OMDE 601 9041 GROUP 2

FIRST WAVE OF DISTANCE EDUCATION DEVELOPMENT (1840s-1970s)

The Development Waves of Distance Education

James Reinhardt, Julius Uwansc, Colleen McCallister, Zone Mdledle, Dhaya Sewduth, & Sindile Ngubane-Mokiwa

3.1.2015

Larger Context (economics/ politics/ societal values and pressures/ government policies/ technological advances)	_	Organizational Developments/ System	4 Teaching/ Learning Methodologies (role of teacher/role of learner)	5 Predominant Technologies	6 Key Authors
Need for Education - The Industrialized societies identified the need to expand education, and the industrialized period was driven by technological advances, social change, and the need for the educational	Behaviorist Learning Theories- Pattison (1999) describes educators who create an atmosphere where desirable behaviors are positively reinforced and	Correspondence Schools were set up to address the challenge of missing school during world wars (Haughey, 2010). University of London (1836) (Holmberg, 2005, p.	Separation between teacher and learner. Physical separation. Time separation. Social separation. Supervised	Largely print based. (Cleveland-Innes, 2010, p. 14-15). Mass production of information via emerging print industry (Cleveland-Innes and Garrison,	Caleb Phillips A.E. Tickner W. Harper H.S. Hermod C. Wedemeyer Toussaint, C.

institutions to adapt to the social change (Cleveland-Innes and Garrison, 2010, p. 26). Upward social mobility (the class system). Geographical differences/conflicts/discrimination/margin alization could have denied access to some in certain societies. Gender discrimination in some societies meant that female students could not attend public or private schooling. World wars also took the focus away from public schooling and	undesirable behaviors are negatively reinforced. Empathy approach & didactic conversation: the presentation of the course subject in a conversational style (Holmberg, 2005, p.23). Rustin Approach: revolves around the creation and handing out self-instructional material (Holmberg, 2005, p. 14). Harper believed	University of Chicago (1892) (Holmberg, 2005, p. 15). International Correspondence Schools (ICS) in Scranton, PA later became the Harcourt Learning Direct (Holmberg, 2005, p. 16). University of Queensland (Holmberg, 2005, p. 16).	correspondence education for primary and secondary students and began in Australia in the early 20th century (Holmberg, 2005, p. 16).	2010, p. 15).	Forester, T. J. Childs, G. B. O. Peters Daniels, J. S. Delling, R. M. Dinsdale, W. A. Gadden, G. Holmberg, B. Keegan, D.
the focus away from	Harper believed in more structured and paced courses				

Access to education became an overriding concern in many countries.

Minimize costs of education. No travelling required as students could do this at the comfort of their own homes.

Home study as referred to by for profit organisations and "independent study" as referred by universities (Moore & Kearsley, 2012 p. 23).

Societal imperatives (e.g. South Africa meant barring / exclusion of people of colour to higher education or confined to "bush colleges" - so only access was to Unisa - a DE institution

(Holmberg, 2005, p. 16).

Hermod

Guided Didactic Model - Guided two-way communication to inspire self-learning and student motivation (Moore & Kearsley, 2012, p. 210).

Behaviorist Theory -Teacher has control, material is highly structured, and interaction is based on assessment of

believed in the freedom of the **student** to study as it suited them (Holmberg, 2005, p. 16).

student mastery (Moore & Kearsley, 2012, p. 213).				
--	--	--	--	--

SECOND WAVE OF DEVELOPMENT (1960-1990)

Systems Approach to Distance Education

James Reinhardt, Julius Uwansc, Colleen McCallister, Zone Mdledle, Dhaya Sewduth, & Sindile Ngubane-Mokiwa

3.15.2015

Larger Context (economics/ politics/ societal values and pressures/ government policies/ technological advances)	2 Theories/ Ways of Understanding	3 Institutional and Organizational Developments/ System	4 Teaching/ Learning Methodologies role of teacher/role of learner	5 Predominant Technologies	6 Key Authors
Systems were needed to support student learning as well as course development and delivery. Increased Demand - Need for a model to handle numerous decisions that are in line with university policies as well as a model to address demand for more courses and issues of importance (Haughey 2010). Quality Assurance - Government policies and	principles outlined by Knowlesan adult	British Open University	administrators become involved in course design and quality assurance. It calls for changes when new technologies, theories and application emerges. For example,	medium used in DE (Moore & Kearsley, 2012). Television (Cleveland-Innes & Garrison, 2010). Radio (Cleveland-Innes & Garrison, 2010)	Haughey, M. Moore, M. Kearsley, G. Peters, O. Miller, G. Tait, A. Knowles, M. Bates, T.

other external requirements necessitated systems for quality assurance of course | Theory of design and development processes. As an example, Open education movement were instrumental in these movements" (Haughey, 2010).

