Quadrant-I   (e-Text)

Details of Module and its structure

Module Detail	
Subject Name	Education
Course Name	ICT in Education
Course Code	EDU504
Module Name/Title	*ICT for self-directed professional development: web conferencing, role of OER (open educational resources) and MOOC.*
Module Code	IIE019
Pre-requisites	……………………
Learning Outcomes	After going through this lesson, the learners will be able to: 1. Explain the meaning of Information and Communication Technology (ICT). 2. Discuss the concept of Teacher Professional Development. 3. Highlight the role of ICT in Teacher Professional Development. 4. Elaborate the concept of WEB Conferencing. 5. Enumerate the advantages and disadvantages of WEB Conferencing. 6. Explain the meaning of Open Educational Resources (OER) 7. Give the importance of Open Educational Resources (OER) 8. Mention various OER initiatives 9. Explain the concept of Massive Open Online Course (MOOC) 10. Classify MOOCs 11. Enumerate the advantages and Barriers of MOOC
Keywords	Web conferencing, Open educational resources, MOOC

1. Development Team

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Contents

1.0 Introduction

ICT is expertise that supports actions concerning information. These actions incorporate collecting, dealing with, storing and presenting facts. Gradually these actions also involve association and communication. Hence IT has become ICT: information and communication technology. Some underlying principles are;

Technology does not exist in isolation

- ICT contributes at various points along a line of activity

- ICT is used in activities – the ICT use depends on the activities

- The major outputs of educational activities are information, skill and products

- The output should be of use to the users (self and others)

What is a useful concept of ICT?

It depends on the local way of life and the particular ICT available and how it is configured and managed. The understanding, organization and composition of the available technology might differ from the concept of ICT

- a collection of equipment and devices used for particular tasks, eg, publishing, course delivery, transaction processing...

- an organised set of equipment (like a 'workshop') for working on information and communication

- components of included arrangements of devices, tools, services and practices that make possible information to be collected, processed, stored and shared with others

- Components in a comprehensive system of people, information and devices that enables learning, problem solving and higher order collaborative thinking, that is, ICT as key elements supporting a (sharable) workspace.

2.0 ICT AND EDUCATION

All governments intend to provide the most inclusive education for their citizens within the constraints of obtainable financial support. Because of the

central position of ICT in recent societies, its beginning into secondary schools will be on top priority on any political agenda.

The curriculum is designed to be able of implementation throughout the world to all secondary age students. The programme of teacher professional development relates closely to the ICT curriculum, and mainly to the phase of development that schools have reached with respect to ICT.

3.0 TEACHER PROFESSIONAL DEVELOPMENT - CONCEPT

Teacher Professional Development (TPD) is *'a systematized, initial and continuous, coherent and modular process of professional development of educators in accordance with professional competency standards and frameworks'.* Teacher professional development would also consist of guidance in the revision to the progress of change of the profession of teachers and managers of education systems.

From the definition we comprehend that it consists of organized actions with apparent function. The purposes are synchronized with the requirements of teachers that crop up from time to time. With the progression of specialized practice, the professional ability standards and frameworks that are to be developed in harmony with the philosophies that direct the educational theory and practice. All these would happen on a continuous but in modular process, but always coherent when seen together.

The teacher professional development is now a developing area in teacher education. There are different models that are in practice for this purpose. One model proposed by Hart J (2010) that speaks of workplace learning looks useful to understand various avenues for teacher professional development in the context of ICT.

In other words, professional development in the context of ICT can be put in three broad headings, namely

Learning How to use ICT

Learning through ICT

Integration of ICT in teaching and teacher learning

4.0 WEB Conferencing

Web conferencing allows us to connect and converse in synchronized with individuals in diverse locations through internet. It allows individuals to reach in a conversation crossing state, national and international boundaries, crossing different time zones. Web conferencing combines graphics, such as Power Point Presentations, with voice and/or video. It also includes a range of interactive tools such as polling/voting, chat and a 'hand raising' feature to show that you have a question or comment. It also includes document sharing, a whiteboard and web surfing characteristics. As a participant, we see information on our computer screen and listen to the presenter and other participants through telephone or internet.

