CC licence with link to it
- Machine readability (if applicable)

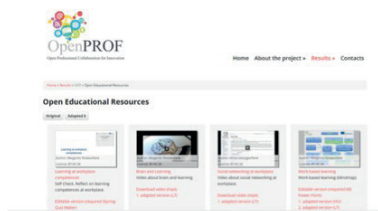
The result expected.
 Developed/adapted OER is marked with CC licence. Author of OER and specific CC licence with link to the description is provided.

Contribution

Training material on "ICT tools to develop and adapt OERs" was developed in the framework of Erasmus+ program project OpenPROF – Open Professional Collaboration for Innovation

TM is available at
http://openprof.eu/training-material/Training_material_on_ICT_tools

<http://openprof.eu/oer>



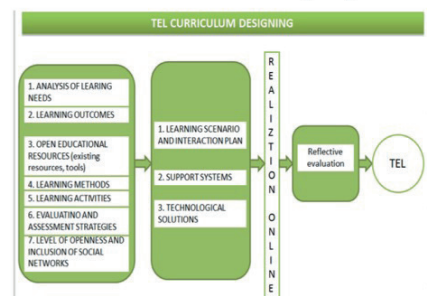
Discussion:

how was your process of developing/ adapting OERs?

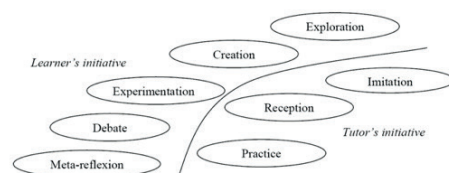
2) to design a learning activity integrating OERs

- to identify the "place" of OERs in curriculum (learning activities)
- to contextualize OERs systematically with the learning curriculum (from the point of view of conscious curriculum designing and quality assurance)

TEL Curriculum designing



Re-thinking the types of learning/ teaching methods



D.Leclercq, M.Poumay, University of Liege, Belgium

Developing learning activities

Specific objective(s)	To be able to: • Select... • Describe... • Draw...	
Steps to achieve specific objectives	1) Go and find... 2) Open... and write about... 3) Use... and present... 4) ...	OER
Expected output/ indicators	A blog entry ... A drawing... A math task solved...	
Evaluation criteria	
Evaluation tools	Test/ assignment	OER

Resources: The [JISC Open Educational Resources InfoKit quality considerations](#).

- Can the content be described as follows?
 - Relevant, accurate, appropriate level of detail, objective, current and jargon-free
 - Of good provenance (consider the reputation of the author/institution), with a list of references if appropriate
 - Free of advertising
- Does it fit my chosen pedagogy?
 - Learning outcomes are stated and match with learner's needs
 - Engaging and interactive
 - Set at the appropriate level, with any prerequisite skills/understandings state
 - The time required to study is stated and equates to the importance of the learning outcomes achieved

<https://oerjyph.pbworks.com/w/page/51320241/EvaluationTools>

Discussion

What role do you see for OERs in curriculum designing?

Thank you for your participation.

Dr. Airina Volungevičienė
Prof. Habil. Dr. Margarita Teresevičienė,
Vytautas Magnus University, Lithuania

Airina.volungeviciene,
margarita.tereseviciene
[at]vdu.lt

Presentation of Day 3 (2nd Nov, 16): By Dr. M'hammed Abdous

*Technology is not an
afterthought:*

TPACK as a Framework for
ICT Integration into Teacher
Professional Development

Dr. M'hammed Abdous
Old Dominion University, Norfolk, Virginia

Outline

- Technology **Then** and **Now**
- The Technological **Divide**: Haves and Have-Nots
- Technology Integration **Models**: SAMR & LOTI
- What is **TPACK**?
- TPACK **Cards Game**
- What Does ALL This **MEAN** to **YOU**?

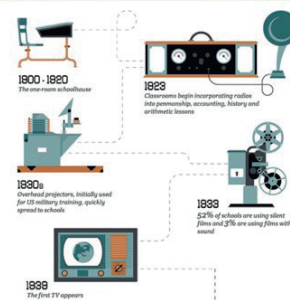
Goals

1. Discuss the concept of **technology integration**
2. Gain **familiarity** and **experience** with the TPACK framework
3. Discuss the **TPACK** framework **opportunities** and **constraints**
4. Identify potential **challenges** associated with TPACK implementation and brainstorm possible **solutions** for these challenges

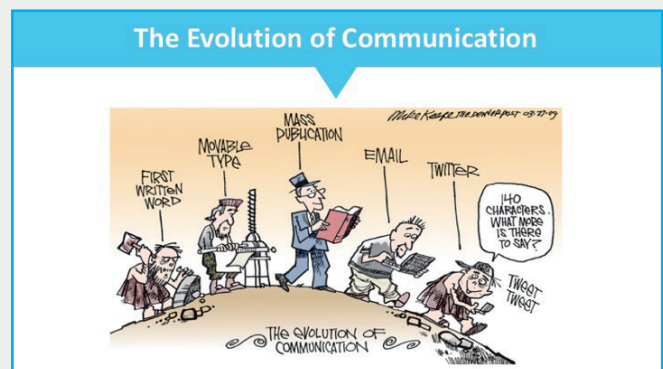
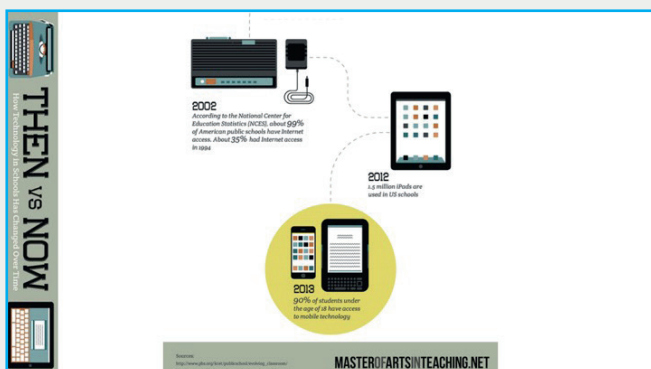
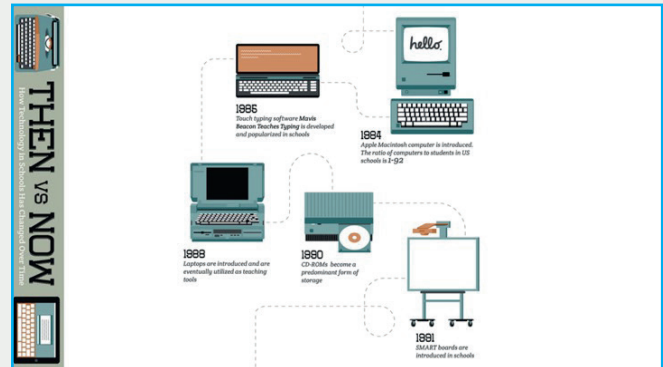
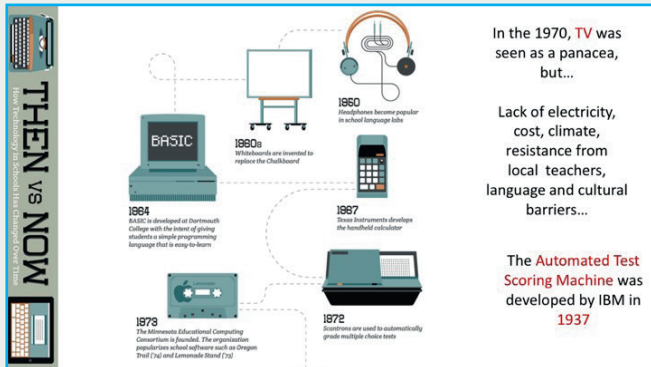
THEN vs NOW

How Technology in Schools Has Changed Over Time

It took **500 years** to
distribute arithmetic
textbooks in schools

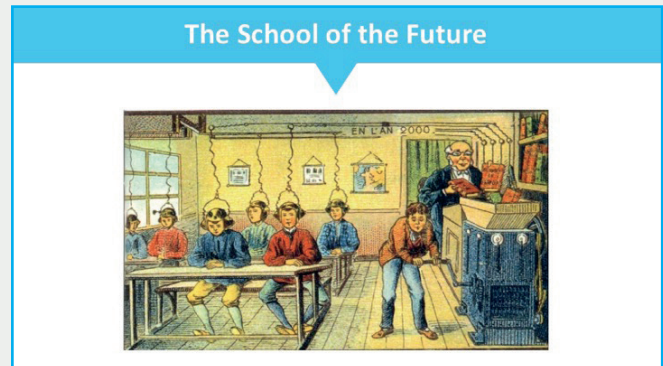


In 1924 the BBC
broadcasted the first
adult education radio
talk on *Insects in
Relation to Man*



Some the Unfulfilled Promises of Technology

- Is technology mechanizing the industrial model of schooling: large number of factory workers?
- Where's the individualized learning experience?
- Can you offer a personalized learning path for children at scale?



Out-Of-School Children

263 million children and youth out of school globally

61M Primary school age (5-14)
60M Lower secondary school age (15-17)
142M Upper secondary school age (18-24)

Main Barriers to Education

- school distance
- rural location
- urban slums
- school violence
- refugee status
- WASH
- malnutrition
- natural disasters
- gender discrimination
- early marriage
- conflict
- dropout
- late entry
- poverty
- social norms
- displacement
- child labour
- disability
- repetition
- high fees
- being a minority
- language challenge
- early pregnancy
- no teachers
- learning quality
- poor infrastructure
- poor governance
- employment
- unemployment

The Technological Divide: Haves and Have-Nots

Digital Divide

74 students
47 girls
27 boys

Madame Judith uses her meager salary to buy food, clothing and sandals for the children whose parents cannot afford them.

School fees in the public schools are around three dollars per year.

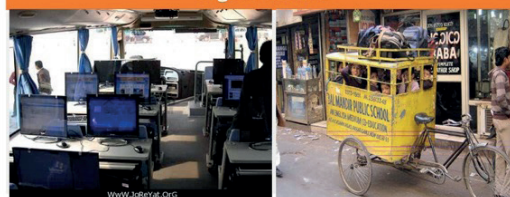
The Technological Divide: Haves and Have-Nots

Digital Divide



The Technological Divide: Haves and Have-Nots

Digital Divide



21 Century Skills

Information Literacy	A set of abilities requiring individuals to "recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information."
ICT Literacy	the ability to "use digital technology, communications tools, and/or networks to access, manage, integrate, evaluate, and create information in order to function in a knowledge society."

Technology Infusion or Integration?

- **Introducing** a new element into an existing process
Word Processing for Writing, Editing and Revising

- **Intermixing** items that were initially separated
Creating a multimedia presentation with text, audio, photos, and video

- **What is effective technology integration?**

What is technology integration?

- Effective technology integration is attained when
 - Technology use is **routine** and **transparent**, **accessible** and **readily available**
 - Supporting **curricular goals**
 - **Helping students learn**



Technology Integration Models

- SAMR
- LOTI
- TPACK

SAMR Model

Class Task	Substitution	Augmentation	Modification	Redefinition
Note taking	Notes taken using iOS Notes	Students choose their own notes app	All students use Notability for all notes	Teachers have access to all students' notes
Research	Using Safari to copy and paste information	Bookmark and share notes using the share button	Download and annotate with Notability	Collaborative Mindmaps
Presentation	Make a keynote presentation on the iPad	Demonstrate understanding with Explain Everything	Combine audio, video and text in Movie Presentation	Nearpod Presentation
File sharing	Sent by email every lesson	Shared Dropbox folder	Showbie	iTunes U
Reading	Open PDF from email	Use dictionary & search document	Annotating documents in Notability & iBooks	Interactive iBook
Assessment	Google Form tests	Google form tests with automatic marking script	Creative projects with Strip Designer ShowMe & iMovie	Creative Assignments with audio feedback in Showbie

LOTI: Levels Of Technology Integration

- A conceptual framework to measure levels of technology implementation
 - Level 0 – Non-use
 - Level 1 – Awareness
 - Level 2 – Exploration
 - Level 3 – Infusion
 - Level 4 – Integration (a: mechanical, b: routine)
 - Level 5 – Expansion
 - Level 6 – Refinement
- **Self-assessment** tool for technology integration, but
- **Unclear knowledge domains** associated with each level

TPACK

- What is the **TPACK**?
- What are the underlining ideas of the **TPACK**?

What is TPACK?

- Shulman's construct of pedagogical content knowledge (PCK)



Transcend the Techno-centric Approach

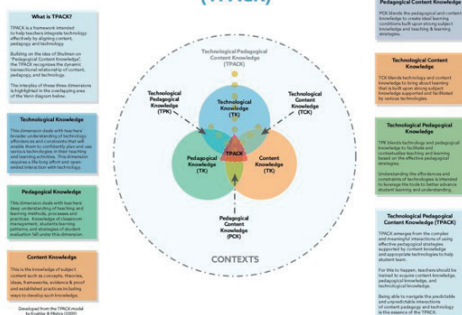
- Emphasis on technology in **isolation**
- Computer labs, not integrated in the **curriculum**
- New technologies are unstable, evolving and opaque, **protean**
- Social and contextual **contexts**: lack of **support**, lack of **preparedness**, lack of **training** (one size fits all approach)



Unbundling the seven dimensions of the TPACK

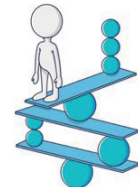
- **Step 1:** Examine each dimension individually
 - Dimension 1: Content knowledge (CK)
 - Dimension 2: Pedagogical knowledge (PC)
 - Dimension 3: Technology knowledge (TK)
- **Step 2:** Examine the interplay of the three dimensions
 - Dimension 4: Pedagogical content knowledge (PCK)
 - Dimension 5: Technological content knowledge (TCK)
 - Dimension 6: Technological pedagogical knowledge (TPK)
- **Step 3:** Putting it all together
 - Dimension 7: TPACK

Technological Pedagogical Content Knowledge (TPACK)



Equilibrium

- Teaching successfully with technology requires continually creating, maintaining, and re-establishing a **dynamic equilibrium** among all components: **content, pedagogy, technology, and teaching/learning contexts**



Critics of The TPACK

- Where are the **students** in this framework?
- Do we teach **content** or do we teach **students**?
- What about the **intrapersonal dimension**: epistemological and pedagogical beliefs that teachers hold?
- What about the **cultural/institutional factors**:
 - Physical/technological infrastructure, Support
- Where are the **students' perceptions** about learning?

TPACK Cards Game



TPACK Cards Game

1. Choose a **content** card
2. Draft a question that you might cover in class
3. Pick a **pedagogy** card
4. Pick a **technology** card
<http://fcit.usf.edu/matrix/digitaltools.php>

TPACK Cards Game

5. Work with your group at your table
Justify your choice of pedagogy and technology:
How does the technology **support your content**?
How does the pedagogy **support your content/pedagogy**?
6. Is there another combination that **fits better** your content?
Which one? Why and How?

Final Thoughts

Dimension	Interrogations
Vision	What is your institutional vision for the role/place of ICT in your curriculum?
Competences	What competencies/standards are you targeting? And how do you ensure that your teachers are trained?
Infrastructure	What kind of infrastructure do you currently have in place? Will it scale and support your future ICT integration plans?
Software/hardware	Which software/hardware are you currently using in your pre-service teacher training?
Support	What kind of support do you have in place: technological, pedagogical?
Leadership	What kind of leadership support do you have for ICT integration?
Barriers and opportunities	What kind of opportunities and barriers faced by your teachers?

What did you learn?

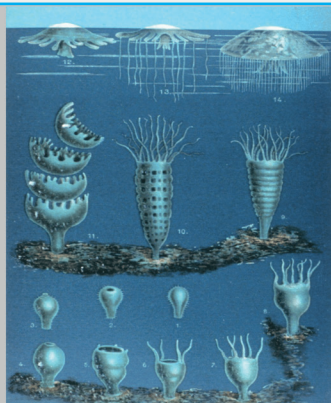
- Ideas gained from today's sessions
- Potential application for you work and your organization

Thank you for your attention

Dr. M'hammed Abdous
Old Dominion University
mabdous@odu.edu



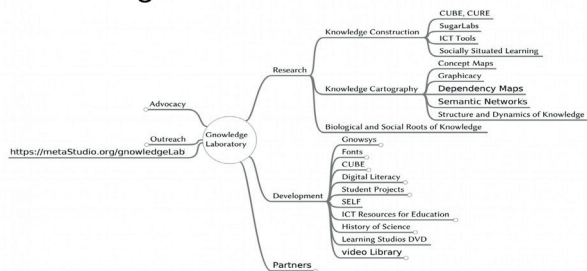
Presentation of Day 3 (2nd Nov, 16): By Dr.Nagarjuna G.



NROER Online and Offline

Nagarjuna G (knowledge lab)
And
CIET team (NCERT)

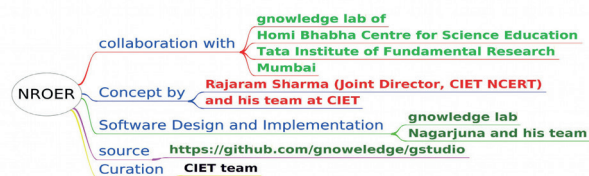
Knowledge Lab



NROER

National Repository of Open Educational Resources

Started with a MOOC on OER



OOOOER

Collaborative
Open
Online
Offline
Ongoing

Our lab is called COOOOL

Principles

- To use Free and Open Source Software stack
- To produce Free and Open Source Software
- Open standards
- Interoperable and standards compliant protocols
- Creative Commons License (OER Complaint)

Three stages of the project



- Medusa (off line)
- Polyp to Medusa
- Planula to Polyp (when connected to backbone)

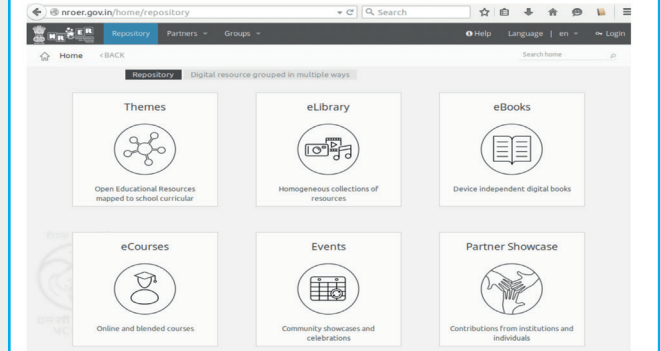
Landing Page



A project supported by Govt of India



Resource Groups



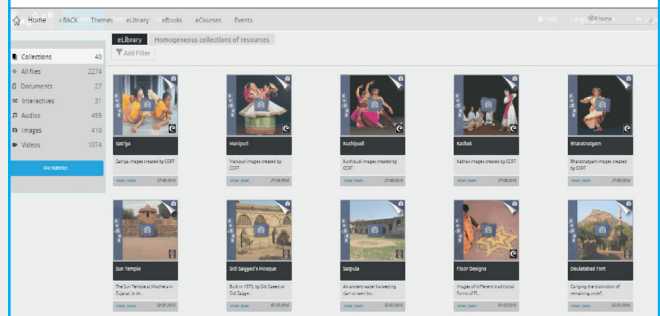
Main Components



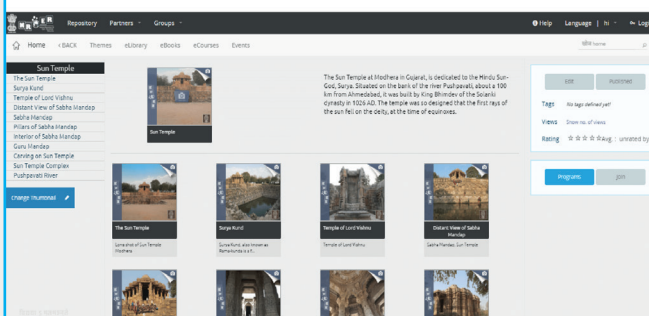
Elibrary contains Assets

- Web Pages
- Wiki Pages
- Files
 - Video
 - Images
 - Audio
 - Presentations
 - Interactives
 - PDF files
 - Word Processing files etc.
- Programs
- Courses
- Collections

Collections in the Elibrary



List of Items in a Collection



An Item in a Collection



Stats	
Home	Home
Collections	85
All files	5003
Documents	27
Interactives	63
Audios	1223
Images	978
Videos	2326
File Statistics	

Curation: Metadata Form

Editing File: Law of Demand

Please add or edit Metadata

Time Required:

Interactivity Type:

Reading Level:

Curricular:

Educational Subject:

Educational Alignment:

Based on LMS:

Source:

License:

App Range:

Educational Level:

Language:

Educational Use:

Text Complexity:

Target Audience:

Partners

Repository Partners Groups

Home < BACK

Partners

State Partners

Curators of resources in State languages

Institutional Partners

Curators of resources in State languages

Individual Partners

Curators of resources in State languages

Special Interest Groups

Interest Groups

Groups sharing common interests and goals

- Join an already existing group and participate in its activities.
- To start a group on a new theme, send a request to the Editor at triser.desk@knowledge.org

Teacher Education Resources

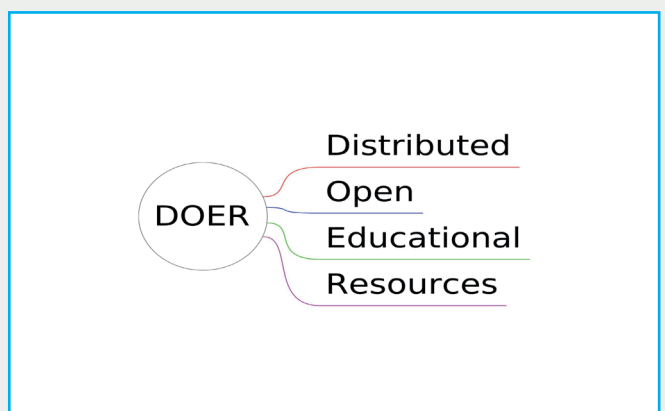
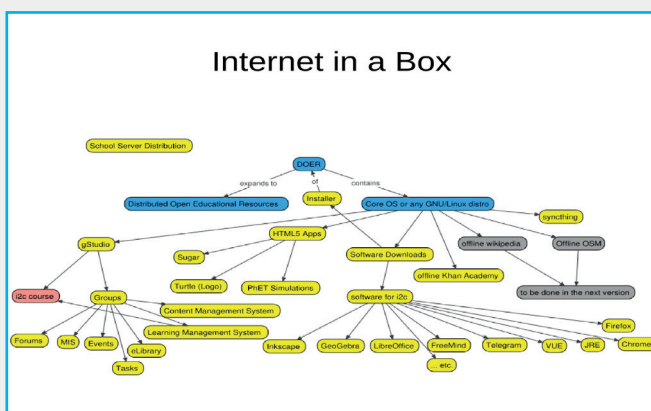
Learning Sequences SIG

Refactor

18-01-2018

18-01-2018

18-01-2018



Clix.tiss.edu

i2c-clix.tiss.edu

Connected Learning Initiative working in 4 states in India

1000 schools

resources produced in this program are OERs

Activity based Course Player

Digital Literacy

Overview Course Content Raw Material Notebook Gallery

ABOUT Digital Literacy - English & Hindi Version

5 Modules

56 weeks

110 students enrolled

NOTIFICATIONS

GROUP ANALYTICS

orange-carbon-sp5 has modified black car.gif

blue-sodium-sp5 has modified Dew Race.png

blue-chlorine-sp5 has modified thought

blue-chlorine-sp5 has modified new

Analytics

ABOUT Digital Literacy - English & Hindi Version 5 Modules 56 weeks 110 students enrolled

NOTIFICATIONS GROUP ANALYTICS

Points table for students

Click on the student's name to view detailed analytics.