The development of the Open University coupled with industrialization drove people to embark on studies and learner of their choice (Cleveland-Innes & Garrison, 2010).

Britain's Open University with the intention of delivering high quality, low-cost off campus education (Bates & Sangra, 2011: Moore & Kearslev. 2012).

Political push for educational development of citizens at a distance--a new (Moore & Kearsley 7-point understanding of education that ensures lifelong learning (Otto, P.,

2005, p.64-69).

Transactional Distance - DE students and ladministrators need lto overcome a distance in understanding and geography. 3 components: dialogue, structure. autonomy (Reves, 2013, p. 44).

Constructivist students learn is cognitively constructed. Student (Cleveland-Innes & responsible for constructing meaning and being active in communication to gain knowledge 2012, p. 215).

Systems

Single mode universities lare institutions where distance education is the sole focus (Moore & Kearslev 2012).

Telecourses - Community colleges, in particularly. created new DE courses using public television, dubbed the telecourse (Cleveland-Innes & Garrison, 2010).

External studies are a semi-independent body still model - Student worked in conjunction with a instructor dialogue with host university. The host approach- The way university had final say on the courses offered from the external studies unit Garrison, 2010, p. 92-93).

> Open learning institutions began collaborations to share courses and course materials. An example includes the International University Consortium (Cleveland-Innes & Garrison, 2010, p. 34).

Division of labour described by Peters (2010) before teaching had been in a single hand later that gave rise Satellite to division of labor. For example, division of labor split assignments into various segments for quick and easy participation and performance.

Learner support system in the OU UK the tutor playing an important role to help develop a community of learners (Cleveland-Innes & Garrison, 2010).

Asynchronous/ synchronous methodologies utilize multipoint audio conferencing, sharing of

ncing technologies(Bates & Sangra, 2010).

technology:extensi on of real time events like courses. seminars, and workshops (Bates & Sangra, 2010).

Sangra, A.

Holmberg, B.

Shale, D.

Jonassen, D.

Davidson, M.

Collins, M.

Campbell, J.

Bannan- Haag,

Cleveland-Innes. M.

Garrison, R.

Otto. P

Education/Learning centers with private and part-time tutors, TV, radio, printed materials and books (Cleveland-Innes & Garrison, 2010). Distance Education programs and universities continue to struggle to gain esteem in higher education circles (Cleveland-Innes & Garrison, 2010, p. 101).	systems to allow for more coordination and quality assurance. Moore and Kearsley (2012) claim "a total systems approach, designers try to use a rich combination of all the media, delivered by the most convenient technologies, so that	1. Khan Academy at https://www.khanademy.org 2. MIT OpenCourseware Open University United Kingdom (1969) (Haughey 2010, p.50). Others are, Open University of Sri Lanka; Open University Australia; and Open University of India.	(PowerPoint) and HD images may be used where bandwidth permits.Google Docs can allow for asychronous methodology (Bates & Sangra, 2011).		
--	---	---	--	--	--

THIRD WAVE OF DEVELOPMENT (1995-....)

Internet/Web-Based Communication

James Reinhardt, Julius Uwansc, Colleen McCallister, Zone Mdledle, Dhaya Sewduth, & Sindlie Ngubane-Mokiwa