No extra equipment is necessary to organize a web-conference. A computer to browse and relatively high speed internet connectivity like broadband are adequate. Participants are provided a web address. Participants can register and join the session. Web conferencing combines the power of visuals with the voice and has the advantage of being within reach of anyone having an Internet connection.

Web conferencing is dissimilar from webcasting. Webcasting refers to a session which is recorded and streamed to participants at a time of their preference. Hence webcasting does not take place in actual time. A live web conferencing session can be recorded and provided as a webcast after the event. Web conferences are frequently referred to as webinars, a term derived from the combination of web and seminar. Web conferencing is most effective when used with individuals who are in different locations. The interactive features are designed to permit individuals to respond.

4.1 Meaning of web conferencing

Web conferencing is a broad term which loosely defines the different types of online collaborative services offered to enable businesses to hold meetings online. It is a type of real-time communication through which multiple users, all connected to the internet, are capable to see the same screens at the same time on their web browsers.

When collaborators are spread across different locations and need to hold a meeting or present a project, they can hop online to one of the many virtual

solutions which exist to facilitate and organise remote exchanges. Web conferencing acts as a communication platform which increases productivity and eliminates the need for expensive and time-consuming business meeting travel. It provides a synchronized, multipoint, online solution to communication and allows individuals based in different locations to interact with each other online.

4.2 Advantages of web conferencing

1) Save money and time – The days of spending hours on trains or planes to get to a business meeting are s gone. There is no longer a need to pre-plan business meetings weeks in advance, organise hotel rooms, worry about travel fees and create expenditure reports.

2) Increased productivity – Pre-planning and scheduling any business meeting can take a lot of time. Having to book rooms and wait for invitees to reply as to whether or not they will be able to make it, then rescheduling due to clashes can all take up a lot of time

3) No location fees – As if the costs of travelling to meetings weren't high enough, booking the meeting rooms themselves can also carry a hefty fee. Web conferencing can be a huge relief for businesses as meetings can be held from any location with an internet connection as long as there is no significant background noise.

4) File and screen sharing – With file and screen sharing available with almost every web conferencing provider, making sure that everyone is literally on the same page throughout a meeting has never been easier. Web conferencing allows colleagues to share PowerPoint presentations for instance, so that when a speaker is referring to a particular slide, they can rest assured that everyone is looking at the same thing and knows exactly what it is they mean

5) Better customer services – The key to excellent customer service is based on the promptness of response after a client lodges a complaint. However, time and location constraints can make it difficult for businesses to provide clients with the immediate response they deserve. Web conferencing will allow

customer service personnel to be reached instantly, providing them with a way to resolve issues as soon as they are raised.

6) Improved employee training – For companies where ongoing employee training is essential, finding the time to travel to multiple training days can prove tricky. Web conferencing allows employees to come together online and access the same training material at a time which suits them.

7) Flexibility – Web conferencing is the perfect solution for holding those impromptu meetings that are so desperately needed when an unexpected issue arises which needs immediate attention.

4.3 Disadvantages of web conferencing
1) Not all web conferencing is free – Not all web conferencing platforms are free of charge. Whilst web conferencing will clearly reduce the costs associated with business travel, it isn't always entirely free of charge.

2) It can be less personal than face-to-face meetings – Clearly sitting in front of a screen on webcam to someone will not have the same personal touch that sitting around a table with them in person will

3) Connectivity issues – Whilst the requirements to host a web conference are extremely simple (essentially all you need is an internet connection and browser), sometimes internet speeds or connectivity issues may cause problems

5.0 Open Educational Resources (OER)
Open Educational Resources (OER) are teaching, learning and research materials that you may freely use and reuse, without charge. That means they have been authored or created by an individual or organization that chooses to retain few, if any, ownership rights. For some of these resources, that means you can download the resource and share it with colleagues and students. For others, it may be that you can download a resource, edit it in some way, and then re-post it as a remixed work.

Open Educational Resources (OER) can be 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.

5.1 Defining open educational resources

The term open educational resources was first used at a conference hosted by UNESCO in 2002, defined as "the open provision of educational resources, enabled by information and communication technologies, for consultation, use and adaptation by a community of users for non-commercial purposes" (Johnstone, 2005).