Name	Total Points	Files	Notes	Quiz	Interactions
administrator	8215	8050	150	NA	15
brown-rabbit-sp1	850	775	210	NA	365
brown-sheep-sp1	705	800	60	NA	195
red-copper-sp1	705	800	120	10	225
blue-iron-sp1	665	800	150	NA	165
brown-python-sp1	540	800	80	NA	150

Digital Literacy

Overview Course Content Raw Material Notebook Gallery

Let us learn together

Let us Begin!

About the Course

Module 1: Introduction and Indic Typing

Activity 1.1:

Activity 1.2:

Activity 1.3:

Activity 1.4:

Module 2: Analysing with Spreadsheets

Module 3: Drawing with Inkscape

Module 4: Fun with GeoGebra

Get Started

Digital Literacy

Overview Course Content Raw Material Notebook Gallery

Resources for Making and Remixing

Upload file

story1.png

story2.png

story3.png

120-Final-Data-sheet.xls

dot-drawing-template.pdf

1016051185_7d651ef171

4993730652_5e7f9386a6

13136160244_856c8f7969

16523246545_1461276d0e

13960590264_c9646d8f05

Collaborative Story creation

Notes

All Notes (238) My Notes (5)

Life gives one chance

No tags defined yet!

Feedback administrator • 10 Jun 2016 04:46 PM

Life gives one chance administrator • 09 Jun 2016 11:08 AM

Dreams unlimited administrator • 09 Jun 2016 11:07 AM

how much land does a person need? administrator • 09 Jun 2016 11:05 AM

story of a girl administrator • 08 Jun 2016 09:40 AM

Once upon a time there was a boy.

Comment (36)

yellow-hellium-sp1 June 9, 2016, 11:31 a.m.
एक बार एक जहाज का 1 बंदूक हथियार था वह अपने जीवन की बीमारी के बारे में बहुत अच्छी तरह जानता था 1 जीवन में मोक्ष का सपना भी देखता है।

green-nitrogen-sp1 June 9, 2016, 11:28 a.m.
Everyone use to explain him not to do so, but he does not listen anyone.

red-iron-sp1 June 9, 2016, 11:23 a.m.
एक फूटल खेलने का हीन था

In Hindi

Notes

All Notes (238) My Notes (5)

thought bluech... • 01 Sep 2016 04:08 PM

new bluech... • 01 Sep 2016 04:07 PM

learning bluech... • 01 Sep 2016 04:06 PM

learning is life bluech... • 01 Sep 2016 03:50 PM

GEO GEBRA bluech... • 01 Sep 2016 03:46 PM

pola bluech... • 01 Sep 2016 03:14 PM

Today's experience bluech... • 01 Sep 2016 12:23 PM

picture story01 bluech... • 01 Sep 2016 10:58 AM

blue heaven bluech... • 31 Aug 2016 04:01 PM

ICT USAGE bluech... • 31 Aug 2016 02:34 PM

कहानी - १

No tags defined yet!

A story: brown-rabbit-sp1 • 10 Jun 2016 03:21 PM • ★★★★★ Not rated yet! • Show no. of views

अच्छी बात है अक्सर खिलने की खुशी के बच्चे कुछ नए हाकाने के भी कुछ पढ़ते

Comment (21)

green-nitrogen-sp1 June 16, 2016, 4:20 p.m.
शिव मैं सुनार सुनार सुनार पारा

brown-rabbit-sp1 June 16, 2016, 4:09 p.m.
कहिए के सुनारे मोराम में सिंघिम कुंरी का बरामा, वो किकली का चक्कना और काली की पञ्चदश, एक लला है जैसे

brown-python-sp1 June 16, 2016, 4:01 p.m.
काली बरामा के काल लगी ने सनार काले का निरख बिया

brown-rose-sp1 June 16, 2016, 3:55 p.m.

Gallery of Student's work

Overview Course Content Raw Material Notebook Gallery

Filter

User: blue-chlorine-sp5 User: blue-copper-sp5 User: blue-hellium-sp5 User: blue-iron-sp5 User: blue-sodium-sp5

Upload file

Draw Race.png

di.pdf

diad.pdf

GRAPH0.png

di.pdf

GRAPH1.png

draw-diad.png

draw-diad.png

draw-diad.png

draw-diad.png

draw-diad.png

diad.png

diad.png

diad.png

diad.png

diad.png

Road Map

- Continued development of OER in a Box
- Activities for Teachers for Continued Professional Development
- Support for DLKit (InterOperability Standard developed by MIT based on OSID)
- Migration to Graph Database Neo4j
- Online Analytics on Resources, Activities and Participants Interactions
- Delivery of Online Courses
- Collaboratively develop various curricular resources including textbooks, programs, courses, etc.
- School management (MIS)
- Syncing between servers

Goal to reach!



- Medusa (off line)
- Polyp to Medusa
- Planula to Polyp (when connected to backbone)

- <http://nroer.gov.in>

Email

- nroer.ciet@gmail.com

- jdciет@gmail.com

- nagarjun@gnowledge.org

- Presentation released under CC By SA 4.0 unported


Presentation of Day 4 (3rd Nov, 16):
By Mr. Jack Fermon & Mrs. Karen Walstra

The diagram is divided into two main sections by a vertical line. The left section is titled "Google for Education offering" and features a large icon of a laptop with the Chrome logo on its screen, labeled "Chromebooks". The right section features a large icon of a green gear with a white document inside, labeled "Google Admin". Below these two sections is a horizontal bar containing icons for various Google services: Classroom, Gmail, Drive, Calendar, Vault, Docs, Sheets, Slides, Sites, and Hangouts. At the bottom of the diagram, the text "G Suite for Education" is centered.

What is a Chromebook?

Designed for learning,
made for the classroom

- Lightweight, durable laptops designed for students
- Boot up in less than 6 seconds and battery lasts the whole day
- Automatic updates




Google for Education


2

Key differentiators


Simple




Affordable



Secure




Shareable




Google for Education

3


Google Admin




Create users and groups




Enforce policies




Configure device settings at scale




Lock / disable devices



Install apps remotely



Kiosk mode for assessments



Manage hardware

Google for Education

4

Links:

<https://goo.gl/CY47mG>

Presentation of Day 4 (3rd Nov, 16): By Mr.Ricaud Gervais Danyel Auckbur

Mauritius : A small island experience on ICT and STEM Education

Ricaud AUCKBUR
Ministry of Education
Mauritius

Thursday 3 Nov 2016

International Forum on Adopting an ICT Perspective
to Education and Learning
NCERT, New Delhi, India

*This is science, and it started my
journey in technology in Education
back in 1983*



*No ICT in schools back in 1983, but triggered the
concept that technology can assist learning
through slide film projectors and telescopes*



Presentation Plan

- Part 1 :** Setting the scene - Mauritius context of ICT in Education
- Part 2 :** ICT and STEM Education
- Part 3 :** Hands on practice of ICT and STEM tools used in Mauritius
- Part 4 :** Discussions

Part 1 : Setting the scene - Context of ICT in Education in Mauritius

Mauritius at a glance

- **Independence from UK : 1968**
- **Region :** Africa
- **Sub Region :** Small Island State, in Mascarene Indian Ocean
- **Country Size :** 60km x 40 km
- **Population :** 1.3M, multi-ethnic, multilingual in French, English, Bhojपुरi, Mandarin
- **Diversified Economy :** Tourism, Services sector, Sugar, Textile ,ICT services, Ocean industries (port, fishing, bunkering)
- **Narrow natural resource base**
- **GDP per capita :** US\$ 9200
- **Mo Ibrahim country Governance Index :** 1st in Africa
- **Education System :** Local curricula for Primary schools (270 schools), UK O & A Levels for Secondary (150 schools)
- **Gender parity in Education** (in fact girls do better than boys in Mauritius ...)



ICT in overcoming isolation of Small Island Developing States (SIDS)

"SIDS can envisage rapid technological innovation, especially in ICTs, that will help to:

- (i) overcome island isolation*
- (ii) create new ways of maintaining social and cultural ties across the island diaspora; and*
- (iii) help evolve new economic activities."*

UNEP 2014 – Global Environment Outlook for Small Island Developing States .

ICT in Education : the Mauritian context

Bridging digital divide in an increasingly globally connected environment

Limited local capacity for digital resource development

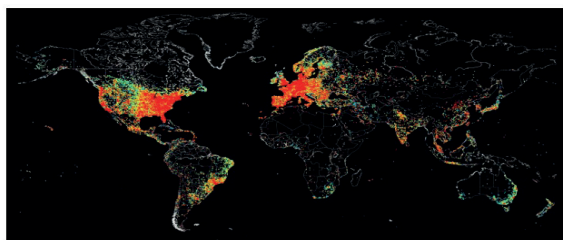
ICT imperative

Schools not yet on high speed internet. Relatively limited bandwidth in the country due to geographical isolation remote from global digital highways

Need for the HR to be digitally literate due to the country's new economic trajectory of growth through the services sector

Slide 8

Global digital highways



Slide 9

Implications for Mauritius

- One basic premise : **our HR is our only natural resource**
- By 2025 one in three jobs will be related to software use.
- Mauritius as a small state **benefits in becoming globally connected to compensate for being geographically isolated**
- **National drive for expansion of ICT** with expanded Technical and managerial support with assistance of MoICT
- **Needs a synergized approach** with all partners in expansion of ICT to all sectors, including STEM and languages

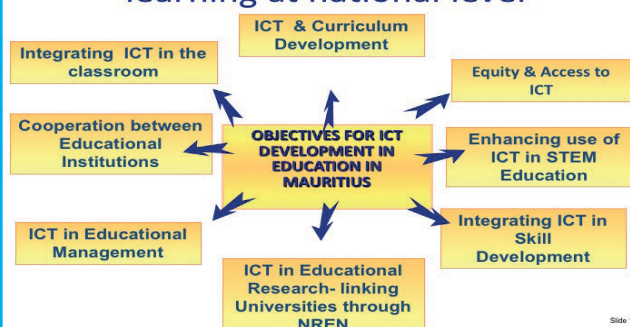
Slide 10

Managing ICT in Education in Mauritius

Needs effective leadership and management of ICT in Education in a SIDS for success:

- ▶ The Setting up of **a dedicated E-Education directorate** at Ministry
- ▶ The Creation of **an inter-ministerial coordination committee** for better national coordination for Education and ICT (comprising Ministries of Education, ICT, Finance, Gender, Social security)
- ▶ **Subsidized internet connectivity** at national level
- ▶ Designation of **one a public agency responsible for training in ICT in Education for all levels of management and educators**
- ▶ Use of varied solutions platforms – to **reduce vendor lock-in**
- ▶ Appointment of dedicated **ICT Support officers in schools**
- ▶ ... **small size can be an asset** due to small scale deployment

Objectives to enhance teaching and learning at national level



Slide 12

ICT ACTIONS IN EDUCATION

ICT Infrastructure Digital interactive projectors in primary schools All primary schools have at least one computer room Expansion of number of interactive projectors in Primary schools	Connectivity Schoolnet in Secondary schools Computer rooms in Primary schools Tablet PCs in secondary schools
Websites in Secondary schools Tablet PCs to all Form IV students	Support to Educational Management EMIS SMS e-register for attendance Encouraging use of E-timetabling
ICT across the Curriculum Not only as a subject but as a support tool to all subjects CDs provided to Std I-III educators DVD provided to Std IV-VI educators Promoting ICT and SEN Enhancing ICT in STEM through Datalogging, Sankore and Tablet PC project	Teacher Training using ICT ICT Training for Teacher – Pre-service & In service for Std IV-VI and secondary

Slide 13

Adoption of an Open Source Policy by the Ministry of ICT

Current approach :

1. Encouraging use of open software under GNU Public license or Creative Commons
2. All digital resources publicly produced by Mauritius Institute of Education are OER
3. Encouraging use of OER software wherever possible ... but not completely closing other options



UNESCO definition of OERs

- *"teaching, learning and research materials in any medium, digital or otherwise, that reside in the public domain or have been released under an open license that permits no-cost access, use, adaptation and redistribution by others with no or limited restrictions."*

Why OERs in Mauritius ?

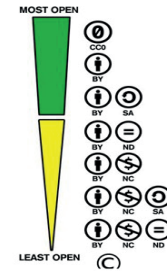
- They are easily available and readymade, which is great for Mauritius where preparation of digital resources is limited
- They do not cost much, if at all
- Teachers can focus on the pedagogy and not on the technological aspects
- They can be used both online and offline
- They can be recontextualised, depending on the type of OER license they are in
- They exist in a diversity of forms – *Gardner's multiple intelligences*

Commonly used licenses

- GNU General Public Licence 3.0
- Creative Commons

CC Symbol	Description
1	[BY] By Attribution Permits all uses of the original work, as long as it is attributed to the original author (Note: Attribution is in all six licences)
2	[BY-SA] By Attribution – Share Alike As above, but any derivative work must also use a similar license, hence "Share Alike"
3	[BY-ND] By Attribution – No Derivatives Licensed works are free to use / share with attribution, but does not permit derivative works from the original
4	[BY-NC] By Attribution – Non-Commercial Licensed works are free to use / share / remix with attribution, but does not permit commercial use of the original work
5	[BY-NC-SA] By Attribution – Non-commercial – Share Alike Does not permit commercial use of the original work, and any derivatives from it must use a similar licence
6	[BY-NC-ND] By Attribution – Non-Commercial – No Derivatives Does not permit any commercial use or derivatives of the original work. <i>Note: this is the most restrictive of CC licences, and is often regarded as a "free advertising" license</i>

A continuum of licensing options...



...and it is a challenge for developing education departments, especially in small islands, where exposure to latest developments in ICT is limited, to determine which is most suitable for specific products in specific contexts ...

Part 2 :ICT and STEM Education

What is STEM Education ?

What is ICT in STEM Education ?

Teaching of

- Science
- Technology
- Engineering
- Mathematics

using ICT

There will now be questions on ICT and STEM Education appearing on the screen

For each question, think carefully for 3 seconds and then lift up your cards !

Red card for No !

Green card for Yes !

Are you ready ?

Red for No !

Green for Yes !

ICT in STEM Education

ALL the schools where I work have **at least one** item of basic ICT equipment (ie at least one PC, one Laptop or one Tablet), anywhere in the school

ICT in STEM Education

Kindergarten through 12th grade education usually focuses on science or mathematics education, **as isolated subjects**

ICT in STEM Education

There is **no** intertwining between ICT and the STEM subjects in the real world

ICT in STEM Education

ICT helps to integrate education in science or mathematics from Kindergarten through 12th grade

ICT in STEM Education

Assists in the provision of multimedia stimuli

ICT in STEM Education

Is not a good thing because science education has to be done in a science lab, not in an ICT room

ICT in STEM Education

It is not about ICT, it is about how ICT is used meaningfully to make teaching and learning of science and technology more efficient and effective

ICT in STEM Education

Helps to provide a hands-on approach to presentation and solution of abstract concepts

ICT in STEM Education

Helps to recognize that more than one approach to problem solving in STEM Education may be valid

ICT in STEM Education

ICT cannot be used use to stimulate critical thinking and apply inquiry skills in STEM

ICT in STEM Education

ICT encourages individual learning – the children are always glued to their screens and seldom share with each other

ICT in STEM Education

ICT provides team and interactive work opportunities in STEM Education

ICT in STEM Education

Helps to show how mathematical and technological solutions apply to real world problems

ICT in STEM Education

ICT helps to apply science concepts from more than one science discipline

ICT in STEM Education

Gives the opportunity for alternative methods of assessment

ICT in STEM Education

Helps to recognize that different students approach a problem or topic from different entry points

ICT in STEM Education

Helps to recognize that prior knowledge may determine the approach the student takes to the problem

ICT in STEM Education

Is an argument that software or hardware vendors use to convince schools buy 1 : 1 (one laptop or one tablet per child) deployment solutions, so that they get in more money

ICT in STEM Education

Helps to open up new possibilities of investigation, and to show that sometimes a question simply generates many more questions

ICT in STEM Education

Is an argument that private universities use to attract more students towards STEM because they then get more money through higher university fees

You deserve a big round of applause for your participation !

Pedagogies for ICT and STEM

Presentations	Lesson plans	Printed handouts to students
Syllabi	STEM simulations	Classroom discussions
Assessments	Game based learning	Science videos/ demonstrations

Tools used in ICT in STEM Education

- Ebooks
 - data loggers
 - PPT
 - Word
 - Excel
 - pdf
 - Youtube
 - Still Camera
 - Movie camera
 - Image manipulation software
 - Apps
 - Skype/Google Hangout
 - search engines
 - Moviemaker
 - Audio recorder
 - Repositories
- + any others ?

Platforms used in STEM Education in Mauritius

- Pre primary schools : the **bee-bot**
- **Teaching the sky** : **Stellarium** open software (dark and clear sky in Mauritius)
- Using **digital interactive projectors** in classrooms
- Using **OERs and multimedia resources** freely available or downloaded on the web
- Using **powerpoint** in STEM Education
- Using **dataloggers** in Science
- **Virtual/augmented reality labs** in TVET training
- **Tablet PCs** in secondary schools ... but connectivity has been a problem
- **Open Sankoré** - a francophone African OER interactive software initiative:
 - (i) Interactive apps in Open Sankoré
 - (ii) Contextualised resources produced in Mauritius

Part 3 : Hands on practice of ICT and STEM tools used in Mauritius

3 (i) offline resources

And

3 (ii) online resources

Using offline resources for STEM Education

Hands on session on using Open Sankoré

<http://open-sankore.org/>

<http://planete.sankore.org>

ICT in Education in Francophone African countries : the Sankoré Project

- Started as a project in Francophone African countries
- Symbolically uses an African name to show that ICT in Education can happen in Africa
- Uses digital interactive projectors and Open Sankoré software
- Has growth from project into a national programme in Mauritius through Government funding
- All primary schools in Mauritius are equipped with the software and used offline.



Sankoré was a 13th Century centre of higher learning in Timbuktu, Mali, Africa



50

Advantages of Open Sankore

- Freely downloadable – Is Open source under GNU GPL version 3 - Any user is given permission to modify the work, as well as to copy and redistribute the work or any derivative version. The user is allowed to charge a fee for this service, or do this free of charge.
- Is simple to use for Primary schools
- Is well adapted to STEM education in Primary schools due to interactivity
- Can be used from a laptop or PC, if interactive projectors are not available
- Users can benefit from the OER base of Planete Sankore. This is an open repository of Open Sankore specific contents, especially for the Francophone world.
- Teachers can also create their own resources to upload on that site.