4.05.2015

Larger Context (economics/ politics/ societal values and pressures/ government policies/ technological advances)	2 Theories/ Ways of Understanding	3 Institutional and Organizational Developments/ System	Methodologies role of	5 Predominant Technologies	6 Key Authors
Post-Industrialism/Neo-	Social Constructivism	Rich Environments for	Interaction and	Interactive	Peters, O.
Industrialism. Peters	Theory (Vygotsky,1978)	Active Learning	participation meant	TechnologiesThe	
(2010) presents the	In DE, this theory is based	(REAL). Dunlap (1999)	that instructors' roles	Internet provides the	Holmberg, B.
tenets of this era as	on the instructional	defined REAL as	should move from	means to deliver	A sada sa a a T
including "advanced	strategy in which	settings that are focused	being the "sage on	interactive	Anderson, T.
technologyinformation-d	computer-supported	on student learning and	the stage to the coach	technologies such as	Moore, M.G.
riven economydigitized	collaborative learning help	include "authentic	on the sideline"	video, audio (chat),	IVIOOIC, IVI.O.
society	students acquire skills in	contexts, collaboration,	(Learning, 2004, p.	text messages,	Rowntree, D.
globalizationincreased	communication,	intentional learning,	103)	streaming video.	,
significance of knowledge	knowledge sharing, critical			These technologies	Bates, A.W.
and knowledge media,	thinking, and use of	. ссс (р. 🗕).		enhanced web-based	
the rise of the knowledge	technologies found in			courses and online	Daniel, J.
worker virtual factories,		Dunlap (1999) also	dissemination to	communications.	

virtual workplaces, the increasing role of services, of information and of theoretical knowledge" (p. 12).

Jenkins, and Tapscott shift in distance education technologies from "...presentation, push-type..." to digital technologies that are "...interactive, generative, approach and uniquely participatory (as cited in Swan, 2010, p. 110).

Advancement in

Technology-In the larger context, development of communications tools gave rise to the growth of transmit knowledge to be both synchronous and asynchronous communication and pedagogy (Vaughan, 2010).

workplaces.

Heutagogy--(Anderson & Dron, 2010); In DE, this theory is centered on a learner's self-determination that and Williams highlight the comes naturally, perhaps as a result of past learning University with ten methods or styles and experience. It resonates with 21st century distance 2009. learning pedagogical

> "Social-constructivist pedagogy acknowledges the social nature of knowledge and of its creation in the minds of lindividual learners. Teachers do not merely passively consumed by learners; rather, each learner constructs means by which new knowledge is both created and integrated with existing

noted characteristics of successful REAL scenarios that include high levels of interaction, collaboration, and teacher involvement.

1997-African Virtual more African Universities joining in

Catalonia (VOC) Spain.

In distance education, provides ubiquitous access regardless of location, development of asynchronous learning networks. Virtual universities show examples of intensive ICT-driven innovation in online learning. (Cleveland-Innes & Garrison (2010, p. 214-235).

quiding students in knowledge acquisition (Swan, 2010).

Interactive technologies lead to enhanced teaching presence which leads to deep learning (Garrison & Cleveland-Innes. 2005).

roles of teachers, in digitized environments. changing to that of ...facilitators, advisors, or counselors" (p. 141). Peters (2010) notes

Shift from pedagogical approaches (emphasis on the teacher) to Heutagogical approaches - Role and responsibility of the learner to take responsibility for one's own learning (Siemens, 2005a, 2005b, 2007 &

(Anderson, 2003).

Swan (2010) points to Garrison, D.R. the "...growth of digital multimedia and...inexpensive multimedia tools" (p.111).

Swan (2010) highlights the development of Web 2.0 applications that 1995-Virtual University Peters (2010) notes the allow for collaboration (p. 112).

> **Advanced Personal** Technologies that "...for distance educators four astounding innovations are important: improved personal computer technology, multimedia technology, digital video-compression

Keegan, D.

Siemens, G.

Dron. J.

Vaughan, N. D.

Swan, K.

Evans. T.

Pauling, B.

Society's Demand for Higher Education--in trying to keep the cost of higher education low because of government reduction in funding higher education, cost reduction strategies were adopted to cope up with high demand for both distance education and traditional education lenrollment in the US. (Vaughan, 2010).

Mobile device ownership increased, globally, and is currently approaching ubiquity. The needed (Anderson & International Telecommunication Union reports a global, mobile phone, penetration rate of (CoI). (2002) Educational 96% (as cited in Tagoe & Abakah, 2014, p. 91).

The emphasis in DE shifted to Interaction

knowledge" (Anderson, 2003).

Connectivism-As more technology and information become available teaching and learning style emerged about 1996 that was known as Connectivism." (Anderson & Dron. 2011). In connectivism, the learner's role is not to memorize or even understand everything, but to have the capacity to performance, and more find and apply knowledge when and where it is Dron, 2011).