The definition of OER now most often used is: "open educational resources are digitised materials offered without restraint and explicitly for educators, students and self-learners to use and reuse for teaching, learning and research". To clarify further, OER is said to include:

• **Learning content**: Full courses, courseware, content modules, learning objects, collections and journals.

• **Tools:** Software to support the development, use, reuse and delivery of learning content, including searching and organisation of content, content and learning management systems, content development tools, and online learning communities.

• **Implementation resources:** Intellectual property licences to encourage open publishing of materials, design principles of best practice and localise content.

5.2 Educational

The term "educational" also needs to be clarified The purpose of using OER in education is of course to enhance learning, notably a kind of learning that enables the development of both individual and social capabilities for understanding and acting. It is well established that OER are also used for informal or non-formal learning outside formal educational settings. It is sometimes argued that to acknowledge and strengthen the importance of this role of OER, the term "education" should be replaced by "learning" and a better term would be "open learning resources".
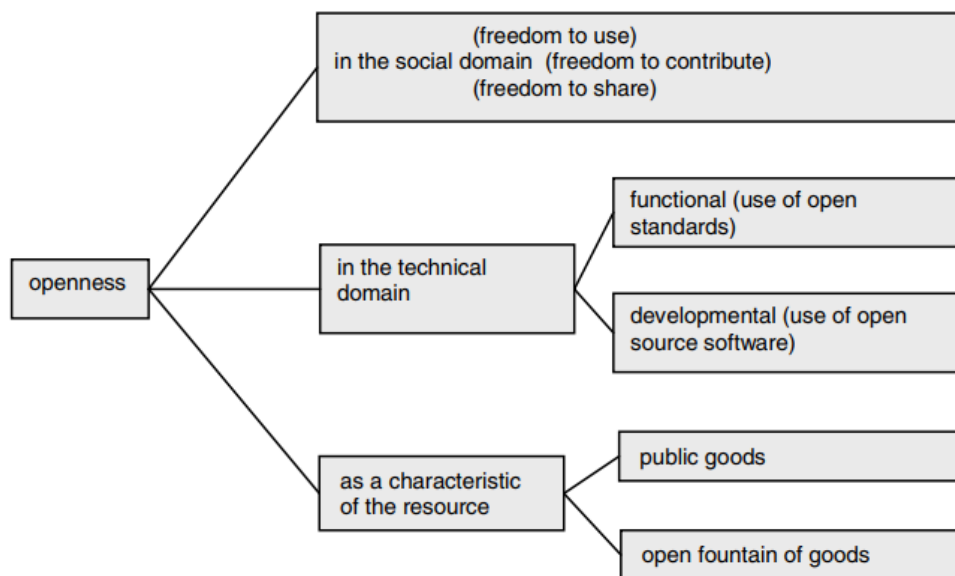
5.3 Resources

The dictionary definition of "resource" is a stock or supply of materials or assets that can be drawn on in order to function effectively. Digital resources, which can be copied and used without destroying the stock, are non-rival or renewable resourcesIn the context of computer-aided teaching and learning, resources are often understood as learning content that can be stored in a digital repository as a text, audio or video file. This view might in some cases be problematic, such as when different kinds of social software are used for discussions, cooperation and help and advice as part of the learning process. In such cases it is the flow or the automatically generated service rather than the stock that constitutes the source of learning.

To sum up it is argued here that "open resources":

- Are sources of services that do not diminish their ability to produce services when enjoyed.
- Provide non-discriminatory access to the resource.
- Can be adjusted, amended and shared.

Source: http://www.oecd.org/education/ceri/38654317.pdf

5.4 Importance of Open Educational Resources

Following are some of importance of OERs.

- OERs are useful in improving education across the globe.

- They offer free access to some of the world's best courses.
- OERs allow us to bring the excellent teaching learning materials in to our education system
- They offer equal access to knowledge and re-usability.
- They provide self-paced learning.
- They offer flexibility in study time i. e. any where and any time the learner can study.
- Provide access to huge amount of study materials.
- Help in enhancement of content knowledge.
- Accessible and affordable for all.
- OERs are adaptable and allow others to reproduce them for their use.
- Help in advancing knowledge and widening participation.
- Help in one's own professional advancement.
- Promote life long learning.
- Bridge the gap among formal, informal and non-formal education.
- Offers for sharing and reusing resources.
- OER promote informal learning.