Using online resources for STEM Education

- Connecting all Primary and Secondary schools to encourage use of online resources
- Use of existing repositories – OER Commons. A team of the Mauritius Institute of Education will be visiting the NCERT/NROER to learn further on repository creation and contextualisation
- Training in use of online resources

Use of online resources for STEM Education

Hands on session on using OER Commons

<http://www.oercommons.org>

Observations

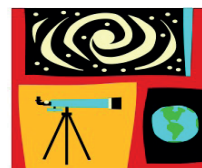
- Online and offline ICT tools well adapted to Mauritian and Cambridge O/A level curricula and examinations. Exams encourage critical thinking and application of learning, not learning facts
- Connectivity is an issue due to geographical remoteness. We train the teachers to download and use resources offline.
- Mauritius has the advantage of being bilingual in French and English, so we can use existing large global online resources
- Approach helps to create a culture of research and usage of ICT in STEM education given the large variety of OERs available online
- Sometimes we have no control on how the online or offline resources used change – *but the world is also a changing one ...*

Conclusion

*At the end of it, it is the science or mathematics **teacher** who makes all the difference*


It is not the technology, but instead how that committed teacher creatively makes use of ICT as one of a variety of teaching aids

Thank you !



Ricaud AUCKBUR
rauckbur@govmu.org
<http://ministry-education.govmu.org>

Presentation of Day 5 (4th Nov, 16): By Dr. Clarisse Lima



**INTERNATIONAL FORUM ON
ICT PERSPECTIVES TO
LEARNING AND EDUCATION**

**360° ASSESSMENT
IN SCHOOL**

Dr. Clarisse Lima
Consultant Unesco-IBE

AGENDA

1. Contextualization
 - The School and the Educational System
 - Assessment x Evaluation
 - Standardization x Customization
 - What to assess?
2. Hands-on activity A: What would you change in school?
 - Showing the Analytics to make informed decisions - What do the results inform us?
3. Hands-on activity B: Creating a survey and sharing it



1900s



2000s

SIR KEN ROBINSON

TED Ideas worth spreading

Ken Robinson: **Do schools kill creativity?**

VIDEO 10:24 • Filmed Feb. 2006

41,678,013 views

https://www.ted.com/talks/ken_robinson_says_schools_kill_creativity

STANDARDIZED X CUSTOMIZED

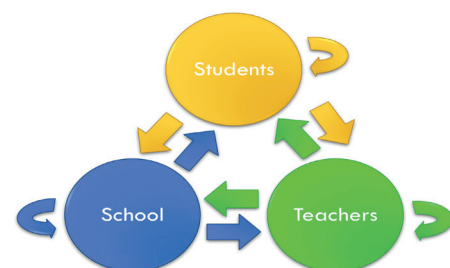


ASSESSMENT X EVALUATION

Domains	Assessment	Evaluation
Content	Formative: ongoing, to improve learning	Summative: final, to gauge quality
Orientation	Process-oriented: how learning is going	Product-oriented: what has been learned
Outcomes	Diagnostic: identify areas for improvement	Judgemental: arrive at an overall grade/score

Adapted from: Angelo, T and Cross, K.P. 1993. Classroom assessment techniques a handbook for college teachers. Jossey-Bass A Wiley Imprint, San Francisco, CA. Pp 427.

360° ASSESSMENT



THE SCHOOL I'D LIKE (THE GUARDIAN, 2011)

Michael, 11, Norfolk

Children would be more confident if the school encouraged them to express their views and showed them they had listened. **It would feel as if everyone was part of a team.**



THE SCHOOL I'D LIKE (THE GUARDIAN, 2011)

Jessica, 18, Berwick-upon-Tweed

An ideal school is **inclusive of everyone**. I think that's important in the modern world we live in.



THE SCHOOL I'D LIKE (THE GUARDIAN, 2011)

Zarah, 8, London

It's important to listen to children because you have to **treat them with respect** if you want them to have respect for you.



THE SCHOOL I'D LIKE (THE GUARDIAN, 2011)

Linda, 15, London

I think the most important point is having **expert teachers**, because if you have people who are **passionate and well known** in their subject they are more likely to engage and motivate the students into excelling in the same way as them.



THE SCHOOL I'D LIKE (THE GUARDIAN, 2011)

Markus, 6, Cambridge

Children should be listened to because **they sometimes have better ideas than adults**. That is because the children's brains are new and not old.



HANDS-ON ACTIVITY A:

1. TAKE A SURVEY
 - What would you change in school?
2. ANALYZE THE RESULTS

HANDS-ON ACTIVITY B:

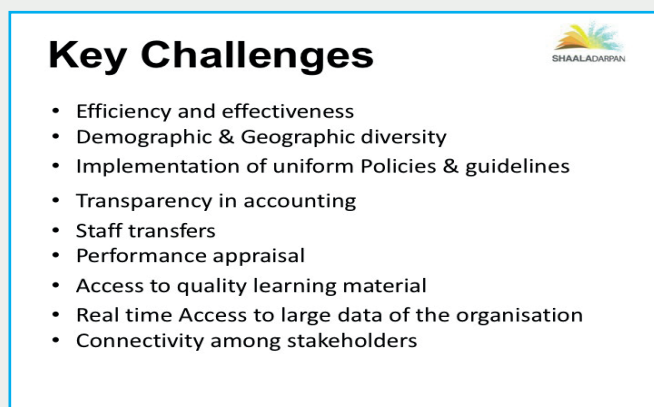
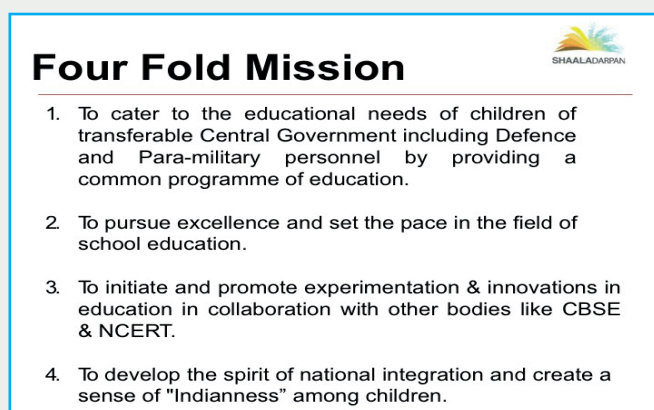
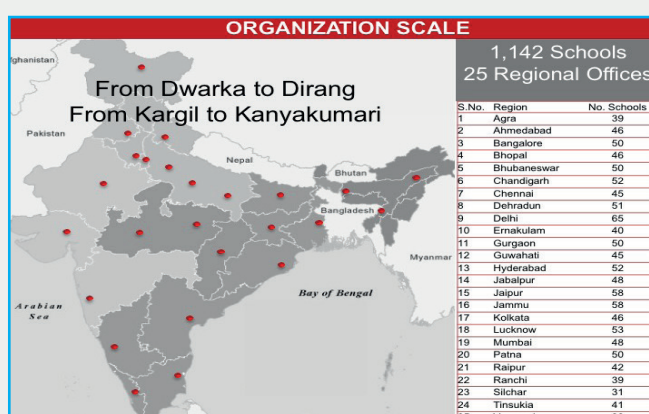
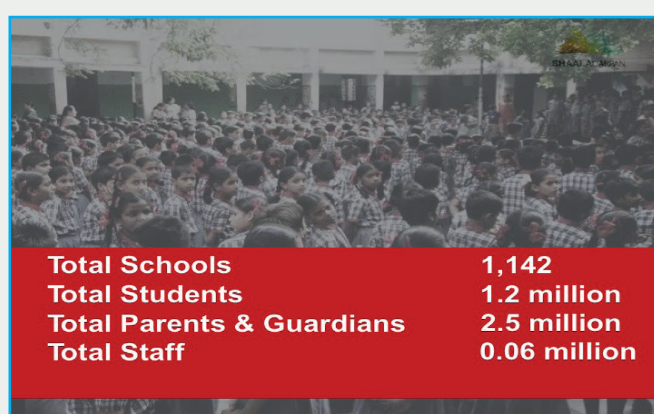
1. CREATING A SURVEY
 - a) Students evaluating teachers
 - b) Students evaluating the school
 - c) Students self-evaluation
2. SHARING THE SURVEY

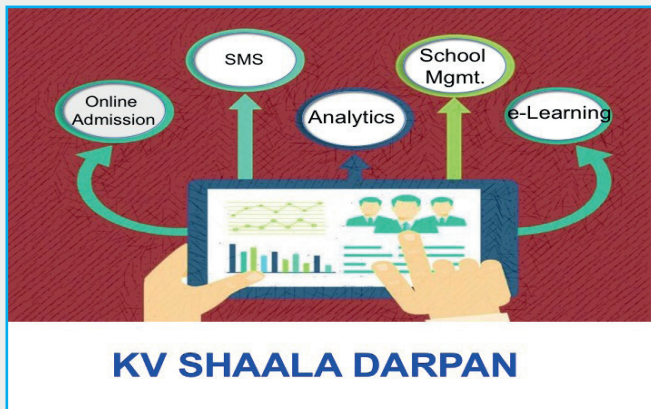
THANK YOU!

धन्यवाद

OBRIGADA!

Presentation of Day 5 (4th Nov, 16): By Dr. V. Vijayalakshmi





Objectives

'Shaala Darpan' refers to mirror view of a school. It is a Mission Mode Project (MMP), with following objectives:

- Enable improvement in quality of learning
- Improve efficiency of school administration and governance of schools
- Improve service delivery of school education department to the key stakeholders including students, parents, community, teachers, and schools
- Access to near real-time and better quality data for decision support

LOGIN TO URL:
<http://darpan.kvs.gov.in>

Online Admissions

- For Parents (Application for Admission)
- For Schools
- For KV Regional Offices
- For Sangathan

Learning Support Platform

- For Students
- For Teachers

Analytics

- For Parents
- For Students
- For School Principal
- For Class Teachers
- For KV Regional Offices
- For Sangathan

School Expert System

- For School Staff
- For Students

Module Platforms

# Applications	# Modules
1 admission.kvs.gov.in	1 Online Admission
2 admin.kvs.gov.in	2 Parent/ Guardian Information Module
	3 Multiple School Integrated Dashboard
	4 Principal Dashboard (Additional Feature)
3 darpan.kvs.gov.in	5 Student Management
	6 Examination
	7 Attendance
	8 Time Table
	9 Library Management
	10 Employee Management
	11 Payroll
	12 Fee & Fine
	13 Financials
	14 System Administration
	15 SMS Module
4 learning.kvs.gov.in	16 e-Learning System
5 mip.mgrmnet.com	17 MGRM Implementation Practices

Online Admission

Parents

- Search for school online
- View school information online e.g. vacancy
- Apply Online
- Online Acknowledgment
- Email Confirmation

School

- View list of applicants
- Shortlist students
- Admit Students

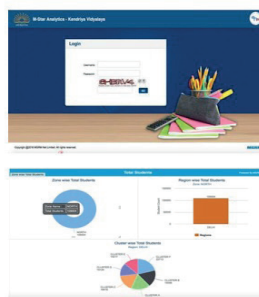
Regional Office

- View list of applicants
- View list of shortlisted candidates
- View list of admitted candidates

Head Quarter

- Define Guidelines
- Uniform Policy Implementation
- View list of applicants
- View list of shortlisted candidates
- View list of admitted candidates

Analytics



DASHBOARDS

- Parents**
- View Childs information –
 - Attendance
 - Exam Schedule & Results
 - Timetable
 - Subject teachers
 - Health, etc.
- Principal**
- Class-strength
 - Student Attendance
 - Result Analysis
 - Staff information etc.
 - Student Dashboard
- Regional Office & HQ**
- Number of students across all schools
 - Number of employees across all schools

Parent Dashboard

KENDRIYA VIDYALAYA AAI RANGPURI
NEAR NANGAL DEWAT VILLAGE
NEW DELHI - 110057

Saturday, January 05, 2019

Dashboard

- My Profile
- My Time Table
- My Subject Teachers
- My Holidays
- My Attendance
- Exam Schedule
- Exam Result
- My Health
- My Library

M-Star Analytics

Address Type: PRESENT

Father's Details

Name: MADHUSUDAN
Address: 862 SUNAMAN
City: NEW DELHI
State: DELHI
Country: INDIA
Occupation: CISF
Designation: SERVICE

Mother's Details

Name: PUSPA DEVI

User Profile

Name: ANYUSH SINGH
Admission No: 000008
DOB: 07-Oct-2007
Age: 8 Years, 3 Months, 15 Days
Class: B.A
Blood Group: O +VE

Principal Dashboard

KENDRIYA VIDYALAYA AAI RANGPURI
NEAR NANGAL DEWAT VILLAGE
NEW DELHI - 110057

Saturday, January 05, 2019

M-Star Analytics

Configuration

Admission

Schedule

Fee

Transport

Attendance

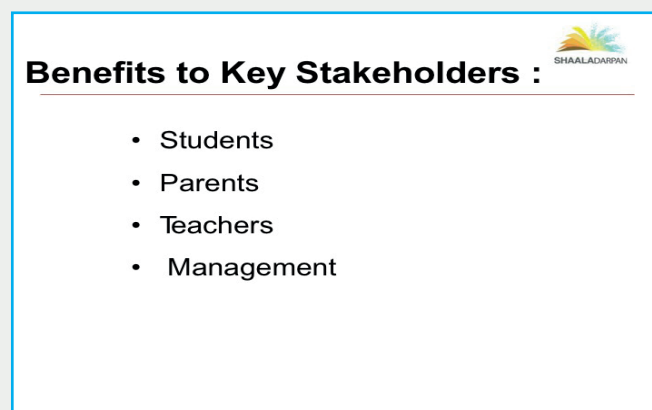
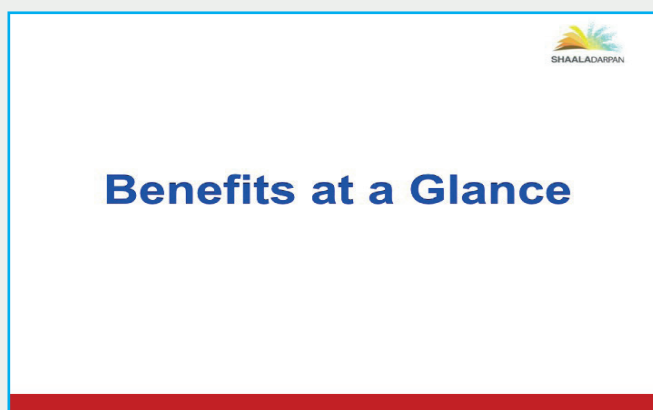
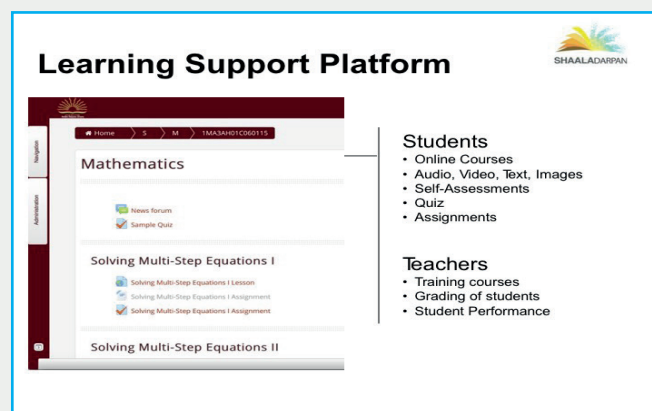
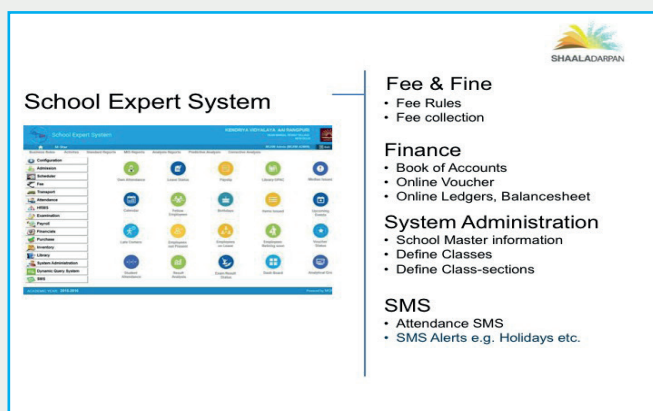
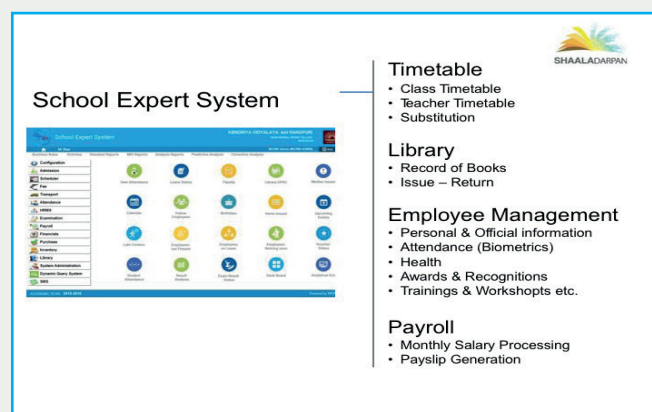
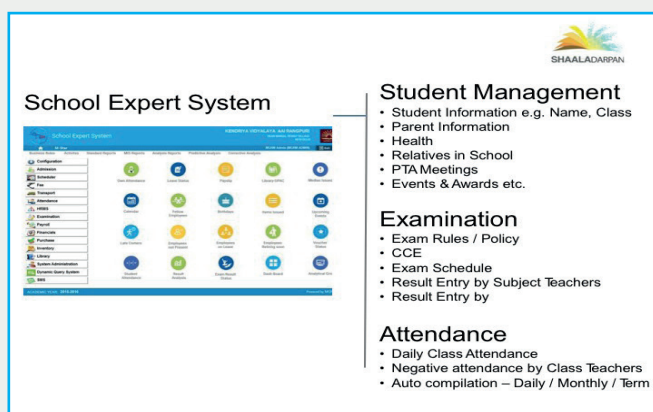
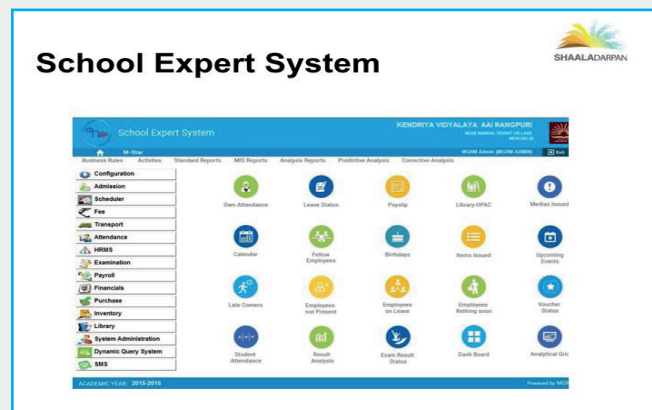
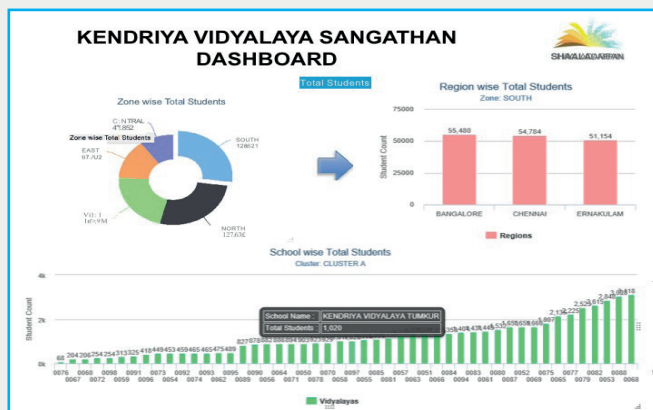
HRMS

Examination

Payroll

User Profile

Name: YASMEEN SHARH
Designation: ADMINISTRATION
DOB: 07-May-1987
Age:
Designation: PRINCIPAL
Blood Group: B +VE





Benefits to Students:

- Comprehensive record of participation, performance, achievements in academics / extra-curricular activities
- Access to academic / personal records
- Learning Support Platform for eContent/eLearning
- Enhanced interactions with teachers / peers
- Strong sense of empowerment



Benefits to Parents:

- Direct / seamless information flow from school
- Monitoring the wards':
 - Attendance
 - Academic progress
 - Participation in extra-curricular activities
- Experience increased involvement
- SMS Alerts



Benefits to Teachers:

- Alerted to academic problem areas
- Report student attendance & grades in minutes
- Learning Support Platform for eContent delivery
- Online access to schedules & duty assignments
- Improved communication with Students / Parents



Benefits to Management:

- Oversee electronic blueprint of school enabling data analysis and decision making
- Anytime, anywhere access to reports and information
- Ensuring KVS policy framework oriented academic Management
 - Tracking teacher performance



Public Domain:

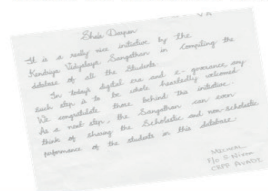
What do Parents have to say?