Community of Inquiry experience that result from social, cognitive and teaching presence; all three are necessary for learning and when combined result in

Institutional Case Studies --1996--Virginia Tech. United States strategic plans for technology. By 2010 The Center for Innovation and Learning had supported more than 120 strategic instructional projects assessments that showed greater student and faculty interaction, equal or superior assessment active learning in technology-supported teaching compared with standards lectures. (Bates & Sangra, 2011).

Internet capabilities provided bigger opportunities for Massification of higher

Baijnath & Ryan, 2013).

Furthermore the 'digital divide" between those who "have" (access to internet connectivity and those who do "not have" connectivity became wider. High and exploitative costs of broadband in developing nations is prohibitive. (Baijnath & Ryan, 2013

"Individualization of the learning process" (Peters, 2001:5)

Students not just accessing the materials but discussing with their teachers (Garrison in Peters, 2001: 11)

Learners and teacher collaborate to create

technology and Internet technology" (p. 10).

,		education (Peters, 2010)	the content of study	
	of Web 2.0 technologies to			
The need to define real	eLearning is tied to Col.		-Teacher becomes the	
learning needs of learners	Web 2.0 tool such as wiki		conductor or director of	
1	or blog can be viewed as		the learning process.	
	a means of facilitating		- Not the leader.	
	learning and knowledge.		(Greenhow, Robelia &	
transmitted. (buzz words	(Swan, K. 2010. In		Hughes, 2009)	
"	Cleveland-Innes &		1 1dg/103, 2003)	
1 1 1 10 0	Garrison (2010).		Use of shared	
Anderson, 2007).	Garrison (2010).		repositories - later	
7 (11de10011, 2007).	Theory of Transactional		Open Educational	
	Distance - DE students		Resources (OERs)	
	and administrators need to		1100001000 (02110)	
	overcome a distance in			
	understanding and			
	geography. Three			
	components: dialogue,			
	structure, and learner			
	autonomy (Reyes, 2013,			
	p.44).			
	Equivalency Theorem:			
	Anderson (2003)			
	introduces an equivalency			
	theorem that addresses			
	three modes of interaction:			
	student to student, student			
	to teacher, and student to			
<u></u>	<u> </u>			

content. If one or more of the modes is high quality then the other methods need not be high quality and could even be eliminated.	

CURRENT TRENDS (2000's....)

James Reinhardt, Julius Uwansc, Colleen McCallister, Zone Mdledle, Dhaya Sewduth, & Sindile Ngubane-Mokiwa

4.12.2015

1	2	3	4	5	6
Larger Context (economics/ politics/ societal values and pressures/ government policies/ technological advances)	Theories/ Ways of Understanding	Institutional and Organizational Developments/ System	Teaching/ Learning Methodologies (role of teacher/role of learner)	Predominant Technologies	Key Authors
	Heutagogy - Kenyon and Hase (2001) define	Massive Open Online Courses (MOOCs) -		Cloud Computing - Ice	Anderson, T.
educational institutions for marketing purposes.	Heutagogy as "the study of self-determined learning"	Classes offered by institutions, offering open	Cleveland-Innes and Sangra (2010) see	(2010) describes cloud computing	Peters, O.
Cleveland-Innes and Sangra	(p. 3).	access to all elements of the class and can include	students in higher education	as applications for productivity	Hase, S.
(2010) describe a competitive educational environment	Theory of Connectivism - Theory that describes	thousands of students (Skiba, 2012). Massive		that afford users the opportunity to	Kenyon, C.
where it is necessary for institutions to collaborate.	learning in a setting that is social, complex, and	open online course is an online course that	"self-directed, continuous, active"	engage in "desktop-base	Siemens, G.
	Web-connected (Siemens & Conole, 2011). It also	provides open access with unlimited participation	\(\mathref{i}\)	lightweight	Downes, S.
for Public Policy and Higher	asynchronous learning (Kropf	provides interactive user	Double Loop Learning - Blaschke	devices" (p. 159)	Poggeler, F.
Education report that funding has declined following World	, 2013).	forums that support community interactions	(2012) describes learners engaging in	Web-connected	Jonassen, D.
War II, creating a "market-driven environment			this action " consider the problem and the	such as: Tablets.	Blaschke, L.
			,	,	Kropf, D. C.

for education institutions..." (p. 230).