National Repository of Open Educational Resources (NROER)

NROER is launched by the Ministry of Human Resource Development (MHRD), Government of India. NROER is developed as a solution to address the challenges faced by the education sector of our country. It aims at reaching the unreached and prioritizes to extend education to all. It is a collaborative platform involving everyone who is interested in education. It offers resources for all school subjects and grades in multiple languages. It brings together all the digital resources for a school system such as

educational videos, audio, images, documents and interactive modules and also allows you to contribute your own resources. NROER enables access to a library from where teachers can access audio, videos, learning objects, images, question banks, activities/presentations and more related to the concepts of the subject that they teach. They can also upload resources which are subject to review by experts. In addition to this, NROER allows teachers to download, share, comment and rate media resources.

Objectives of NROER are:
- To store, preserve and provide access to a variety of digital resources to students and teachers.
- To engage the teacher community in the development and sharing of digital resources.
- To improve the quality of the education system of the country.
- To facilitate teachers to create and share contextual teaching and learning resources.
- To celebrate innovations in resource creation.

Features of NROER are:
- Open access to those who want to access the resources.
- Resources are available free of cost.
- Users can share the Resources.
- Resources are available in the form of discrete chunks not as bulk.
- All resources on any particular subject or topic one desires are present in one place and are comprehensive.
- Resources may be contextualized.
- Resources can be added to the NROER pool using proper licensing.

6.0 Massive Open Online Course (MOOC)

A massive open online course (MOOC) is an online course aimed at large-scale interactive participation and open access via the web. In addition to traditional course materials such as videos, readings, and problem sets, MOOCs provide interactive user forums that help build a community for the

students, professors, and teaching assistants (TAs). MOOCs are a recent development in distance education.

In The MOOC model for digital practice, a clear definition of a MOOC can be found:

A MOOC is an online course with the option of free and open registration, a publicly-shared curriculum, and open-ended outcomes. MOOCs integrate social networking, accessible online resources, and are facilitated by leading practitioners in the field of study. Most significantly, MOOCs build on the engagement of learners who self-organize their participation according to learning goals, prior knowledge and skills, and common interests.

A massive open online course (MOOC) is an online course that has open access and interactive participation by means of the Web. MOOCs provide participants with course materials that are normally used in a conventional education setting - such as examples, lectures, videos, study materials and problem sets. Apart from this, MOOCs offer interactive user forums, which are extremely useful in building a community for students, TAs, and professors. Generally, MOOCs do not charge tuition fees or provide academic credit.

Techopedia explains

MOOCs are a recent progression in distance education. The concept of MOOCs originated in 2008 among the open educational resources (OER) movement. Most of the initial courses were influenced by connectivist theory, which emphasizes that knowledge and learning arise from a network of relationships or connections

However, it is not entirely clear when a course is or is not a MOOC, but there are a number of features that are typically required for a course to be considered a MOOC:

Course: It should have some learning objectives to be achieved by students after certain activities within in a given period of time (therefore, it should have a beginning and an end). In addition, it should have some quizzes and exams to assess the knowledge acquired by students. And there should be some kind of interaction between students and teachers in every possible way (student-student and student-teacher).

Open: Open has several meanings in MOOCs. On one hand, the course should be open to everyone and should not require some prerequisites such as possession of a qualification or a level of performance in earlier studies. On the other hand, the access to educational resources (videos, lecture notes) should be free (but other things, like being able to ask direct questions to the teacher, the correction of the activities, or obtaining a certificate at the end of the course may have an economic cost

Online: The course is done remotely via the Internet and does not require physical attendance at a classroom. This feature is essential for anyone from anywhere in the world with an Internet connection can participate in these courses.

Massive: It should allow access to a very large number of students, much larger than a face-to-face class, or a traditional online course. In addition, the course should be prepared to accept changes in the number of students in several orders of magnitude, for example, going from 1,000 to 100,000 students, without a major problem for operation.