Parent Feedback

Very good portal – student should avoid opening Facebook / email

Makes my daughter's work easier



Very useful & appreciable portal – happy to see my child's details



Parent Feedback

Very good initiative by KVS

In today's digital era, this step is whole-heartedly welcome



Portal gives information about my child in a simple click



Thanks

Presentation of Day 5(4th Nov, 16): By Dr.Badar Hamood Rashid Al Kharusi and Mr.Faisal Alinasser Al Busa'idi

MINISTRY OF EDUCATION

**Monitoring the Education System using ICT:
Experience from the Sultanate of Oman**


Badar Al Kharusi
b.alkharusi@moe.om
Faisal Albusadei
f@moe.om

MINISTRY OF EDUCATION


Content

- General Information.
- Education- quantitative and qualitative development.
- Education and ICT in Oman.
- Educational Indicators system.
- Conclusion.

Ministry Of Education Sultanate of Oman



- History.
- Economy.
- Geographic location.
- Population.

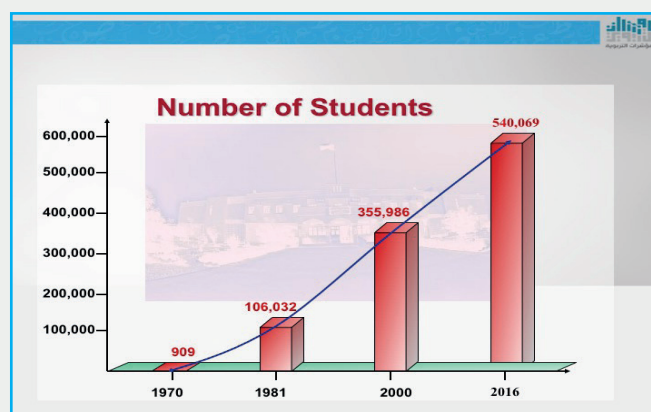


Under the shade of a tree

Chang



Basic Education School



Smart Applications

Parent application
Provide digital services to parents

My School
Help teacher to record student marks

Educational Indicators System



Project Aims

- Improve education quality.
- Built smart Educational indicators.
- Utilize technology in developing (school, teacher, student) performance.
- Tracking progress of each (school, teacher, student) in the Omani educational system.
- Provide partner institutions in the Sultanate with educational statistics and indicators in the field of educational work.
- Support the ongoing assessment of plans, projects and educational programs undertaken by the MoE.



How is the system work?

- EIS is a digital electronic system developed to read databases files from the main educational portal.
- The system developed to produce comprehensive and detailed reports about issues such as (overall school performance, academic progress, staff Affairs etc) .
- The system includes 8 main indicators and 40 sub-indicators.
- The system includes 220 million records.



Agencies and Groups benefit from the project



Key Performance Indicators



Sample of presentation of some indicators and sub-indicators.

Examples from the Educational Indicators System

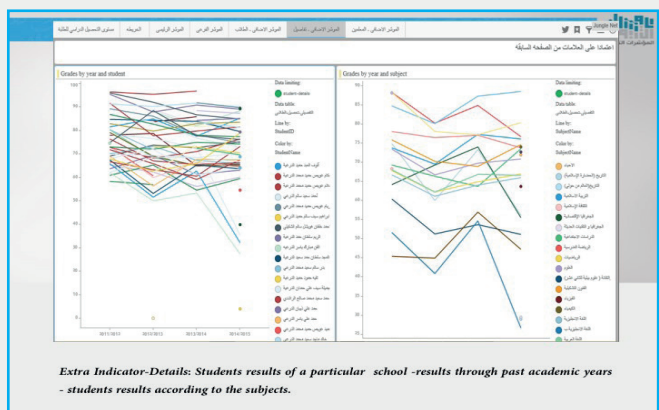
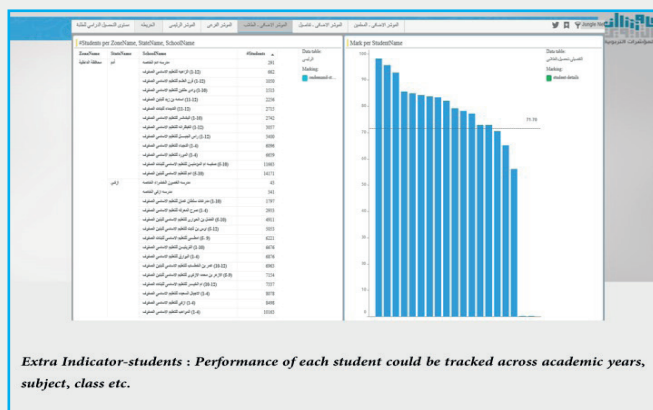
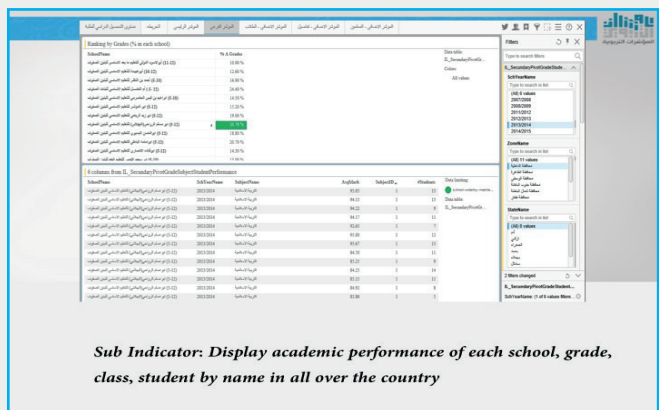
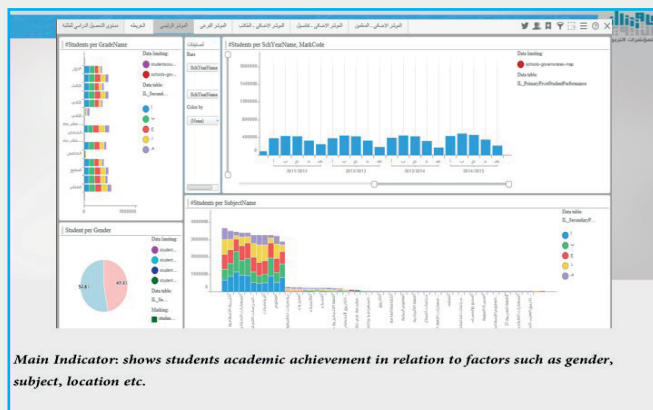
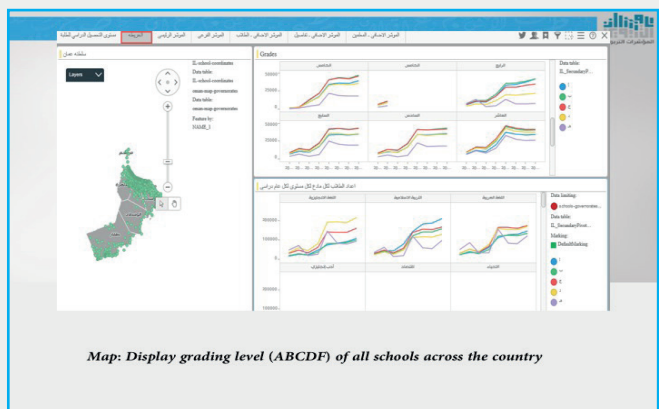
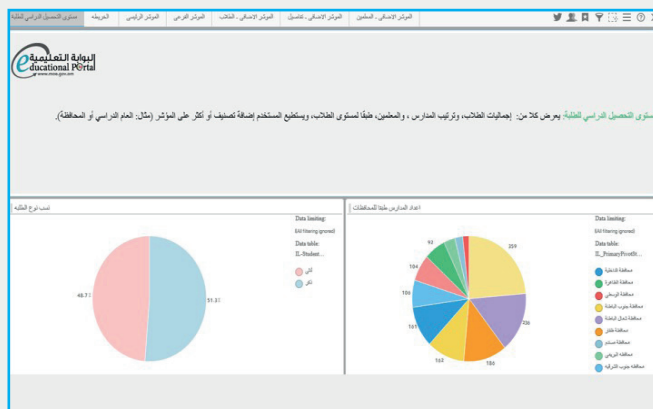
First Indicator

School Academic Performance



Academic Achievement

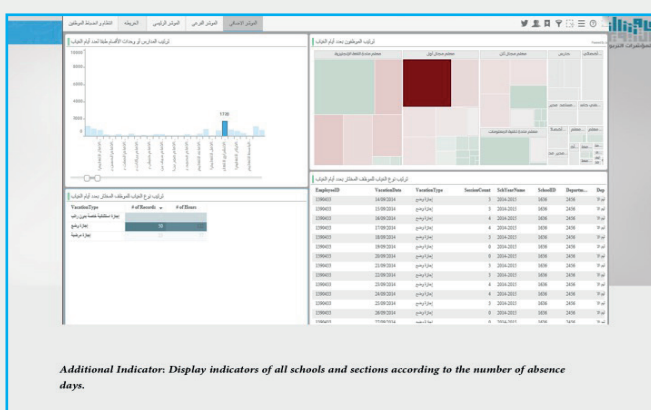
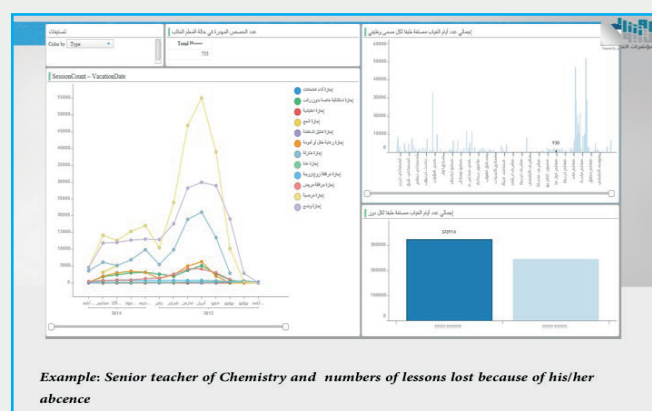
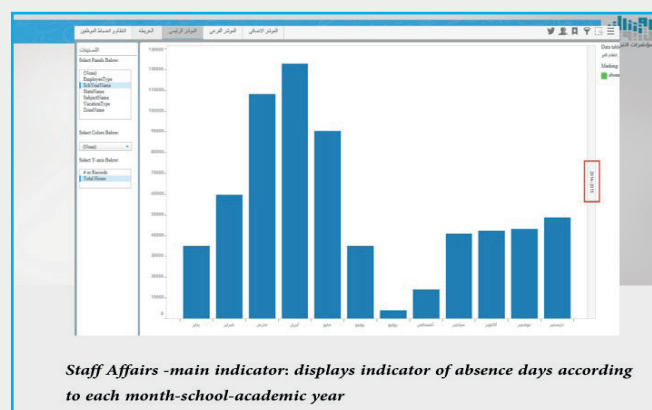
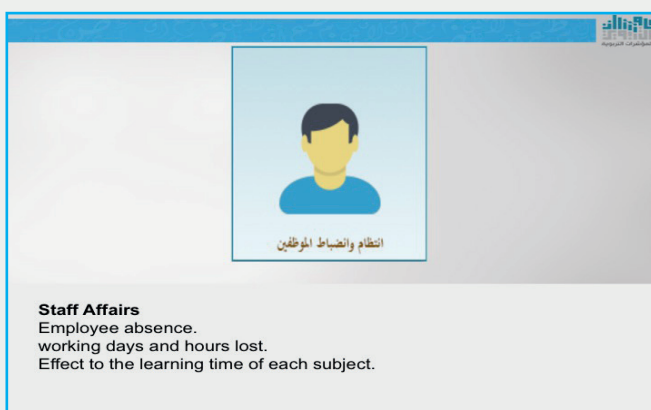
- Tracking each school and each student's academic performance (Academic Year, Gender, location, Subject ect).
- Development of School Performance (Academic performance development, Supervisors opinions, Parents' opinions, students' opinions).





Second Indicator

Staff Affairs



Therid Indicator

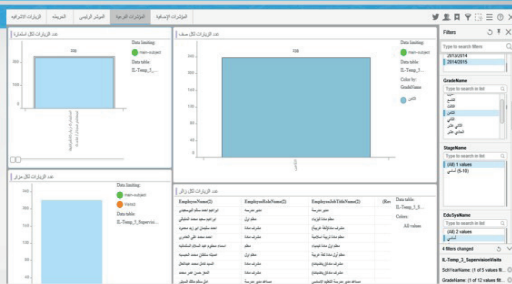
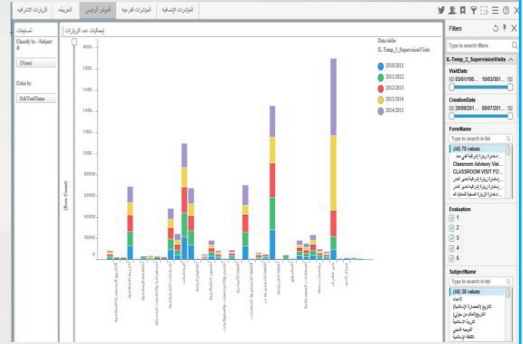
Supervision Visits



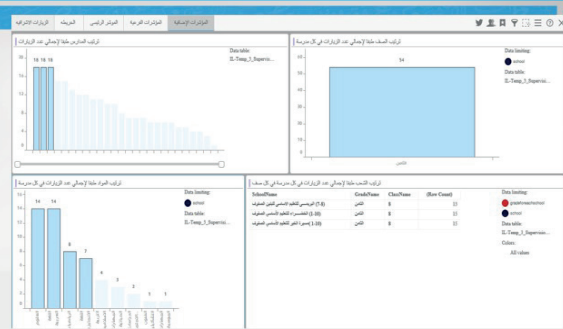
Supervision Visits

- Calculate visit numbers according to each subject in the school.
- The user can add a classification or more (Example: the academic year or governorate).
- Help to identify total visits numbers to each teacher and each school in the country.

Total visits according to academic year



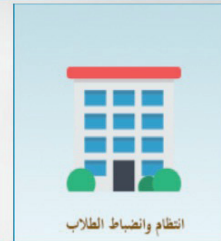
Example of sub-indicator



Example of sub-indicator

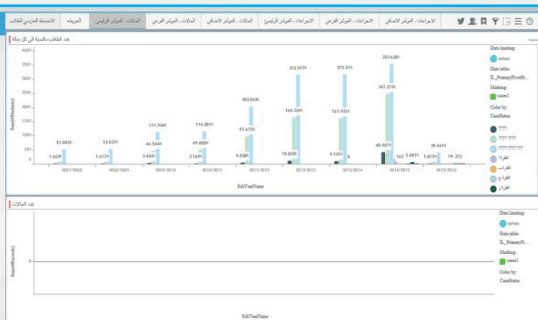
Fourth Indicator

Students Affairs



Students Affairs:

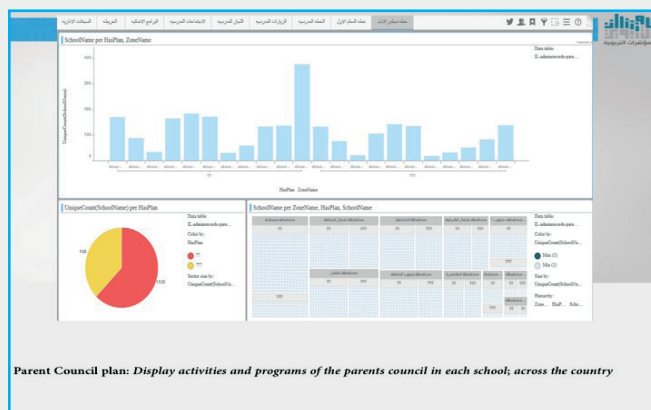
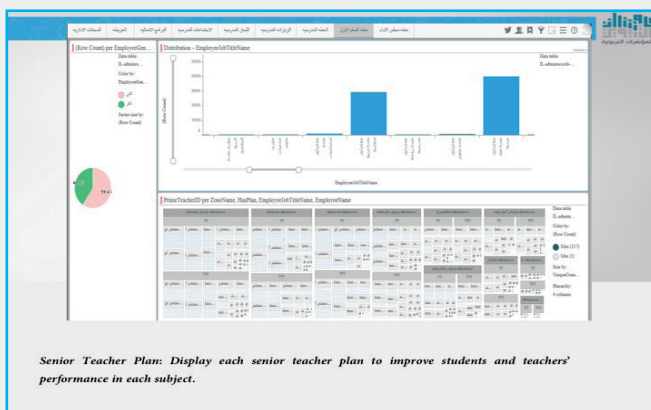
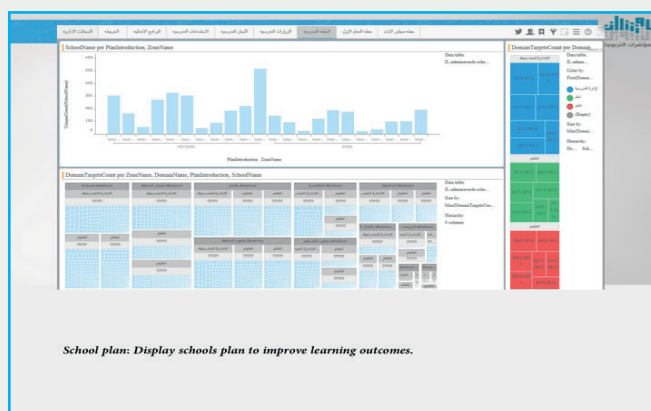
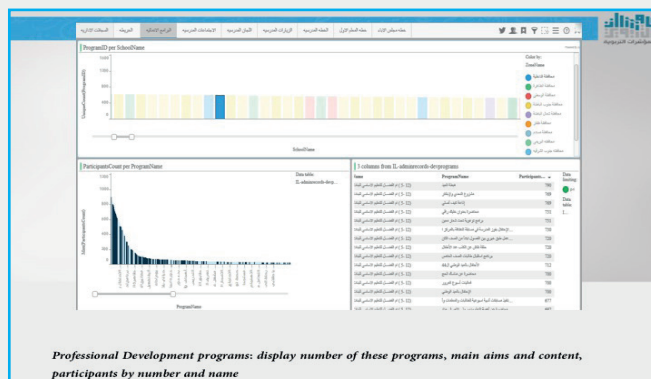
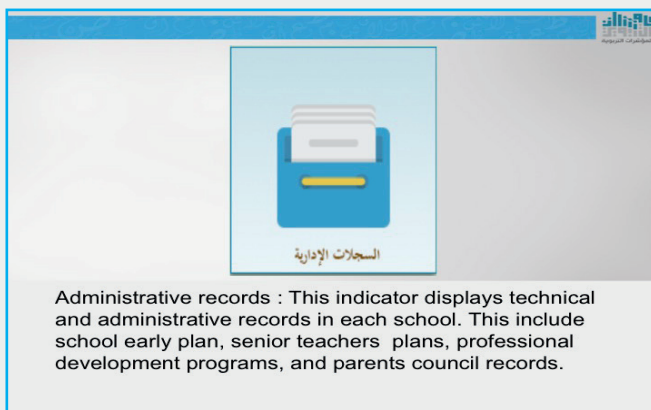
This indicator helps to calculate students absence according to the actual learning days in the academic year. It also display numbers in relation to students' behavior and discipline in the school.



Main Indicator: shows students' records in relation to absence and kind of misconduct.

Fifth Indicator

Administrative Records

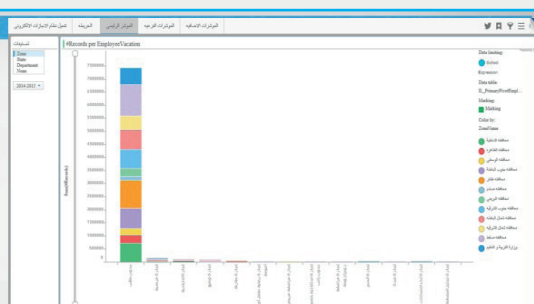


Sixth Indicator

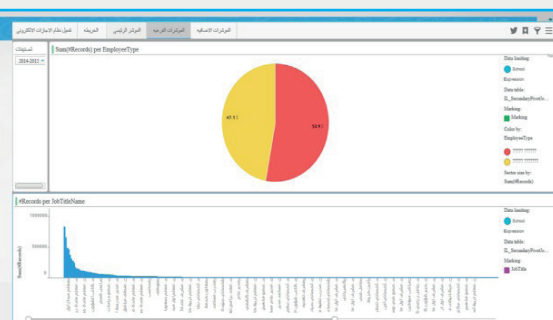
Leave Electronic System



Leave Electronic system: Display number of annual leave, sick leave and other forms of absence from school according to the existing rules and regulation.



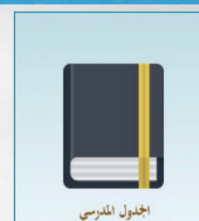
Main indicator: shows leave's number in each educational governorate according to leave type (annual, sick etc)



Sub Indicator: percentage of absence or official leave among teaching or administrative staff in each school, subject, and by name of each staff.

Seventh Indicator

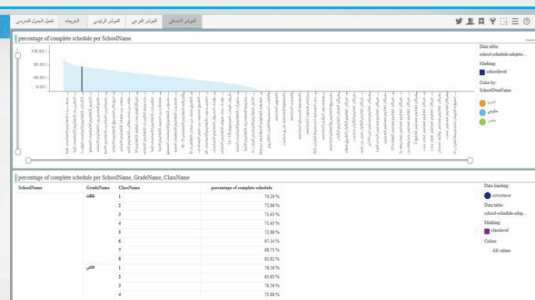
School Timetable



Activating school Timetable : Display the weekly timetable of each grade in all schools across the country>



Sub-indicator: display schools weekly time table in three categories:(complete – incomplete - not active)



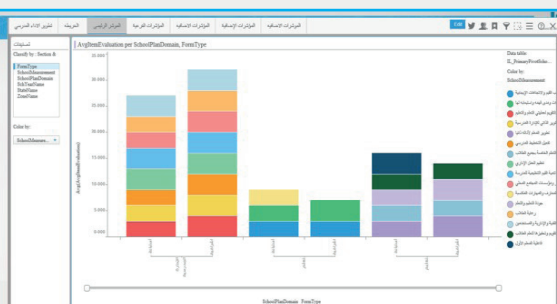
Additional indicator: displays the extend of activating each classroom timetable for a specific school.

Eighth Indicator

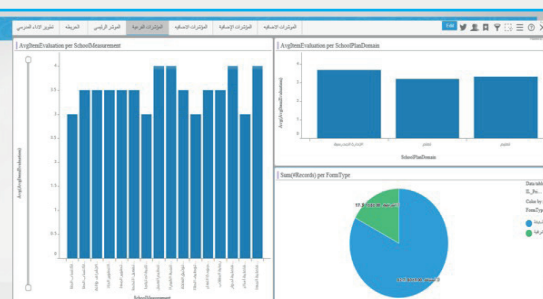
School Performance Development System



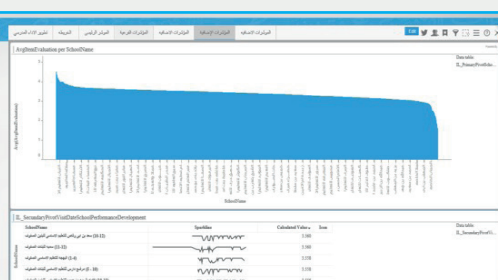
School Performance Development System: Display the overall performance in each school according to various factors such as academic performance, teachers opinion, parents opinion, supervisors records and students' opinions.



Main indicator: show types of forms and questionnaires in all fields (school, administration, education, learning).



sub-indicators: explain average performance of each school based on assessment and opinion of all stakeholders.



Additional indicators: Best schools across the country according to different factors such as academic performance, school climate, students behavior, teachers performance ect.

Thank You

ANNEXURE – 6

HANDOUTS BY FACILITATORS

International ICT Forum Session Outline

Digital Content creation at CIET-NCERT

Brief background of the theme

Central Institute of Educational Technology, a constituent unit of NCERT, came into existence in the year 1984 with the merger of Center for Educational Technology and Department of Teaching Aids. It is a premier Institute of educational technology at the national level. Its major aim is to promote utilization of educational technologies viz. radio, TV, satellite communications and cyber media either separately or in combinations and its appropriate use to enhance learning and improve productivity in classrooms and schools. The Institute undertakes activities to widen educational opportunities promote equity and improve quality of educational processes at the school level. The broad areas of activities of CIET are listed below:

To design and produce media software especially mass media viz. educational Radio and Television; interactive Multimedia and web based learning resources utilizing ICT to enrich the transactions of curricular activities at different levels of school education.

To optimize the utilization of EDUSAT communication technologies and terrestrial transmission of national channels: DOORDARSHAN, GYAN DARSHAN, GYAN VANI and SWAYAM PRABHA DTH-TV Channels

- To explore and infuse the appropriate and critical use of interactive digital content, web based communication and participatory networks. To collate and curate repositories of digital content and deploy it on the National Repository of Open Educational Resources (NROER).
- To undertake research and evaluation studies for assessment of need, preparation of audience profiles; undertaking monitoring and evaluation of systems programmes and materials to improve their effectiveness; to study their impact on learning processes, development of children & teachers and efficiencies of systems.
- Documentation of educational media programmes and research for enhancing utilization.
- Dissemination of media programmes through broadcast and non-broadcast modes through the distribution of VCDs/DVDs and the web.
- Capacity building of (a) teachers and teacher-educators in concepts and applications of techniques and technologies for improving classroom instructions and their management processes (b) of State Institutes of Educational Technology (SIETs) and Regional Institutes of Education (RIEs) personnel through training in Scripting, Production of media programmes, ICTs/Communication and Media research and technical operations.
- To advise and coordinate (a) academic and technical programmes of the five State Institutes of Educational Technology (SIETs) (b) implementation of the National Policy of ICT for School Education and ICT@Schools Scheme.
- To provide consultancy to various organizations and individuals in the development, utilization

and evaluation of educational technologies.

- The institute has the state of art e-content development facilities-studios, post production editing, transmission, video conferencing facilities for creation and dissemination of e-contents

Objectives of the session

- This session on Digital Content Creation is focused on providing hands on planning/writing of script/story board for television/radio/multimedia, recording of media programme, post production/editing.
- Use of networks for video conference with teacher education institution and contribute in capacity building
- Use of research tools for evaluation of audio, video and multimedia contents

Competencies to be acquired

General competency of creating digital content in the form of audios and videos. Use for video conferencing for training of teachers/educators.

Description of the hands on activities

Writing of Story board/scripts
Production of audio/video/multimedia and editing
Use of video conferencing and evaluation of e-contents

Participants involvement

Participants will be involved in all the activities related to writing of scripts/story boards, recording of media programme, editing, tryout and video conferencing.

Equipment and material needed

PC/Laptops

ICT Fair Exhibits

1. NROER

The National Repository of Open Educational Resources (NROER) is an initiative of Ministry of Human Resource Development (MHRD), Govt. of India and CIET-NCERT to bring together all digital and digitisable resources across all stages of school education and teacher education. This spans to all subject domains and will be available in all Indian languages. It proposes to use the digital resources to reach out and connect all members of the school community through a variety of events and interactions. The repository will also provide platform for Massive Open On-line Courses (MOOCs) and on-line forums for different stakeholders. Currently, NROER has more than 21,200 resources of various categories including videos, audios, documents, interactive objects and images. NROER has 22,210 registered users.

2. ePathshala

The ePathshala is a joint initiative of Ministry of Human Resource Development (MHRD), Govt. of India and National Council of Educational Research and Training (NCERT) for showcasing and disseminating all educational e-resources including textbooks, audio, video, periodicals and a variety of other print and non-print materials. The platform addresses the dual challenge of reaching out to a diverse clientele and bridging the digital divide (geographical, socio-cultural and linguistic) offering comparable quality of e-contents and ensure its access free at anytime and anywhere. Students, teachers, educators and parents can access e-books through multiple technology platforms i.e. mobile phones, and tablets (as e-pub) and on web through laptops and desktops (as flip books). ePathshala also allows its users to carry as many books as their device support. Features of these books allow users to select, read, zoom, bookmark, highlight, navigate, share and make notes digitally. The App can be downloaded from Android, iOS, Windows stores. The app interface can be accessed in 15 Languages. The resources includes 610 ePubs, 505 flipbooks and 2472 audios and videos. Currently e-resources are available in Hindi, English, Urdu and Sanskrit. The App was launched by the Honorable Minister of Human Resource Development, Govt. of India (GOI) on 7 November, 2015 and till 10 October 2016 the portal has 80,58,179 visitors, the App has a rating of 4.4 out of 5 on Google play store, 3.5 out of 5 on Apple Store, and 4.5 out of 5 on Windows Store. In all 4,12,325 users have downloaded the App from Google Play Store, 27,599 from Apple Store and 11,313 from Windows Store. Also about 4,38,321 total YouTube views are reported.

1. ICT Curriculum
2. [SWAYAM/ School and Higher Education MOOCs](#)
3. Swayamprabha 24 x 7 DTH Channel
4. [CDs/DVDs produced by CIET-NCERT](#)
5. General Education Quality Analysis/Diagnosis Framework (GEQAF)
6. [UNESCO-IITE materials](#)
7. UNESCO-IBE materials

International ICT Forum Session Outline

Assistive Technologies in School Education: Exemplar Inclusive Learning Material

Brief background of the theme



Learning to read is a pivotal milestone in the life of a child. It opens the gateway to a lifetime of exploration and enrichment. How can we promote reading in the early years with meaning and pleasure among all children in inclusive settings?

The origin of Barkhaa: A Reading Series for All was laid on the foundation of these thoughts and the fact that assistive technologies (AT) as inclusive or specialized learning materials and curriculum aids can be used effectively. Researches across the globe indicate that focusing only on transacting the syllabus through prescribed textbooks leads to acquiring basic knowledge and factual information, but the habit and desire for reading develops only in a limited manner. Hence a need was realized to go beyond the textbooks and highlight the significance of supplementary reading. Barkhaa Series, a supplementary 'graded reading series' consisting of 40 story booklets in Hindi (across 4 levels and 5 themes) for first and second graders developed originally by the Department of Elementary Education (DEE) at NCERT was used. In an attempt to promote inclusion and with a belief that all children should be given an opportunity to read the same book in the early years, the Department of Education of Groups with Special Needs (DEGSN) at NCERT supported by CIET and MHRD-GOI adapted the original Series* into ***Barkhaa: A Reading Series for 'All'***. The adaptations were made according to the Universal Design for Learning (UDL) in both print and digital forms and are characterized by salient features, which assist to provide 'all' young children an equal access to reading, focusing extensively on those children who are widely excluded due to their special needs. The session aims at discussing the process and the key adaptations of this exemplar inclusive learning material.

Objectives of the session

- The session on assistive technologies is focused on exploration of the ***Barkhaa: A Reading Series for 'All'***.
- Explain the process of adaptations done according to the Universal Design for Learning (UDL) in both print and digital forms
- Showcasing and disseminating all e-resources created for speciallyabled students Description of the hands on activities
- Navigation through the ***Barkhaa: A Reading Series for 'All'***.
- Demonstration of the process of adaptations of learning resources according to the Universal Design for Learning (UDL)

Participants involvement

Participants will be involved in all the activities related to exploration and adaptation along with a demo to use both print and digital books.

Equipment and material needed: PC/Laptops

International ICT Forum Handout – SWAYAM: A Massive Open On-line Courses (MOOCs) Platform

Brief background of the theme

SWAYAM (Study Webs of Active Learning for Young Aspiring Minds) is an initiative by Government of India to achieve the three cardinal principles of education Policy which are access, equity and quality. The objective of this effort is to take the best teaching learning resources to all, including the most disadvantaged and facilitate lifelong learning. SWAYAM seeks to bridge the digital divide for students who have hitherto remained untouched by the digital revolution and have not been able to join the mainstream of the knowledge economy.

NCERT's School MOOCs

NCERT is the National Coordinator for School level MOOCs. Initially the courses will be available for class XI to XII in all the subject areas such as Accountancy, Business Studies, Biology, Chemistry, Economics, History, Geography, Mathematics, Physics, Political Science, Psychology and Sociology. Each course contains about 40 hours of eContent.

MOOCs for PG Students of Education/ Teacher Education

UGC is the National Coordinator for development of MOOCs for non-technical post-graduate degree programs. CIET-NCERT is developing MOOCs for the subject of PG courses in Education. These courses are being hosted on SWAYAM and NROER. A learner can earn certificate/ credits on successful completion of any course on SWAYAM.

Objectives of the session

- This session on SWAYAM is focused on providing a glimpse of the MOOCs platform.
- The navigation of the platform will be ensured in order to take a tour of it.

Description of the hands on activities

- Navigation through the SWAYAM Platform
- Development of MOOCs and modules for on-line courses

Participants involvement

Participants will be involved in all the activities related to navigation and content creation along with a demo to run a course on various platforms like NROER, SWAYAM, etc.

Equipment and material needed: PC/Laptops

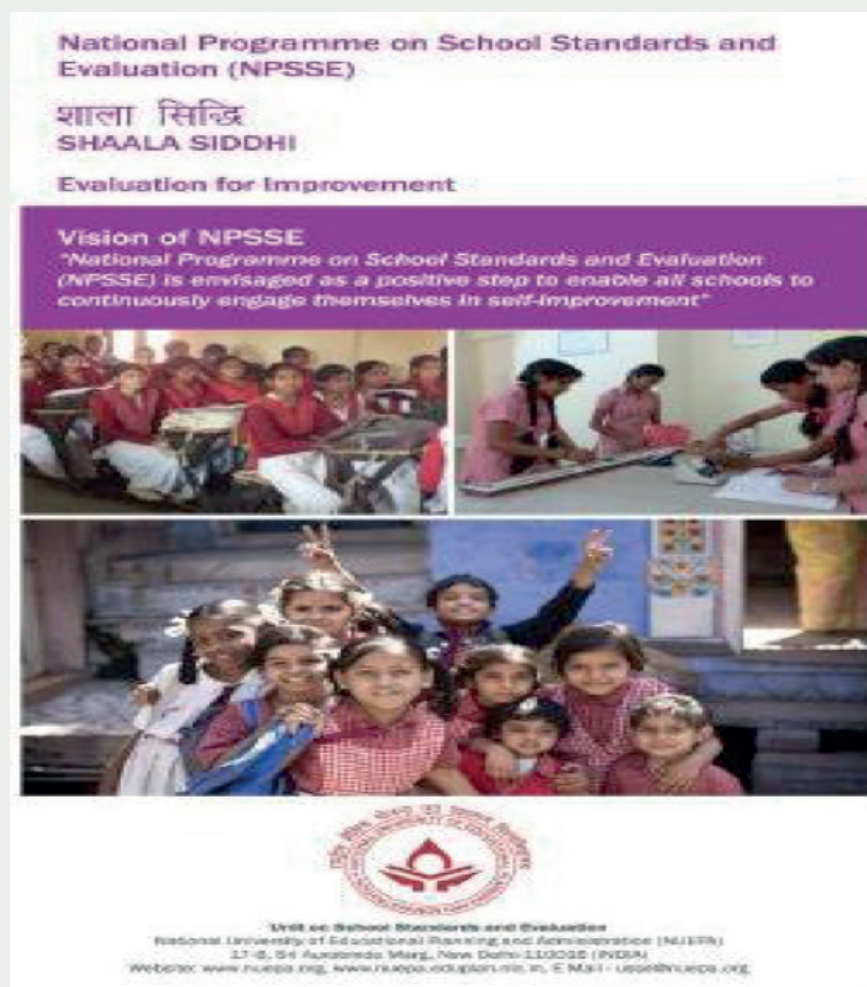
National Programme on School Standards and Evaluation Shaala Siddhi : An initiative towards School Improvement

(www.shaalasiddhi.nuepa.org)

Prof. Pranati Panda *

Brief Background of the theme

The need for effective schools and improving school performance is increasingly felt in the Indian Education System to provide quality education for all children. The quality initiatives in school education sector, thus, necessitate focusing on school, its performance and improvement. Therefore, a growing emphasis is being placed upon developing a comprehensive and holistic school evaluation system as central to school improvement.



About Shaala Siddhi

The Shaala Siddhi is a major initiative towards comprehensive and holistic school evaluation system as central to improve its quality.

It visualises 'School Evaluation' as the means and 'School Improvement' as the goal.

The School Standards and Evaluation Framework is developed as a comprehensive instrument for school evaluation. It enables the schools to evaluate its critical performance areas against the well defined criteria in a focused and strategic manner.

Professor and Head ,School Standards and Evaluation Unit ,National University of Educational Planning and Administration ,New Delhi -10016, pranatipanda@nuepa.org, ranatipanda@gmail.com
www.shaalasiddhi.nuepa.org

IT Enabled Support to the Shalla Siddhi Programme

(www.shaaalasiddhi.nuepa.org)

The National Programme on School Standards and Evaluation (NPSSE) is supported by a dedicated and interactive web portal. All the Shaala Siddhi programme related documents are available in the web portal for all users.

The web portal has an interactive platform wherein each school can login and submit its self evaluation Dashboard. Similarly External Evaluators have to use the same web portal to submit their report. A consolidated evaluation report can be generated online encompassing both self and external evaluation report.



IT enabled Platform : Major Features of Web portal

- ***Each school can create login ID by using UDISE Code and upload Self evaluation report***
- ***Blocks, Districts ,States and National can create their log in ID and monitor the self evaluation process, generate series of reports and see the progress***
- ***Access to consolidated evaluation reports by parents and public***

Objectives of the session

The major objectives of the session are to develop understanding about the use of IT enabled platform for school evaluation process, reporting and monitoring; to develop competencies on operations and uses of web portal by diverse users; to explain the uses of reports for policy, planning and management of school evaluation for school improvement.

Description of Hands on activities

Participants can be engaged in detailed operation and their uses at all Levels-School, blocks, districts and states. Steps wise demonstration along with explanations and hands on operations will provide opportunities to all the participants to develop good understanding and competencies.

Equipment and Materials needed for the Session

Internet connectivity is the major pre requisite for demonstration. Participants can use their own laptop and mobile for demonstration also.

International ICT Forum Session Outline – ePathshala a Web Portal and Mobile App for eTextbooks

Brief background of the theme

The ePathshala is a joint initiative of Ministry of Human Resource Development (MHRD), Govt. of India and National Council of Educational Research and Training (NCERT) for showcasing and disseminating all educational e-resources including textbooks, audio, video, periodicals and a variety of other print and non-print materials. The platform addresses the dual challenge of reaching out to a diverse clientèle and bridging the digital divide (geographical, socio-cultural and linguistic) offering comparable quality of e-contents and ensure its access free at anytime and anywhere. Students, teachers, educators and parents can access e-books through multiple technology platforms i.e. mobile phones, and tablets (as e-pub) and on web through laptops and desktops (as flip books). ePathshala also allows its users to carry as many books as their device support. Features of these books allow users to select, read, zoom, bookmark, highlight, navigate, share and make notes digitally. The App can be downloaded from Android, iOS, Windows stores. The app interface can be accessed in 15 Languages. The resources includes 610 ePubs, 505 flipbooks and 2472 audios and videos. Currently e-resources are available in Hindi, English, Urdu and Sanskrit. The App was launched by the Honorable Minister of Human Resource Development, Govt of India (GOI) on 7 November, 2015 and till 10 October 2016 the portal has 80,58,179 visitors, the App has a rating of 4.4 out of 5 on Google play store, 3.5 out of 5 on Apple Store, and 4.5 out of 5 on Windows Store. In all 4,12,325 users have downloaded the App from Google Play Store, 27,599 from Apple Store and 11,313 from Windows Store. Also about 4,38,321 total Youtube views are reported.

Objectives of the session

- The session on ePathshala is focused on navigation of the portal and mobile app platform.
- Showcasing and disseminating all educational e-resources
- Providing access to e-resources through multiple technology platforms (Desktop, laptop and mobile hand sets like iPads, tablets, smart phones etc.

Description of the hands on activities

- Navigation through the ePathshala Platform
- Development of eTextbooks

Participants involvement

Participants will be involved in all the activities related to navigation and content creation along with a demo to develop digital textbooks.

Equipment and material needed:

PC/Laptops/Mobile handsets

Educational Video Production and their use in Education

Compiled by

**Dr. Lal Singh, Professor & Head Media Production Division, CIET, NCERT,
Sri Aurobindo Marg, New Delhi - 11016**

The educational video has own features and demands, which have important implication in the process of development, teaching and learning process. The production of educational video programme for effective use in a teaching and learning context involves systematic planning of resources and facilities. A general understanding of the programme production process is including planning, scripting and production of educational video programmes. The evaluation and utilization of final product also have great important.

A video is combined the moving pictures, still pictures, spoken words, text, graphic, visuals, music and sound effects in a way not possible with any other medium. The key role of video is to inform, entertain and educate. The CIET, NCERT is producing the Multimedia, Video and Audio programmes for school students and teachers. Video is a basically visual language which is expressed through the usage of symbols, techniques and presentation styles. Here we shall familiar with the effectiveness of video/ television.

1. Video is a medium of communication:

The television shot has three dimensions: width, height and depth. A television screen has only two dimensions, height and width. But when we look at a scene on the television screen, we also see a third dimension of depth which makes a picture so real. The depth is created by illusion by using a particular type of lens, lighting techniques and placement of objects in a scene. The information obtained visually is more likely to be retained. In the video, the visual serve as the primary source of information and audio helps to explain them.

2. Use of video in education:

The use of video is revolves its three qualities i.e., presentational characteristics, distributional and access characteristics and student aspects. Television was initially used a supplementary tool to help the teachers and students. After that television has revolutionized and used for telecast, video tapes in multiple learning package provided to students and institutions. Video programmes were also used by institutions for training of their personnel.

3. Target Audience:

Who is the audience? this is the first base of any educational video/ programme. We need to know their age group, educational background, needs, access the medium, etc. For this purpose, audience profile prepared by media researchers, using different data collection like interview, surveys and observation techniques. This helps to content planners of video programmes and producers

of programmes.

4. Content selection, programme brief and instructional objectives:

In the first stage to find out the topic and part of that topic will be selected for video programme. In the light of the length of programme in terms of minutes, content will be taken. Generally a content of forty minutes delivered in the class room can be produced of 10 to 15 minutes video programme with the combination of multiple possible resources. The programme brief and instructional objectives can be prepared for the help of script writer.

5. Format, style and pace:

Format of any programme is a very important step of any educational video programme. Format decided in the light of complexity of content, learning objectives; use of programme (broadcast/ cassettes/group viewing/individual viewing) or in the context programme will be used. Documentary/ drama/ docu-drama/ demonstration/ illustrated lecture/ panel discussions/ case-studies/ field trips/ interviews/ features/ magazine etc are the some examples of different formats. The content developers/ planners, scriptwriters and producers have to decide the format. In a video programme more than one format can be planned for effective presentation of the content.