6.1 Classification of MOOCs

At the beginning, the first MOOCs had a strong and deep collaborative philosophy (cMOOCs), but this philosophy has evolved to a commercial sense (xMOOCs).

- **cMOOC**: A cMOOC emphasizes the connectivist philosophy: it is a social platform for collaboratively sharing and building knowledge within a community of people.cMOOC stands for connectivity or collectivist MOOC. cMOOC was the first MOOC format to be developed

- **xMOOC:** An xMOOC relies on a more traditional model of education, based on lectures recorded in videos, and usually is well-financed.xMOOC stands for eXtended MOOC and focuses on scalability. xMOOCs are the most popular type of MOOCs. They are offered through commercial or semi-commercial platforms, such as Coursera, edX and Udacity.**.**

6.2 Advantages of a MOOC

Some of the advantages of a MOOC are as follows:

- No tuition fees
- Open access, exposing top level professors at schools that would otherwise be unavailable to much of the World's population
- Open courses for all interested, regardless of location, resulting in a more diverse student base
- Collecting data via computer programs helps closely monitor the success and failure of each student. Traditional classroom participation cannot offer this type of precise information.
- Some enthusiastic professors have found global sharing of knowledge more appealing. Many acknowledge that MOOCs help them reevaluate their pedagogical methods, while improving knowledge sharing.

One drawback is the low course completion rate. Some studies have shown that courses are completed by as few as 10 percent of the huge volume of students that join the MOOC.

7.0 Summary

Higher educational institutions have been using the Internet and other digital technologies to develop and distribute education for several years. Yet, until recently, much of the learning materials were locked up behind passwords within proprietary systems, unreachable for outsiders. The open educational resource (OER) movement aims to break down such barriers and to encourage and enable freely sharing content.

The long-term effects and sustainability of MOOCs are debatable, but a general consensus exists that such courses are here to stay, regardless if they are disruptive or merely transformative.

Quadrant-III - (Learn More / Web Resources / Supplementary Materials):

Books, articles, research papers, journals, case studies etc.:

Allen, M. (2009). What is continuing professional development (CPD)? Jobs.ac.uk.Retrieved fromhttp://www.jobs.ac.uk/careers-advice/managing-yourcareer/1318/what-is-continuing- professional-development-cpd

Brookfield. S. D. (1995). Becoming a Critically Reflective Teacher.

Carapezza, K. (2015, April 2). Who is taking MOOCs? Teachers, says MIT-Harvard study. PBSO News Hour. Retrieved fromhttp://www.pbs.org/newshour/rundown/taking-moocs-teachers- saysmit-harvard-study/

Class Central. (2014). Free Online Education. [Online] Available: https://www.class-central.com/

Coughlan, S. (2013). Harvard plans to boldly go with SPOCS. BBC News. [Online] Available: http://www.bbc.co.uk/news/business-24166247

Daniel, J. (2012). Making sense of MOOCs: Musings in a maze of myth, paradox and possibility. Journal of Interactive Media in Education, 2013(3)

Duke University (2014). DOE endorses Duke MOOCs for teacher professional development. Retrieved from https://online.duke.edu/doe-endorses-duke-moocs-teacher-professional-development/

Earley, P. &Bubb, S. (2004). Leading and managing continuing professional development: Developing people, developing schools. London: SAGE Publications.

Eriksson, T., Adawi, T., &Stohr, C. (2017). Time is the bottleneck: A qualitative study exploring why learners drop out of MOOCs. Journal of Computing in Higher Education, 29(1), 133–146. https://doi.org/10.1007/s12528-016-9127-8

Florentine, S. (2015, September 28). 4 ways MOOCs are changing professional development. CIO. Retrieved from https://www.cio.com/article/2986306/it-skills-training/4-ways-moocs-are- changing-professional-development.html

Gaebel, M. (2013). MOOCs: Massive Open Online Courses. European University Association Occasional Papers.

Hart J (2005) Learning in a modern workplace, Accessed on 16th January from http://www.c4lpt.co.uk/blog/

ICEF Monitor. (2013. Are we already entering a post MOOC era? [Online] Available: http://monitor.icef.com/2013/11/are-we-already-entering-a-post-mooc-era/

InfoDev (2005) Using Technology for Training Teachers Accessed on 16th January, 2016 from http://infodev.org/articles/using-technology-train-teachers

International Telecommunication Union (2013). World Telecommunication/ICT Indicators database 2013 (17th Edition). [Online] Available: http://www.itu.int/en/ITU-D/Statistics/Pages/publications/wtid.aspx

Jordan, K. (2013). MOOC completion rates: The data. [Online] Available: http://www.katyjordan.com/MOOCproject.html

Kanjilal, U., & Kaul, P. (2016). The journey of SWAYAM: India MOOCs initiative. Retrieved from http:// hdl.handle.net/11599/2592

Khanna, R. (2013). Democratization of access to Higher Education through MOOCs. TEDxLivermore, June 8. [Online] Available: http://tedxtalks.ted.com/video/Democratization-of-access-to-Hi

Lane, L. (2012). Three Kinds of MOOCs. Lisa's Teaching Blog. [Online] Available: http://lisahistory.net/wordpress/2012/08/three-kinds-of-moocs/

Laurillard , D. (2016).The educational problem that MOOCs could solve: Professional development for teachers of disadvantaged students. Research in Learning Technology, 24. http://dx.doi. org/10.3402/rlt.v24.29369

Marquis, J. (2013, May 21). Why MOOCs are good for teacher professional development! OnlineUniversities.com. Retrieved from http://www.onlineuniversities.com/blog/2013/05/whymoocs-are-good-for-teacher-professional-development/

Morrison, D. (2013). The Ultimate Student Guide to xMOOCs and cMOOCs. MOOC News and Reviews. [Online] Available: http://goo.gl/LGe75T

NKC (2007). National Knowledge Commission - report to the nation 2006. New Delhi: Government of India. Retrieved from http://www.knowledgecommission.gov.in

Odden, A., Archibald ,S., Fermanich, M.,& Gallagher, H. A. (2002). A cost framework for professional development. Journal of Education Finance, 28(1), 51–74.

OECD (2009). Creating effective teaching and learning environments first results from TALIS. OECD Publishing. Retrieved from www.oecd.org/edu/school/43023606.pdf

Palmer, M. (2015, March 16). Are we missing opportunities to engage teachers with MOOCs? edX Blog. Retrieved from https://blog.edx.org/are-we-missing-opportunities-engage

Pappano, L. (2012). The Year of the MOOC. The New York Times. [Online] Available: http://goo.gl/oXI5KL

Quattlebaum, S. (2012, July 26). Why professional development for teachers is critical. The Evolllution. Retrieved from http://evolllution.com/opinions/why-professional-development-forteachers-is-critical/

Reich, J. (2012). Summarizing All MOOCs in One Slide: Market, Open and Dewey. [Online] Available: http://goo.gl/R8qNnW

Reich, J. (2013). Is a MOOC a Textbook or a Course? Education Week. [Online] Available: http://goo.gl/b3QMQ1

Richard, A. (2014). How do MOOCs fit into professional training? Retrieved from http://www.colloquium-group.com/how-do-moocs-fit-into-professional-training/?lang=en

Sanchez-Gordon, S., &Luján-Mora, S. (2014). MOOCs gone wild. In Proceedings of the 8th International Technology, Education and Development Conference (INTED 2014), Valencia (Spain), March 10–12,

2014 (p. 1449 -1458). Retrieved from http://desarrolloweb.dlsi.ua.es/ moocs/moocs-gone-wild

Sanchez-Gordon, S., Luján-Mora, S. (2013). Accessibility considerations of massive online open courses as creditable courses in engineering programs. International Conference of Education, Research and Innovation ICERI 2013. IATED Digital Library, pp.853-5862

Sangrá, A. (2013). Do you prefer a MOOC or an SPOC? [Online] Available: http://blogs.elpais.com/traspasando-la-linea/2013/10/prefieres-un-mooc-o-un-spoc.html

Schlager, M., Fusco, J., Barab, S. A., Kling, R., &Gray, J. (2004). Teacher professional development, technology, and communities of practice: are we putting the cart before the horse? In S. Barab, R. Kling, and J. Gray (Eds.), Designing virtual communities in the service of learning (pp. 120–153).UK: Cambridge University Press.