6. Programme structure and visual treatment:

The video is a transient medium comprising fleeting images and sound. In the video programme the stakes are high, the attention span of viewers, programme duration, telecast time, high cost of production all of them are major limiting factors.

A video programme structured in such way that it makes optimum use of television's strength and minimum its weakness. a general framework of structuring educational programme being followed: make audience curious in the beginning of the programme or introduction of programme, what you (students/ learner) will do in such situations, texture of programme , reinforcement, sensitize, conclude and link to the refer context.

Treatment is an approach towards a programme. The treatment outlines what the video programme will explain include idea and thought about the programme. It must have a plan for the introduction, the body or the key points, major issues and these are pulled together with a conclusion. so many drafts will be prepared and finalized the concerned resource providers and finalized the feasible draft.

7. Process of Video Script development:

Script writing involves lot of steps such as programme idea, concept note, script outline, treatment and story board/ note script. After finalization of script, camera script will prepare before shooting script/ television script:

Table: Format for script

Topic	
Series	
Subject	
Target group/ class	
Objective	
Outlines of content	
Name of Script Writer	

Visuals	Audio
What presenter will do? Graphics, text, any material presenter will like to show or viewing form etc.	What presenter will say? Sounds, dialogues etc.

In the table (format for script) one column is labeled “video” and other is “audio”. Programme content and production divided in these major two categories. A script also typed in double and triple space. The video side has shot description and lot of blank space for producer/director to write shots, camera angles, lighting, locations required and other details. The audio side contains the sound and dialogues. The spoken words should be shorter and clear. The word should be related to visuals.

8. Testing and revision of script:

After completion of video script, the first step towards script testing would be the self evaluation of the script, to see whether all the instructional objectives of the programme have been covered. If the lacking in this account, it has to be revised than we have to get it evaluated by experts for content, technical and production value enhancement. The script may also be tested by learners and revised on the basis of their observations and feedback.

9. Production of programme:

Production is a team work involving of many persons including experts in different areas such as content person, script writer, producer, director, cameraperson, sound, scenic design, graphic, recording, editing, etc.

Various equipments are required such as Camera, Microphones, Scenic works, Lights, Audio control, editing console etc.

The production process divided in three major stages:

(a) Pre-Production stage: This stage from idea generation, research on needs of target groups, selection of content, format and style of the programme. Pre-production is planning for the programme including production proposal and budget. Pre-production coordination involves contacting artists and subject experts getting clearances and permission for shooting, preparing shooting schedules, etc.

(b) Production stage: This involve recording of the programme in studio and or outside of studio.

(i) Studio Production: The television studio efforts maximum production facilities. The studio has three major production facilities: studio itself, the studio control rooms and studio support area. The studio is especially designed for these purposes. Its floor for easy movement for camera, adequate ceiling and heights for lights and set design, studio is acoustically treated and provided with large sound proof doors. The studio has three or more cameras. The studio control room has many monitors, speakers, image control (vision mixture), light control panel board, audio console inter communication system for production and engineering personals, etc.

(ii) Outdoor shooting: When a video production happened outside the studio that is field production or outdoor production. Two main types of outdoor production are ENG (electronic news gathering) and EFD (electronic field production). ENG means, covering news stories outside the studio. It offers speed in responding to an event. EFP is used for any field based or location based productions and carefully planned. It is done usually with single camera, however more cameras can also be used in case of major event. For example, we might desire to make a video on the village festival.

(c) Post production stage: Post production comprises editing, mixing of visuals, sound music and sound effects. The video production takes final shape during editing stage. After editing, programme obtained feedback from experts and target groups. After feedback if required modification, programme will be modified. Final cut of programme is called Master Programme and used for distribution of users through various modes of distribution/ access.

Evaluation of video programme is an important and integral part of the process of video design and production. Formative evaluation is undertaken at the formative stage of the programme and suggests the review (script, accuracy of content, proper sequencing, authenticity of information, appropriate use of media and effectiveness of audio visual inputs) of steps were followed during programme development.

Summative evaluation is used to assess the effectiveness or measure the impact the programme after its production and utilization. The results of summative evaluation have implications on decision making for future projects.

References

1. Flagg, B. (1990): Formative Evaluation of Educational Technologies. Lawrence Erlbaum Associates. London
2. Zettle, H. (2000): Television Production Handbook, 7th Edition, Wordsworth Thomus Learning, San Fransisco.

International ICT Forum Session Outline - National Repository of Open Educational Resources (NROER)

Brief background of the theme

The National Repository of Open Educational Resources (NROER) is an initiative of Ministry of Human Resource Development (MHRD), Govt. of India and CIET-NCERT (An Autonomous body set up by Govt. of India) to bring together all digital and digitisable resources across all stages of school education and teacher education. This spans to all subject domains and will be available in all Indian languages. It proposes to use the digital resources to reach out and connect all members of the school community through a variety of events and interactions. The repository will also provide platform for Massive Open and On-line Courses (MOOCs) and on-line forums for different stakeholders. Currently, NROER has more than 21,200 resources of various categories including videos, audios, documents, interactive objects and images. NROER has 22,210 registered users.

Resources are available in about 29 different languages, including tribal languages (Limboo, Lepcha, Bhutia from Sikkim, Kokborak from Tripura, Santhali and Khortha from Jharkhand, Methei from Manipur, Ao and Tenyidie from Nagaland, Garo and Khasi from Meghalaya, Galo from Arunachal Pradesh). The repository hosts concepts from classes VI to XII and will soon span classes I to XII in Environmental Studies, Science, Social Science, Mathematics and Arts education. The resources include textbooks, audio, video, photographs, charts, maps and interactive content. The Hindi version of the platform will also be released shortly.

A steady flow of audio, video and interactive resources has been established from a variety of agencies; State Institute of Educational Technology (SIET) from Kerala, Andhra Pradesh, Maharashtra, Uttar Pradesh, Gujarat and Bihar have shared their collections regularly. Some SCERTs like SCERT Manipur and SCERT Tripura have sent in their audio programmes, SCERT Chandigarh has also contributed bulk resources as a partner. Besides, organisations like CCRT, Vigyan Prasar, Directorate of Adult Education, Gandhi Smriti and Darshan Samiti, Gandhi Heritage Portal, GIET-Gujrat, SIERT-Rajasthan, Amaze Infotainment Pvt. Ltd. and individuals like Arvind Gupta and Vidya Online have contributed a large number of e-Resources as partners to NROER.

Core teams have been set up in each State and UT and Key resource persons are oriented to NROER activities through various training programmes. These teams are actively organizing different state level activities for NROER, particularly translation into their state/local languages.

As a part of this initiative all the text books and resource books of NCERT are digitised into ePub 3.0 and flipbook versions and everyone can access and use these e-books free. Features of these books allow users to select, read, zoom, bookmark, highlight, navigate, share and make notes digitally; in future digitization of all State textbooks will be done and they will be hosted on the platforms of ePathshala and NROER.

Objectives of the session

- This session on National Repository is focused on providing a glimpse of the repository.
- The navigation of the repository will be ensured in order to take a tour of it.
- The registration on NROER will be facilitated.
- The creation and contribution of resources for NROER will be encouraged.

competencies to be acquired

General competency of creating digital content in the form of images, text, maps, concept maps, audio clips and video clips. Also creating animated content with the help of open source software like 'scratch' will be an added advantage.

Description of the hands on activities

- Navigate through the National repository
- Create concept maps and resources for contribution on Repository
- For creation of resources a briefing up on tools like Open shot video editor, Scratch, Audacity, etc. will be given.

Participants involvement

Participants will be involved in all the activities related to navigation and content creation along with contributing them on NROER.

Equipment and material needed

- PC/Laptops
- Digital camera/ Smart phone

Google Apps for Education at Sanskriti School

November 3, 2016

The two-hour session will showcase the use of Google apps for Education (G Suite) and Chromebooks in teaching and learning process.

This will be interactive hands-on session, where the participants will get an opportunity to experience the Google Classroom environment by joining in a demo Classroom along with students of grade 9.

Session will be led by Social Science teachers who will showcase use of Google maps, Google Slides and research tools in context of the curriculum.

Agenda:

Time	Description
9:00 a.m. -9:15 a.m.	Reception of delegates
9:15a.m. - 9:30 a.m	Welcome address by Mrs. Abha Sahgal, Principal, Sanskriti School, New Delhi
9:30 a.m. -10:30 a.m.	Interactive hands on session with Google Classroom. Participants along with grade IX students will attempt assignments, which will require use of Google maps, Google drawing and research. Chromebooks and guest id will be provided for the participants.
10:30am-10:45 am	Interaction with teachers of Sanskriti School
10:45 am - 11:00 am	Tea and refreshments

SCHOOL AUTOMATION SYSTEM (MIS/ERP) of Kendriya Vidyalaya Sangathan

SHAALA DARPAN

Brief background of the theme

Launched by Hon'ble HRD Minister, Government of India, Shaala Darpan of Kendriya Vidyalaya Sangathan is an e-Governance platform for all (about 11,500 Schools) Kendriya Vidyalayas (Central Schools) in the country. It aims to improve quality of learning, efficiency of school administration, governance of schools & service delivery to key stakeholders namely, students, parents, teachers, community and schools. It offers the following:

School Expert System

- For School Staff
- For Students

Online Admissions

- For Parents (Application for Admission)
- For Schools
- For KV Regional Offices
- For Sangathan

Learning Support Platform

- For Students
- For Teachers

Analytics

- For Parents
- For School Principal
- For KV Regional Offices
- For Students
- For Class Teachers
- For Sangathan

Objectives of the session

- This session on KV Shaala Darpan is focused on providing a glimpse of the system.
- The navigation of the MIS/ERP will be ensured in order to take a tour of it.
- The objectives and applications of the system will be showcased.

Competencies to be acquired

General competency of creating accounts on any MIS/ERP are required.

Description of the hands on activities

- Navigate through Shaala Darpan

Participants involvement

Participants will be involved in all the activities related to navigation of Shaala Darpan.

Equipment and material needed

- PC/Laptops

Training material on ICT tools to develop and adapt OER

Authors: Vida Žvinienė, Marius Šadauskas, Airina Volungevičienė, LieDM Association

Contributors: OpenProf partners

Having successfully completed all training material, **you will be able to:**

- set the requirements for ICT tool for OER development/adaptation
- choose ICT tool for OER development/adaptation according the functionality
- develop/adapt OER using selected ICT tool
- choose the license and mark developed/adapted OER with CC license:

Unit 1. Requirements for ICT tools for OER development/adaptation

This Unit focus on requirements for ICT tools for OER development/adaptation. Having successfully completed this Unit, **you will be able to:**

- set the requirements for ICT tool for OER development/adaptation

During Assignment 1 you will set the requirement that will help you to choose the ICT tool for your OER development/adaptation.

1.1 Overview of requirements for ICT tools for OER development/adaptation

OER can include full course, article, textbook, presentation, picture, mindmap, slideshow, animation, music, video, game, test or any other educationally useful materials. There are different ICT tools for developing all these OER, e.g. one tools are used to develop text document and another ones are used to develop video material. That means that before selecting the ICT tool for developing your OER you have to decide what will be the **type of your OER**. The ICT tool suitable for this OER type should be selected. In this training material we will focus on the ICT tools for developing/adapting these OER types:

- document
- presentation
- collaboration
- video/ audio

The next step is to think about the requirements for ICT tool. What **functionality** from the tool do you need in order to develop/adapt your OER? For example, if you are going to develop the slideshow presentation using online tool and already have a draft version in MS powerpoint format, it could be important that the tool would have the function of uploading existing MS powerpoint file function. If you are going to develop the presentation together with your colleagues, you will need a tool allowing collaborate with other people online. Before searching for ICT tool for your presentation you could also think about:

- will you need formatting functions (various text formats, colors, etc.)?
- will you need to add pictures to presentation?



- will you need pictures library where you can find images for your presentation?
Images with Creative Commons licences?
- will you need embedding slideshow presentation to blogs, webpages, etc.?
- would you like that the tool would allow to export slideshow as a PDF, PPT or other formats?
- what other functions of ICT tool do you need?

Another kind of requirements could be set for OER in video format. You could need such ICT tool functions as combining several videos, cutting the video or adding subtitles. In chapter 1.2 you will find the templates for setting requirement for different types of OER.

As you are creating OER you should also think about re-using it. It is important that other people could download and, if licence allows, edit it. Choosing ICT tool for your OER development you should think about **editability** options:

- will the ICT tool allow to download OER in editable version?
- will the ICT tool allow to edit OER online?
- will the ICT tool allow to edit OER for registered users?
- will the ICT tool allow to edit OER without registration
- will the ICT tool allow to edit OER collaboratively

Before choosing the ICT tool for developing your OER you should also think about **usability and accessibility** issues. Otherwise you could select ICT tool that perfectly meets your requirements for functionality, but it is very expensive or too complicated to use. Setting the requirement for the ICT tool you should also take into account:

- is the ICT tool free of charge?
- is it intuitive to use?
- how attractive it is?
- can you add Creative Commons license on your work?
- what operating systems does the ICT tool support?
- is any other requirements for usability and accessibility?

1.2 Setting the requirements for ICT tool for OER development/adaptation

In this chapter you will find the Assignment and templates that will help you to set the requirements for ICT tool.

Assignment 1. Setting the requirements for ICT tools for OER.

The **aim** of the assignment: having implemented this assignment, you will be able to decide on requirements for ICT tool for developing/adapting your OER. This will help to choose the ICT tool later.

Tasks:

- 1) select what will be the type of your OER (document, presentation, collaboration, video/ audio or other)

- 2) set the requirements for functionality of ICT tool and requirements for OER editability. You can use the templates below marking the requirement and writing your comments. If you are developing another type of OER, these templates could serve as an example for you. Using them you can develop your own template for setting the requirement for your OER.
- 3) specify the requirements for accessibility and usability of ICT tool. You can write your comments in the same table (last row of the table)

The result expected.

After you fill in the template provided below, this will be the guidelines for you in order to choose ICT tool for your OER development/ adaptation.

Below you can find the tables that you could use as the templates setting the requirements for ICT tool. There are four templates for different types of OER:

1) Template for DOCUMENT

Requirements for functionality of ICT tool				
Requirements	Yes	Maybe	No	Comment
Formatting document (fonts, colors, spacing, etc.)				
Uploading word document				
Collaboration with other people				
• in real time				
• view history; back to previous versions				
Sharing with other people				
Downloading document (as Word, OpenOffice, .rtf, .pdf, .html)				
Specify other requirements:				
• ...				
• ...				
Requirements for editability of OER				
Requirements	Yes	Maybe	No	Comment
Download (possibility to download				

OER in editable version)				
Online (possibility to edit OER online)				
Limited access (possibility to edit OER for registered users)				
Unlimited access (possibility to edit OER without registration)				
Individual development (possibility to edit OER individually)				
Collaborative development (possibility to edit OER collaboratively)				
Specify other requirements: • ... • ...				
Requirements for accessibility and usability of ICT tool				
Requirements	Yes	Maybe	No	Comment
free of charge				
possibility to add Creative Commons license				
Specify other requirements (intuitive to use, attractive, requirements for OS, etc.): • ... • ...				

Table 1. Template for Document

2) Template for PRESENTATION

Requirements for functionality of ICT tool				
Requirements	Yes	Maybe	No	Comment
Formatting document (fonts, colors, spacing, etc.)				
Inserting images and videos				



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Uploading pptx, ppt presentations				
Collaboration with other people				
<ul style="list-style-type: none"> in real time 				
<ul style="list-style-type: none"> view history; back to previous versions 				
Sharing with other people				
Downloading document (as .pdf, .ppt, .svg, .jpg, .txt)				
Publishing and embedding in a website				
Requirements for editability of OER				
Requirements	Yes	Maybe	No	Comment
Download (possibility to download OER in editable version)				
Online (possibility to edit OER online)				
Limited access (possibility to edit OER for registered users)				
Unlimited access (possibility to edit OER without registration)				
Individual development (possibility to edit OER individually)				
Collaborative development (possibility to edit OER collaboratively)				
<i>Specify other requirements:</i> <ul style="list-style-type: none"> 				
Requirements for accessibility and usability of ICT tool				
Requirements	Yes	Maybe	No	Comment
free of charge				
possibility to add Creative Commons license				

Specify other requirements (intuitive to use, attractive, requirements for OS, etc.):				
• ...				
• ...				

Table 2. Template for Presentation

3) Template for COLLABORATION

Requirements for functionality of ICT tool				
Requirements	Yes	Maybe	No	Comment
Collaborative document creation				
Commenting on documents/photos				
Inviting people to collaborate on project/document/wiki				
Formatting document (fonts, colors, spacing, etc.)				
Uploading documents (Word, PDF, from Google Drive, etc.)				
Exporting document (PDF, Word, to Google Drive, etc.)				
Publishing link to collaborative document				
Chat / messages to other people who is working on collaborative project				
Video conferencing option				
Requirements for editability of OER				
Requirements	Yes	Maybe	No	Comment
Download (possibility to download OER in editable version)				
Online (possibility to edit OER online)				
Limited access (possibility to edit				

OER for registered users)				
Unlimited access (possibility to edit OER without registration)				
Individual development (possibility to edit OER individually)				
Collaborative development (possibility to edit OER collaboratively)				
Specify other requirements: • ... • ...				
Requirements for accessibility and usability of ICT tool				
Requirements	Yes	Maybe	No	Comment
free of charge				
possibility to add Creative Commons license				
Specify other requirements (intuitive to use, attractive, requirements for OS, etc.): • ... • ...				

Table 3. Template for Collaboration

4) Template for VIDEO/ AUDIO

Requirements for functionality of ICT tool				
Requirements	Yes	Maybe	No	Comment
Hosting video/ audio				
Combining multiple videos, audio tracks and images				
Inserting special effects				
Trimming/ lengthening/ cutting				
Adding subtitles (transcribe or translate)				



• Uploading subtitles from the file				
• Downloading subtitles, captions, or transcripts				
• Syncing to Youtube				
Sharing with other people				
Downloading video/ audio				
Publishing and embedding in a website				
Requirements for editability of OER				
Requirements	Yes	Maybe	No	Comment
Download (possibility to download OER in editable version)				
Online (possibility to edit OER online)				
Limited access (possibility to edit OER for registered users)				
Unlimited access (possibility to edit OER without registration)				
Individual development (possibility to edit OER individually)				
Collaborative development (possibility to edit OER collaboratively)				
Specify other requirements: • ... • ...				
Requirements for accessibility and usability of ICT tool				
Requirements	Yes	Maybe	No	Comment
free of charge				
possibility to add Creative Commons license				
Specify other requirements (intuitive to use, attractive, requirements for OS, etc.):				

• ...				
• ...				

Table 4. Template for Video/ Audio

If you are developing another type of OER these tables could serve as an examples developing template for it.

Unit 2. Choosing ICT tool and developing/adapting OER

This Unit focus on presenting an examples of ICT tools for different OER types, suggestions how to choose the tool according functionality and developing OER using selected tool. Having successfully completed this Unit, you **will be able to**:

- choose ICT tool for OER development/adaptation according the functionality
- develop/adapt OER using selected ICT tool

During Assignment 2 you will have to decide which ICT tool you will use for developing/adaptation OER and will present this tool to your pairs. During Assignment 3 you will have to develop/adapt OER using selected tool.

2.1 Examples of ICT tools for different OER types

In the next chapters you will find several examples of ICT tools for development/adaptation OER. Examples are categorised according different OER types: ICT tools for documents, presentations, collaboration and video/ audio. The description of ICT tool, functionality, editability options and instructions how to use are presented.

2.1.1 ICT tools for documents

In this chapter we will overview ICT tools that can be used to develop/adapt OER in document format.



Google Docs

Google Docs allows to create and format text documents online using the browser. All changes are saved automatically. Several people can work on the same document and edit it in the real time. You can grant other people the right to edit document or only to view it and write the comments.

Functionality (Source: <https://support.google.com/docs/answer/49008?hl=en>):

- Upload a Word document and convert it to a Google document
- Add flair and formatting to your documents by adjusting margins, spacing, fonts, and colors — all that fun stuff
- Invite other people to collaborate on a document with you, giving them edit, comment or view access
- Collaborate online in real time and chat with other collaborators — right from inside the document
- View your document's revision history and roll back to any previous version
- Download a Google document to your desktop as a Word, OpenOffice, RTF, PDF, HTML or zip file
- Translate a document to a different language
- Email your documents to other people as attachments

Editability options

Download (possibility to download OER in editable version)	Online (possibility to edit OER online)	Limited access (possibility to edit OER for registered users)	Unlimited access (possibility to edit OER without registration)	Individual development (possibility to edit OER individually)	Collaborative development (possibility to edit OER collaboratively)
yes	yes	yes	yes	yes	yes

Editability

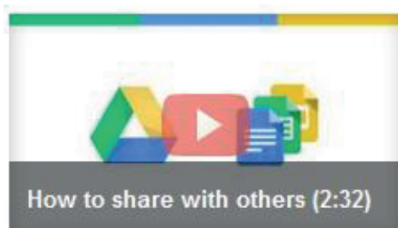
How to use

Here are the instructions how to [Get started with Google Docs](#):

Get started with Google Docs

- [Creating a document](#)
- [Edit and format a document](#)
- [Insert images, links, and comments](#)
- [Publish and print](#)
- [Get started with Google Docs for Android](#)
- [Get started with Google Docs for iPhone or iPad](#)

Here you can find description [How to share](#) Google documents and a short video (2:32) about sharing the document:



2.1.2 ICT tools for presentations

In this chapter we will overview several ICT tools that can be used to develop/adapt OER in presentation format.