The World Bank (2013). World Development Indicators: Internet users. [Online] Available: http://data.worldbank.org/indicator/IT.NET.USER.P2

Urrutia, M. L., Fielding S., & White S. (2016). Professional development through MOOCs in higher education institutions: Challenges and opportunities for PhD students working as mentors. Journal of Interactive Media in Education, 1, 1–10. Retrieved from https://www-jime.open.ac.uk/ article/10.5334/jime.427/

Yousef, A.M. F., Chatti, M.A., Schroeder, U., Wosnitza, M, &Jakobs, H. (2014). MOOCs a review of the state-of-the-art. Paper presented in CSEDU 2014 - 6th International Conference on Computer Supported Education. Retrieved from www.openeducationeuropa.eu/en/download/file/fid/35609

Zapata-Ríos, M. (2013). POOC. http://redesabiertas.blogspot.com/2013/07/pooc.html

Links to web sites giving additional readings, Wikipedia, blogs, open source content etc.:

https://www.researchgate.net/publication/228843043

https://www.riemysore.ac.in/ict/unit_11_ict_for_teacher_professiona l_development.html

https://www.youtube.com/watch?v=ZFeyCc6we-s

http://www.oecd.org/education/ceri/38654317.pdf

http://oermap.org

http://www.col

*https://www.**youtube**.com/watch?v=-xGRztrWv-k*

http://creativecommons.org/licenses

TED Ed (http://ed.ted.com/)

Stellarium http://www.stellarium.org/)

Vimeo Teaching Channel - https://vimeo.com/teachingchannel

TeacherTube - https://www.teachertube.com/

Pro Teachers Video - http://www.proteachersvideo.com/Home.aspx

Edutopia videos - http://www.edutopia.org/videos

Teaching channel (https://www.teachingchannel.org/)

A History of the World in 100 Objects - http://www.bbc.co.uk/programmes/b00nrtd2/episodes/downloads

ISTE podcast - on how technology is changing the classroom -

Grammar Girl - http://www.quickanddirtytips.com/grammar-girl

Radio Lab - http://www.radiolab.org/

How stuff works - http://www.radiolab.org/

Teacher Created Materials - http://www.teachercreatedmaterials.com/podcasts/

Math Mutation - http://mathmutation.blogspot.co.uk/

NASA Science Cast - http://science.nasa.gov/science-news/sciencecasts/

Open learning - https://www.openlearning.com

NPTEL - Managed by IITs and IISc https://onlinecourses.nptel.ac.in/explorer

Quadrant-IV

True/False

1. Teacher professional development include training in the adaptation to the evolution of change of the profession of teachers and managers of education systems.
2. A focus of study not develops teachers' abilities to use specific ICT tools, such as online platforms.
3. Open educational resources as the teaching, learning, and research resources that reside in the public domain, released under an intellectual property license that permits their free use.
4. KOER stand for Karnataka Open Educational Resources.

5. MOOCs help enthusiastic professors re-evaluate their pedagogical methods, while improving knowledge sharing.

Multiple Choice Questions

6. A tool which combines voice audio, web cam visuals and text-based chat communications is known as
   a) Web conferencing
   b) MOOC
   c) Online learning
   d) None
7. Which of the following is not advantage of Web Conferencing?
   a) Increased productivity
   b) File and screen sharing
   c) Flexibility
   d) Connectivity issues
8. Open Educational resources includes
   a) Learning content
   b) Tools
   c) Implementation resources
   d) All
9. Open educational Resources are used for
   a) Self-paced learning
   b) Enhancement of content knowledge
   c) Both a and b
   d) None

10. Creative commons (CC)has designed a collection of licenses to _____ content under various conditions
   a) Copy
   b) Share
   c) Learn
   d) All

Answers: 1-true, 2-false, 3-true, 4-true, 5-true, 6-a, 7-d, 8-d, 9-c, 10.b