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Google Slides

Google Slides allows to create and format presentations online using the browser. All changes are saved automatically. Several people can work on the same presentation and edit it in the real time. You can grant other people the right to edit presentation or only to view it and write the comments.

Functionality (Source: <https://support.google.com/docs/answer/49008?hl=en>)

- Create and edit presentations
- Edit a presentation with friends or coworkers, and share it with others effortlessly
- Import .pptx and .pps files and convert them to Google presentations
- Download your presentations as a .pdf, .ppt, .svg, .jpg, or .txt file
- Insert images and videos into your presentation
- Publish and embed your presentations in a website

Editability options

Download (possibility to download OER in editable version)	Online (possibility to edit OER online)	Limited access (possibility to edit OER for registered users)	Unlimited access (possibility to edit OER without registration)	Individual development (possibility to edit OER individually)	Collaborative development (possibility to edit OER collaboratively)
yes	yes	yes	yes	yes	yes

How to use

Here are the instructions how to [Get started with Google Slides](#):

Get started with Google Slides

Create a presentation

Edit and customize

Insert objects into a slide

View a completed presentation

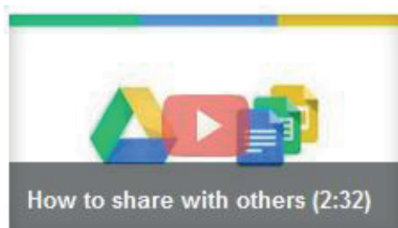
Share, publish, and embed

Get started with the Slides app for Android

Get started with the Slides app for iPhone or iPad

Here are some [Basic information how to work with google slides](#) in PDF format.

Here you can find description [How to share](#) Google documents and a short video (2:32) about sharing the document:



Slideshare with Haiku Deck integration

SlideShare is free tool for your presentations, the registration is needed. You can upload your PowerPoint slides, documents, images or other type of presentations to the platform. You can also upload files from your Google Drive, Dropbox, OneDrive, Gmail, etc. After successful upload of your presentation you can choose which Creative Commons license you will use for your work and will your presentation be private or public. You can share your presentations with your friends, colleagues, embed to your blogs, courses and webpages.

Another great feature of SlideShare is Haiku Deck integration. Haiku Deck is very popular and free tool which allows you to create presentations online. You can use computer or iPad app to create a presentation. Tool is very easy to use, the most valuable feature is huge image gallery consisting of millions images which already comes with Creative Commons licenses so you can use these images for your presentations. You can choose various theme templates which best suits your presentation. Also you can export presentation to Slideshare, PDF or even to PowerPoint for free.



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Functionality:

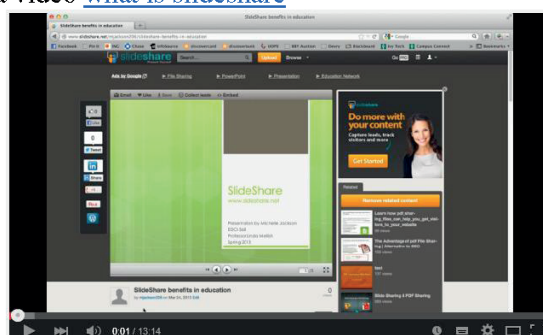
- Create a presentation
- Share on social networks such as Facebook, Google+, etc.
- Embed to websites, blogs, courses, etc.
- Export to other formats (PDF, PPT)
- Images gallery with Creative Commons license

Editability options

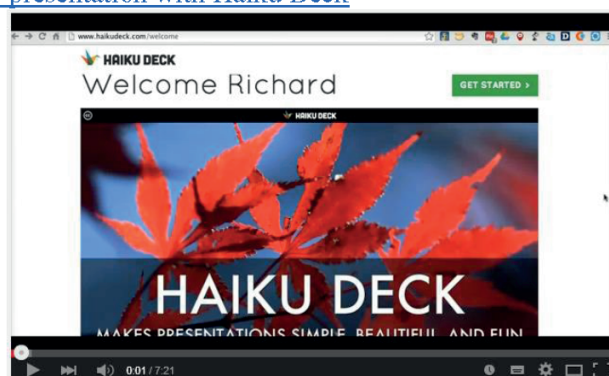
Download (possibility to download OER in editable version)	Online (possibility to edit OER online)	Limited access (possibility to edit OER for registered users)	Unlimited access (possibility to edit OER without registration)	Individual development (possibility to edit OER individually)	Collaborative development (possibility to edit OER collaboratively)
yes	no	no	no	yes	no

How to use

Here you can watch a video [what is slideshare](#)



and [How to create presentation with Haiku Deck](#)



You can watch one more video about [Presentation Tool Haiku Deck](#).



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2.1.3 ICT tools for collaboration

Collaboration tools have the advantage of enabling several people to work on the same document or application. Here are some examples of collaboration tools.

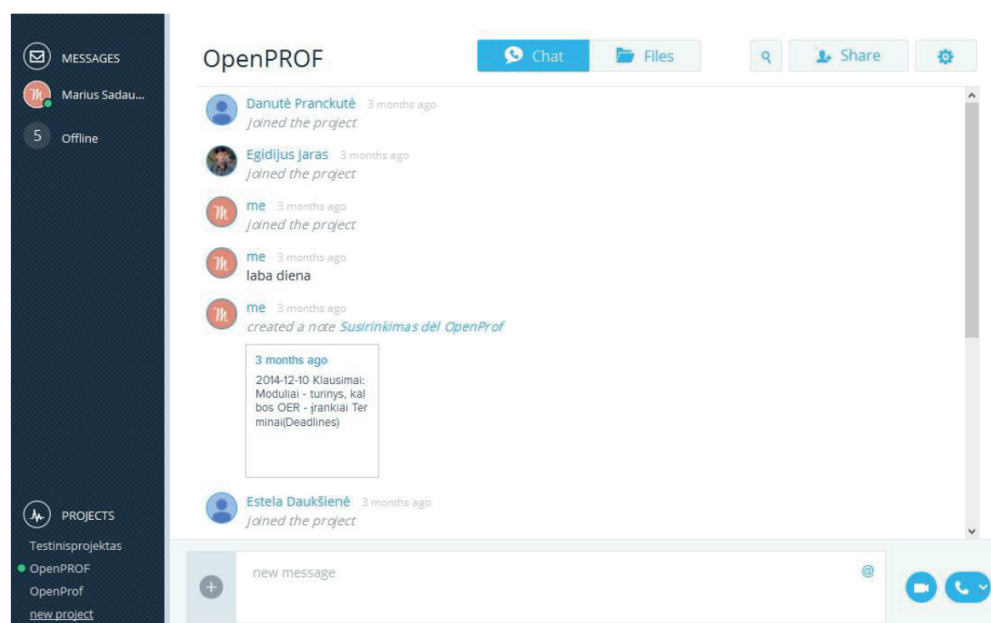


Liveminutes is a tool for organizing collaborative work with your students, colleagues or co-workers. This is online tool available in all browsers. You can sign up to liveminutes.com for free and create a project where you can invite your students, colleagues or whoever you will be working with.

Using this tool you can create, upload, download various types of documents, presentations, pictures, graphs, etc. You can connect Liveminutes with your Google Drive or Evernote account and save your documents there. All project team members can collaboratively create or edit existing documents.

There is possibility to have a video or audio conference directly in browser without any additional software. You can arrange group work with your students and in the same time have a video conference and a collaborative work.

There is private chat and group chat where project members can discuss and follow all project activity (Picture 1). Also all members can write comments on documents, presentations and pictures if they have some concerns, questions or suggestions. You can share document or any other file with person who is not in project group by sending him direct link to liveminutes.com resource you are working on.



Picture 1. Project activity and group chat window.

Functionality:

- Create a project and invite people to it to collaborate
- Create notes
- Collaborative document editing
- Rich text editor
- Add comments to Documents/Pictures
- Upload files (documents/pictures/slides/etc.)
- Download files to computer
- Open documents from Google Drive
- Save documents to Google Drive
- Open and synchronize Evernote document
- Send private message
- Chat with whole project team
- Video conferencing in browser
- Share direct link to document for users who are not in the project

Editability options

Download (possibility to download OER in editable version)	Online (possibility to edit OER online)	Limited access (possibility to edit OER for registered users)	Unlimited access (possibility to edit OER without registration)	Individual development (possibility to edit OER individually)	Collaborative development (possibility to edit OER collaboratively)
yes	yes	yes	no	yes	yes

How to use

Here you can watch a short video [How to work collaborative](#) with Live Minutes



You can also read the presentation with print screens [Using Liveminutes](#):



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<http://www.slideshare.net/msadauskas/using-liveminutes>

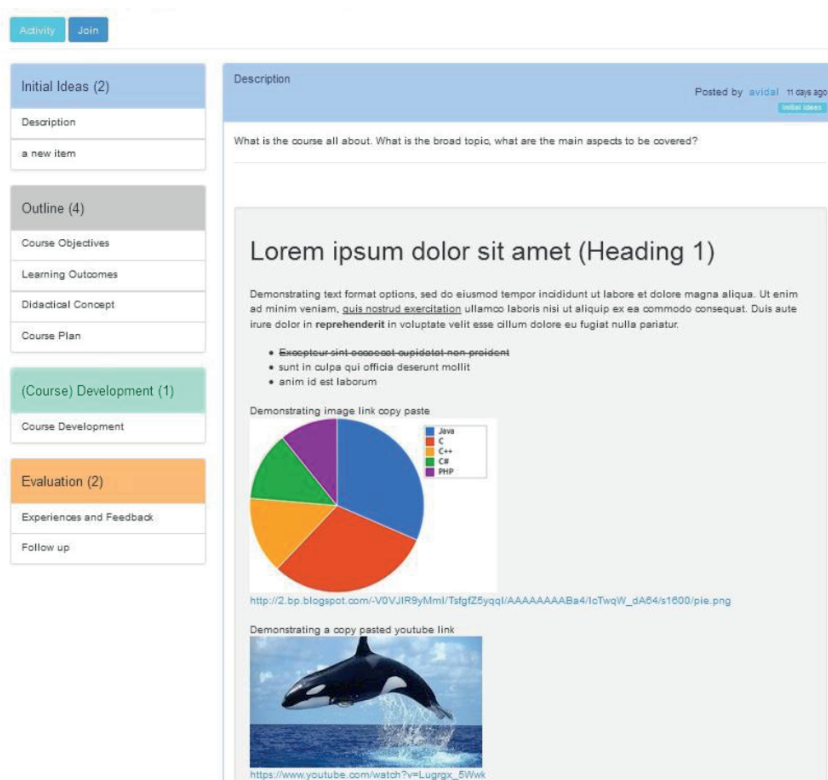
Idea space



Another tool for collaboration is Idea Space, where various scenarios of collaboration can be performed. As description of Idea Space says “This platform is a place to find others to connect and work together on open education from the very beginning when bouncing around ideas to the final outcome – whether this is an open course or open textbook or anything else that helps to open up education.” it is suitable for creating a project, creating training material, OER or performing some kind of group task. For example teachers from different countries, different universities can join this platform, search for idea and if he thinks he would like to contribute he joins this group/idea and participate in creation process. Picture 2 illustrates how idea workspace looks like.

Also there is a repository of OERs where you can search for various OERs and download them: <http://idea-space.eu/repository>

Idea Space is free and can be accessible by address: <http://idea-space.eu/>. This platform is created during LLP project “Open Educational Ideas and Innovations (OEI2)” No. 539990-LLP-1-2013-1-FI-ERASMUS-EQMC. More information about this project can be found at project website: <http://project.idea-space.eu/>



Picture 2. Idea workspace. <http://idea-space.eu/idea/38/workspace>

2.1.4 ICT tools for video/ audio

In this chapter we will overview some ICT tools that can be used to develop/adapt OER in video format.



Wevideo is a tool for video creation using just your computer and the internet. You can use it for free or buy a monthly subscription to get additional features, more space for your videos and exporting minutes. Your video can be exported to Wevideo player, Youtube, Vimeo, Google drive and downloaded as mp4 video file.

Wevideo tool is easy to use. It is based on drag and drop technique and very easy to understand. This tool can be used for various scenarios:

- you can create your own digital story,
- create a beautiful presentation for your students,
- subtitle videos,
- record your voice directly in Wevideo tool,
- other

To create a stunning video you can use a lot of different effects such as ken burns, zoom in, zoom out, sliding, spinning, etc. to create your video more attractive and thrilling. There



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are three different modes for creating your video: *Storyboard*, *Timeline* and *Timeline Advanced*. We suggest using Timeline as it is most practical and popular mode.

Using Wevideo tool you can share your work with other people. In this case your created video can be edited by people who are invited to your project work. This is great way to make a collaborative work or let other people to adapt your video to their own needs.

Functionality:

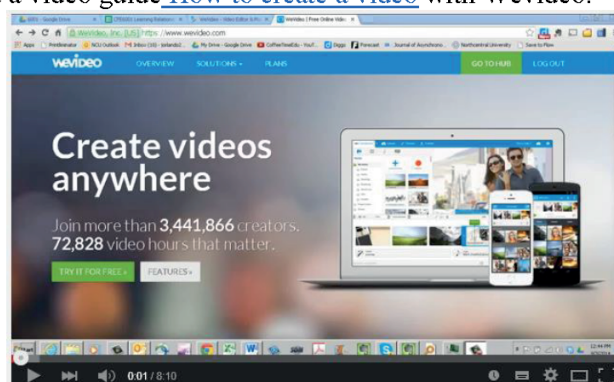
- Host video
- Combine multiple videos, audio tracks and images
- Record voice online
- Insert special effects
- Trimming/ lengthenning/ cutting
- Add subtitles
- Share video with other people (to contribute or adapt your work to their needs)
- Download video
- Publish to various media sites such as Youtube, Vimeo and embedding in a website

Editability options

Download (possibility to download OER in editable version)	Online (possibility to edit OER online)	Limited access (possibility to edit OER for registered users)	Unlimited access (possibility to edit OER without registration)	Individual development (possibility to edit OER individually)	Collaborative development (possibility to edit OER collaboratively)
no	yes	yes	no	yes	no

How to use

Here you can find a video guide [How to create a video](#) with Wevideo:



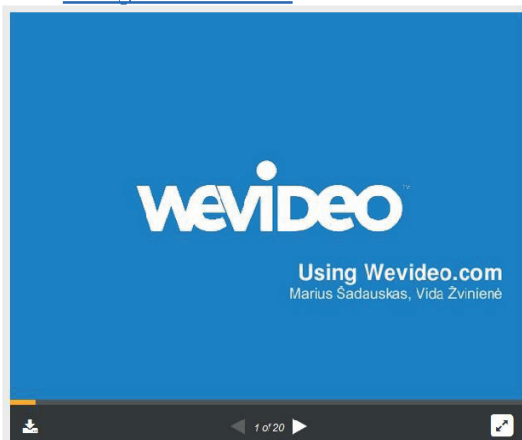
<https://www.youtube.com/watch?v=bRZioKAFPPU>



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Here is a slide presentation [Using Wevideo tool](#):



<http://www.slideshare.net/msadauskas/wevideo-video-tool>



[Amara](#) is free and open source tool to caption and translate your videos. Videos can be transcribed/translated collaboratively. Here you can see a [short video presenting amara tool](#)



Functionality:

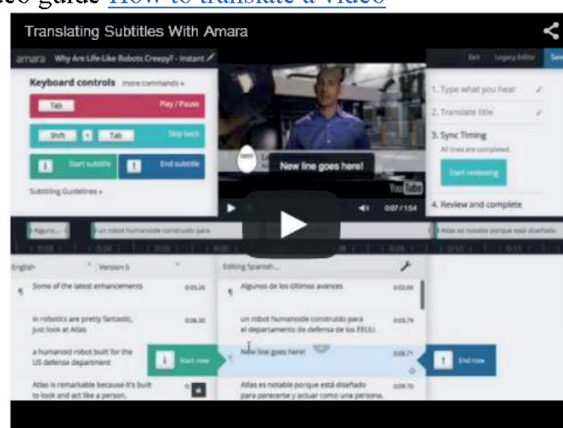
- Translate video
- Transcribe videos
- Download subtitles, captions, or transcripts
- Sync to Youtube
- Collaborate with other people

Editability options

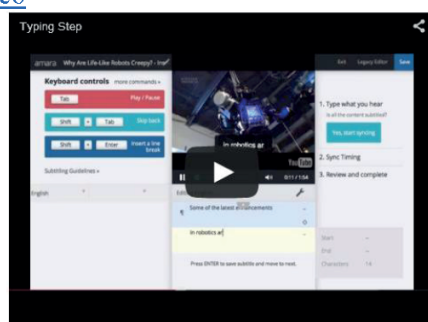
Download (possibility to download OER in editable version)	Online (possibility to edit OER online)	Limited access (possibility to edit OER for registered users)	Unlimited access (possibility to edit OER without registration)	Individual development (possibility to edit OER individually)	Collaborative development (possibility to edit OER collaboratively)
yes	yes	yes	no	no	yes

How to use

You can watch a video guide [How to translate a video](#)










or [How to transcribe a video](#)



You can find more information at [How-tos: Amara support centre](#) webpage

How-tos

-  **How to set up your account**
 To create an Amara account: Go to <http://www.amara.org> and click "Sign In /Sign Up" link on the top-right corner of the page. On Sign In...
 Wed, 15 Oct, 2014 at 5:17 PM
-  **How do I add my videos to Amara?**
 Amara Community To add your video to the site, simply paste in the URL to your video here: <http://www.amara.org/en/videos/create/> If yo...
 Wed, 1 Oct, 2014 at 8:45 AM
-  **How do I submit a video to Amara for subtitling or translation?**
 Amara does not physically store any videos; they are located elsewhere in the Internet (YouTube, Vimeo, etc). To "submit a video" means to enter into t...
 Sun, 12 Oct, 2014 at 2:33 AM
-  **How to add existing subtitles, captions, or transcripts to videos**
 Go to a video page on Amara (example) and find the following text on the left from the video: Already have subtitles for this video? Upload them di...
 Thu, 18 Sep, 2014 at 1:02 PM
-  **How do I download subtitles and translations from a video on Amara?**
 You can download complete or partially done subtitles to your computer in the following formats: SRT (the standard subtitle format supported by mos...
 Wed, 28 Jan, 2015 at 5:51 AM
-  **How to download subtitles, captions, or transcripts**
 Go to a video page on Amara (example) and click a language from the list on the lower left corner of the page. Look for the "download" menu — from...
 Mon, 20 Oct, 2014 at 11:47 AM
-  **Syncing to YouTube**
 Users with personal YouTube channels can allow Amara to sync to YouTube, and it will upload subtitles for you. What gets synced Existing, comple...
 Sat, 24 Jan, 2015 at 2:15 PM

More information how to work with Amara tool available at [Knowlwdgw Base](#) webpage.

2.2 Choosing ICT tool for OER development/adaptation

During Assignment 1 you have set the requirements for ICT tool. Now you have to find the tool which corresponds to these requirements. You can use the tools presented in chapter 2.1 or you to find another one. There are several methods of finding appropriate ICT tool for OER development/adaptation:

- Use **tools that you already know**. Think about the tools that you already know for the development selected type of documents. Review "Requirements for ICT tool" table and think about their functionality. If you'll find the tool using this option you'll save your time, because you will not have to spend time getting know a new tool. If the tools that you already know do not meet your requirement or you want to gain experience using new ICT tool go to one of the further options.
- Use **search engines** (ex.: [Google](#), [Bing](#), [Yahoo](#)) to find ICT tools for selected type of OER development/adaptation. You can use advanced search option (ex.: [Google Advanced Search](#)) to enter your keywords. Use specific keyword phrases to locate the most relevant information.
- Use **Web 2.0 tools databases** to find ICT tools for selected type of OER development/adaptation. Here are some examples of web 2.0 tools databases:
 - [Go2web20 Online tools and applications](#)

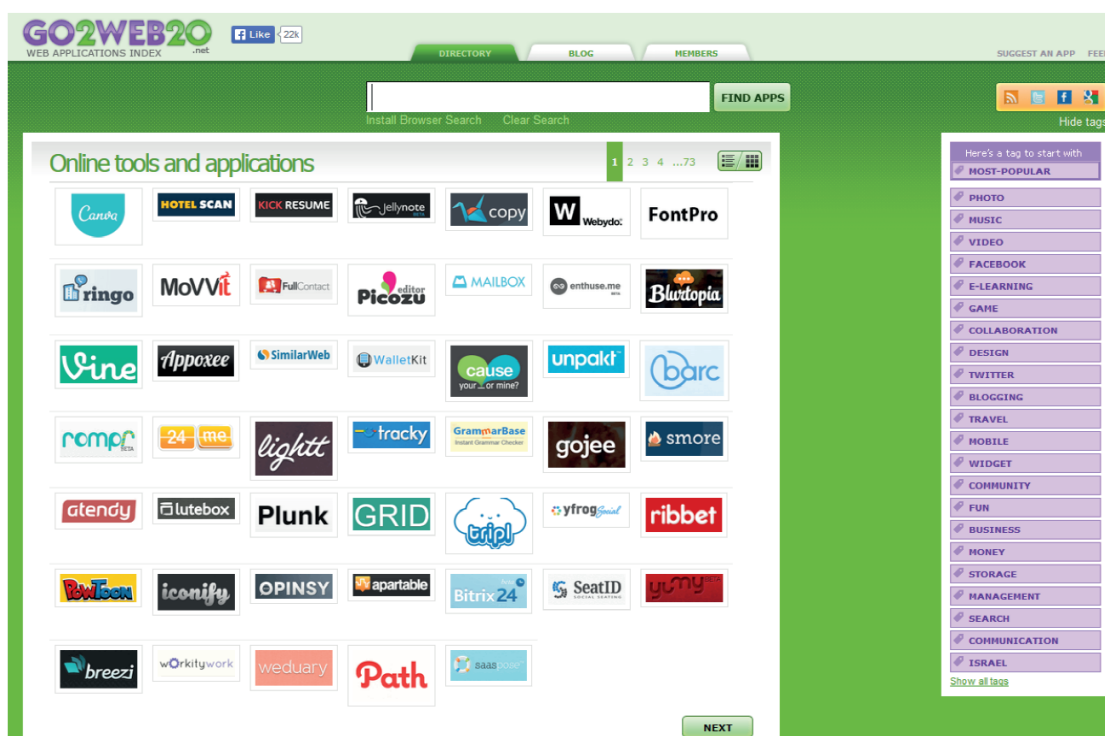


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- [Web 2.0: Cool Tools for Schools](#)
- [ICT with Miss C](#)
- [ICT by Teachers](#)
- [TeachersFirst Edge](#)

ICT tools in such databases usually are provided within the categories and this makes the search easier. In Picture 3 you can see the example of Web 2.0 tools database.



Picture 3. Go2Web20 web applications

Assignment 2 will help you to choose the ICT tool for OER development adaptation.

Assignment 2. Choosing ICT tool for OER development/adaptation

The **aim** of the assignment: having implemented this assignment, you will be able to choose ICT tool for development/adaptation your OER. Using this ICT tool you will have to develop/adapt your OER during the next Assignment 3.

Tasks:

- Find several ICT tools for selected type of OER.
- Evaluate their functionality and editability options (using the document that you filled in during Assignment 1)
- Choose ICT tool that most fits to your needs
- Explore how to use the tool
- Present the ICT tool to your peers.

The result expected.

ICT tool for OER development/adaptation is chosen according the functionality. Chosen ICT tool is presented to peers. Feedback from the audience is received.

After you made the decision on the ICT tool that you will use for developing your OER and explored how to use it it is time to develop/adapt OER.

Assignment 3. Developing/adapting OER using ICT tool

The **aim** of the assignment: having implemented this assignment, you will be able to develop OER using chosen ICT tool.

Using the ICT tool that you have chosen during the Activity 2 develop/adapt your OER.

The result expected.

OER is developed/adapted using ICT tool.

Unit 3. Licensing OER using Creative Commons

(this Unit is adaptation of "[Marking your work with a CC license](#)", "[Publish](#)" and "[Best practices for attribution](#)" all by Creative Commons, used under [CC BY](#))

This unit focus on licensing your OER with Creative Commons. Having successfully completed this Unit, you **will be able to**:

- to choose the specific CC license to developed/adapted OER
- to mark developed/re-used/adapted OER with CC licence

During Assignment 4 you will choose the licence for developed/adapted OER and during Assignment 5 you will mark your OER with the chosen license.

3.1 Creative Commons licensing types

During Activity 3 you have developed your educational resource. In this chapter we will learn **how to make it Open**. The key to making your educational resource open is the **License**. Creative Commons is the most popular and easy to use licensing system for OER. Standard Copyright © license is very strict and is not suitable for OER which intention is to be Open and free to use, adapted and/or shared with other. That is why Creative Commons licenses are used to license OER's. Creative Commons changes standard "All Rights Reserved" to "Some Rights Reserved" where creator chooses how his work can be used.

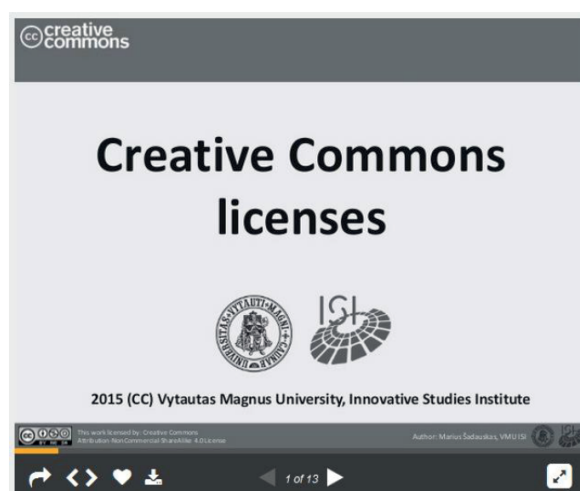
In the following short video developed by Creative Commons you will learn about the rules of using materials available on the internet under Creative Commons licenses.

What is Creative Commons (video)



<https://www.youtube.com/watch?v=AeTlXtEOp1A>

Or you can view slideshow [Presentation about Creative Commons and licenses types](#) to get the information about Creative Commons and licensing types:



<http://www.slideshare.net/msadauskas/creativecommons-licenses-types-and-licensing>

There is six main licenses types which allows creators to publish their work, however if they are using someone else work and it is licensed as ShareAlike, they have to follow this and share their work with the same license type.

Assignment 4 Choose the license for developed/adapted OER

Choose the license for your developed/adapted OER according to provided training material, video presentation and slideshow.

Remark: If your work is an adaptation of a work licensed under either [CC BY-SA](#) or [CC BY-NC-SA](#), then your derivative work must be made available under the **same license** as per the ShareAlike condition.)

The result expected.

The specific CC license for developed/adapted OER is chosen.

3.2 Marking your OER with CC licence

During the Assignment 4 you have chosen a CC license for your OER. Now you have to mark your OER that people would know it. A good rule is to use the acronym ALM, which stands for Author, License, Machine-readability:

- **Author** (who is the author of developed OER and should be credited using it?)
- **Licence** (name the specific CC license OER is under and **link** to it), eg. Creative Commons Attribution 4.0 License with a link to <http://creativecommons.org/licenses/by/4.0/>
- **Machine readability** (allows search engines and software systems to detect which CC license your OER is under). You can use [license chooser tool](#), to get the machine-readable html code, which you can paste into web pages. You can also



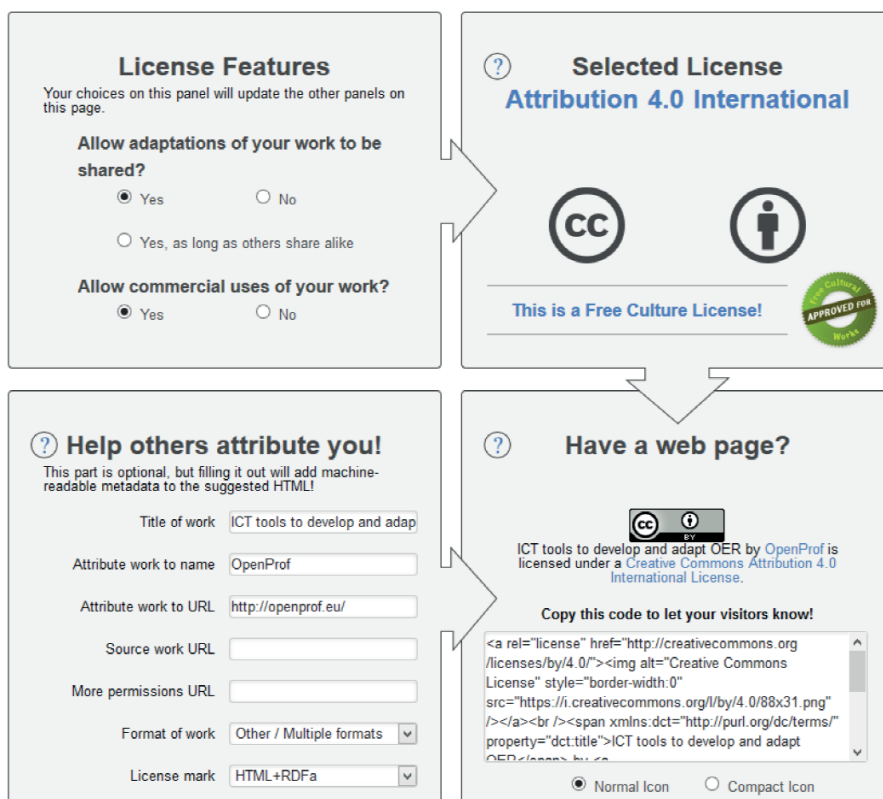
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upload your OER to a content sharing platform that supports CC licensing and takes care of the machine-readability.

***Note:** when you add a CC license to your work, you are only granting permissions to the rights you hold in the work. So if your work is a derivative of another creator's CC-licensed work, or otherwise incorporates third-party content under fair use or other exceptions, then you should make a note of that for your users. Your CC license only ever covers the rights you have in the content you create, and never other content by third parties.*

You can use the tool <http://creativecommons.org/choose/>, which will help you to licence developed OER.



<http://creativecommons.org/choose/>

- 1) In the "License Features" panel select your answer to the questions: "Allow adaptations of your work?" and "Allow commercial uses of your work?". Your choices in this panel will update the other panels of the tool.
- 2) The "Selected License" panel displays information about the license that was described in the "License Features" panel. Changing the values in the "License Features" panel will update the information displayed here.
- 3) Filling "Help others attribute you" part is optional, but filling it out allows people coming to the license deed from your page to see information about how to



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attribute your work. It will add machine readable metadata to the suggested HTML and allows search engines to index additional information about your work.

- 4) The HTML provided in “**Have a web page**” panel may be pasted into your website to display which license applies to your work, as well as attribution information. The HTML combines information provided in the "License Features" panel and the "Help others attribute you!" panel. The HTML also contains RDFa metadata, which allows search engines to accurately determine which license your work is under, and how you want to be attributed.


Below you can find some examples of how to mark your OER with the CC license.

Example: Website

Copy and paste the HTML code into your webpage or website. You can edit the descriptive text to suit your needs.

Example	Analysis
 ICT tools to develop and adapt OER by OpenProf is licensed under a Creative Commons Attribution 4.0 International License .	<p>Author: clearly specifies that OpenProf is the party that should be credited</p> <p>License: clearly specifies the CC BY license with a link.</p> <p>Machine readability: yes (copied and pasted code from the license chooser)</p>

If all of the resources you are publishing on a single website are licensed under the same CC license, it makes sense to paste the HTML code into your website's template (e.g., in a footer or sidebar area). After saving the template, the chosen license information should appear everywhere on your site. Whether you add license information to a single page or an entire site, once live on the Internet, the license information will be displayed and the machines will be able to detect the license status automatically.

Example	Analysis
 Except where otherwise noted, content on this site is licensed under a Creative Commons Attribution 4.0 International license .	<p>Author: Since the license is for the CC website as a whole, which includes multiple authors, one attribution party is not specified. Instead, it is clarified in the Terms of Use (linked in the footer on the left) who owns what content.</p> <p>License: The specific CC license is noted (CC BY) and linked.</p> <p>Machine-readability: yes (copied and pasted code from the license chooser)</p>

Example: Document

For documents that are meant to be shared offline, use a title and/or copyright page to include the copyright notice and CC license information. You can obtain suggested text using the license chooser. In the 'Help others attribute you!' box, select 'Offline' in the

drop-down menu for 'License mark'. Instead of html, you will receive the following text which you can edit as needed:

? Help others attribute you!
This part is optional, but filling it out will add machine-readable metadata to the suggested HTML!

Title of work

Attribute work to name

Attribute work to URL

Source work URL

More permissions URL

Format of work

License mark


Non-digital works?

Downloadable license graphics.
How to mark video and other media formats.

To mark a document not on the web, add the following text to your work:


This work is licensed under the Creative Commons Attribution 4.0 International License. To view a copy of this license, visit <http://creativecommons.org/licenses/by/4.0/>.

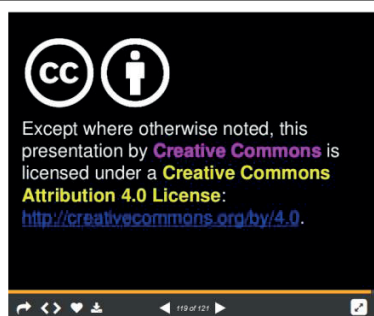
You can also download the corresponding CC license icon at [CC downloads page](#).

Example	Analysis
 OpenProf, 2015 <p>“ICT tools to develop and adapt OER” is licensed under the Creative Commons Attribution 4.0 International License. To view a copy of this license, visit http://creativecommons.org/licenses/by/4.0/.</p>	<p>Author:</p> <p>License: The specific CC license is noted (CC BY) and linked.</p> <p>Machine-readability: no, it's offline</p>

Example: Presentation

Below there are two good examples of licensing presentation. The slide of a first example appears at the end of Jane Park's presentation called "[Creative Commons Version 4.0 for Education](#)" at Slideshare. The slide of the second example appears at the end of Jane Park's presentation called "[Creative Commons for TAACCCT Grantees](#)" at Slideshare.

Example	Analysis
	<p>Author: “by Creative Commons”</p> <p>License: The specific CC license is noted (CC BY) with a link provided.</p> <p>Machine-readability: yes, because it was uploaded to Slideshare, a slide-sharing platform that supports CC licensing.</p>



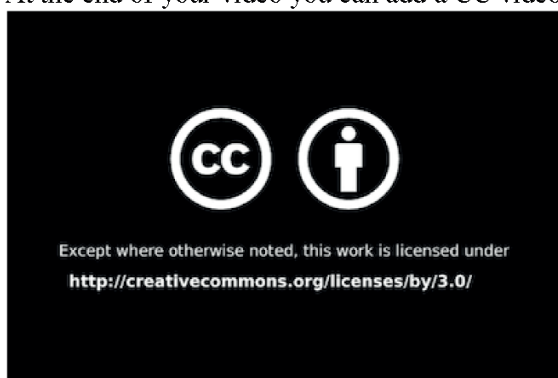
Author: "Except where otherwise noted, this presentation by Creative Commons"

License: The specific CC license is noted (CC BY) with a link provided.

Machine-readability: yes, because it was uploaded to Slideshare, a slide-sharing platform that supports CC licensing.

Example: Video

At the end of your video you can add a CC video bumper for a 2-5 second copyright frame:



Noting third-party content in your work

You can use CC-licensed materials as long as you follow the license conditions. One condition of all CC licenses is attribution. A good rule is to use the acronym TASL, which stands for Title, Author, Source, License:

- **Title** (what is the name of the material?) *(if provided)*
- **Author** (who owns the material?)
- **Source** (where can I find it?)
- **License** (how can I use it?) - name specific CC licence and provide link to it

Here is a photo. In the table below you can find some examples of how people might attribute it.



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Examples of attribution

Ideal attribution	Pretty good attribution	Incorrect attribution
" Creative Commons 10th Birthday Celebration San Francisco " by tvol is licensed under CC BY 2.0	Photo by tvol / CC BY	Photo: Creative Commons
<p><i>Because:</i> Title: "Creative Commons 10th Birthday Celebration San Francisco" Author: "tvol" - linked to his profile page Source: "Creative Commons 10th Birthday Celebration San Francisco" - linked to original Flickr page License: "CC BY 2.0" - linked to license deed</p>	<p><i>Because:</i> Title: title is not noted (it should be) but at least the source is linked. Author: "tvol" Source: "Photo" - linked to original Flickr page License: "CC BY" - linked to license deed</p>	<p><i>Because:</i> Title: title is not noted. Author: Creative Commons is not the author of this photo. Source: no link to original photo. License: There is no mention of the license, much less a link to the license. "Creative Commons" is an organization.</p>

Publishing OER at CC-enabled content sharing platforms

One way to increase visibility and access to your OER is to share it with an existing community. Many content platforms have already enabled CC licensing, making it easy to indicate the license along with other information, such as who to attribute. Here are some examples of publishing platforms categorized by media type:

Media type	Content sharing platform	Description and publishing instructions
Document		Scribd is a community for uploading and sharing documents that has enabled CC licensing. How to publish on Scribd
Presentation		SlideShare is a community for sharing presentations, documents, and PDFs under CC licenses. Various professionals are linked through sub-communities via LinkedIn, Facebook, and Twitter. How to publish on SlideShare
Video		Vimeo is a high quality video-sharing website for creators that has enabled CC licensing. How to publish on Vimeo
		YouTube is a popular video-sharing platform that has enabled the Creative Commons Attribution (CC BY) license as an option for creators to license their work when uploading their videos. YouTube has created a tutorial on how to mark your video as CC BY when uploading videos to its platform at http://www.youtube.com/t/creative-commons .



Audio		SoundCloud is a music and audio sharing community that allows artists to upload its works under the full suite of CC licenses. Its set of tools integrate nicely across the web, with adoptions from well known artists and labels. How to publish on SoundCloud
		Jamendo is a music platform offering artists the ability to promote, publish, and be paid for their music made available for download under Creative Commons and the Free Art licenses. How to publish on Jamendo

Table 5. CC-enabled content sharing platforms

You can find more CC-enabled Content Directories [here](#).

Assignment 5 Marking developed/adapted OER with CC license

The **aim** of the assignment: having implemented this assignment, you will be able to mark developed/adapted OER with CC licence.

You can use [license chooser tool](#) to get suggested text and/or html code. Marking your OER, please, take into account:

- Author
- Specific CC licence with link to it
- Machine readability (*if applicable*)

The result expected.

Developed/adapted OER is marked with CC licence. Author of OER and specific CC licence with link to the description is provided.

ANNEXURE 7

LIST OF RESOURCES DISSEMINATED

1. A live DVD of GNU/LINUX based on Ubuntu Studio 16.04 with specially curated packages of education titled 'Learning Studios V.5' Packaged by Gnowledge Lab, Homi Bhabha Centre for Science Education, Tata Institute of Fundamental Research, Mumbai, India
2. **Teaching speaking, listening and writing** by Trudy Wallace, Winifred E. Stariha and Herbert J. Walberg, Educational Practices Series-14, International Academy of Education, International Bureau of Education.
3. **Using new Media** by Clara Chung-wai Shih and David E. Weekly, Educational Practices Series-15, International Academy of Education, International Bureau of Education.
4. **Effective pedagogy in mathematics** by Glenda Anthony and Margaret Walshaw, Educational Practices Series-19, International Academy of Education, International Bureau of Education.
5. **Teaching other languages** by Elizabeth B. Bernhardt, Educational Practices Series-20, International Academy of Education, and International Bureau of Education.
6. **Principles of instruction** by Barak Rosenshine, Educational Practices Series-21, International Academy of Education, International Bureau of Education.
7. **Understanding and facilitating the development of intellect** by Andreas Demetriou and Constantinos Christou, Educational Practices Series-26, International Academy of Education, International Bureau of Education.
8. Booklet of **National ICT Award for School Teachers 2015** by Department of School Education and Literacy, Ministry of Human Resource Development, GOI
9. **NCERT Brochures**
 - Central Institute of Educational Technology (CIET)
 - Curricula for ICT in Education
 - NROER
 - E- Pathshala
 - SWAYAM- MOOCs Platform
 - SWAYAM PRABHA- Educational television programmes of NCERT
10. Pen Drive having the resources (Handouts, Presentations, Photographs, Videos) of forum.

FACILITATORS OF THE FORUM



Ms. Abha Sahgal



Dr. Airina Volungevičienė



Prof. Amarendra P. Behera



Prof. Anupam Ahuja



Dr. Badar Al Assar



Ms. Bani Paintal Dhawan



Dr. Clarisse Lima



Mr. Dimane Mpoeleng



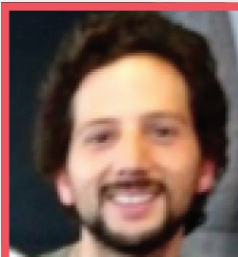
Mr. Faisal Alinasser Al
Busa'idi



Ms. Inas Mohamed Sobhy



Dr. G. Nagarjuna



Mr. Jack Fermon



Ms. Karen Walstra



Prof. Lal Singh



Dr. Margarita Teresevičienė



Mr. Masome B.T. Rebaone



Dr. M'hammed Abdous



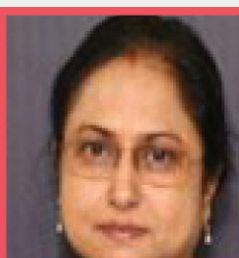
Dr. Natalia Amelina



Dr. Pranati Panda



Mr. Ricaud Auckbur



Prof. Uma Kanjilal



Dr. V. Vijayalakshmi

International Forum on Adopting an ICT Perspective to Education and Learning

October 31st to November 4th, 2016 | New Delhi, India



For further information contact:



Central Institute of Educational Technology
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