Employers seek candidates with technological competencies. Oblinger (as cited in Cleveland-Innes and Sangra, 2010) notes students must be technologically competent to be able to graduate and to compete after araduation.

Move by traditional institutions to blended and online learning.

Utilization of Information and Communication Technologies learning how to "work smart" "African countries, like countries together, we hope to leave everywhere, are looking to the educational possibilities offered by distance education and Information and Communication Technologies (ICTs) as a way of expanding and improving the systems" (Oladejo & Gesinde, 2014: 134).

Evolving Student Body -

Cleveland-Innes and Sangra (2010) discuss the evolving

Refined Theory of Transactional Distance: using discourse analysis techniques, demonstrated more specifically how changes in dialogue, structure, and teacher/learner/refashion (Downes. control affected changes in the others. (Shinkle, 2001),

(Zhang, 2003), (Moore &

Kearsley, 2012).

Peeragogy: "Peeragogy is a collection of techniques for collaborative learning and collaborative work. By the world in a better state than it was when we arrived' (Rheingold, 2014).

Metaliteracy MOOC: "... is a comprehensive open learning model that reimagines information literacy for social media environments and online communities in the 21st century. Metaliteracy offers a unified framework that promotes critical thinking, participatory

Open Educational Resources (OERs) -Items for educational pursuits that anyone can access, utilize, and 2011).

Emerging Technologies: Are experiencing the same scrutiny that "now established" technologies | Kihoro (2014) cite the faced when they were "emerging." It is important WWW, social to look at the theories of old technology to understand how new technologies can be applied in DE (Anderson & Dron. 2010).

Virtual Schools:

Complementary online education.The African Virtual University (AVU) founded as a World Bank Autonomous project in 1997. developed to a Pan African Intergovernmental " Organization in 2003 with made by the

resulting action and outcomes, in addition to reflecting upon the problem-solving process and how it influences the learner's own beliefs and actions..." (p. 59). (2010) highlights

Collaborative learning - Muuro. Wagacha, Oboko, and application..." expansion of the linteraction on the Internet, and the advent of Web 2.0 platforms as key components in the lincreased efficacy and employment of collaborative lenvironments in distance education.

Learning - Peters (2001) notes that the ...greatest impression

smartphones, laptops, and other devices.

Rich Internet **Application** (RIA) - Ice applications with Bates, A.W. "...robust characteristics of desktop and are transmitted via "...Web browser plua-ins

or...sandboxes

machines" p.

or virtual

159).

Web 2.0 **Platforms** include:

Chatrooms--Sv nchronous online discussion. Provides opportunity for

Garrison, D. R.

Cleveland-Innes

Sangra, A

characteristics of students as well as the increases in enrollments of older students.

Changing Student **Demographics** - Developing people who are able to cope with the changing world (Hase and Keynon, 2012).

Access Concerns -

"Aderinoye, Siaciwena, and Wright (2009) corroborated Leary and Berge's (2007) position, maintaining that Africa lacks high-speed Internet infrastructure, access to computers, and human resources with the expertise and knowledge, to implement and support hi-tech delivery methods effectively. In Africa, most of the advanced form of technology is not a viable medium for most ODL learners as many of them still live in very remote areas."

learning, and metacognitive reflection as interrelated and ongoing collaborative practices" (Mackey and Jacobson, 2011:1).

Community of Inquiry

(Col) - Educational experience that result from social, cognitive and teaching presence: all three are necessary for learning and when combined result in learning. In DE, the value of Web 2.0 technologies to eLearning is tied to Col. Web 2.0 tool such as wiki or blog can be viewed as a means of facilitating learning and knowledge. (Swan, K. 2010. In Cleveland-Innes & Garrison (2010).

Constructivism- Romney and Brueseke (2014) claimed that Constructivist principles include centralized knowledge, with knowledge tied to the instructor, utilizing centralized tools, and requiring students to gather and store knowledge for

27- country members. Offers online degree program. (AVU, 2012). digital-learning environment...is its enabling of autonomous learning..." (p. 145).

Social Media as tools Kearsley, 2012, for Teaching and **Learning** -Educational institutions employ social media such as Twitter, Facebook, and for Wikis to collaborate. teach, and connect with students globally. review,

Twitter is popular with learn--a Web 2.0 higher education students who use it to connect and collaborate with teachers, students and WordPress, and peers in both asynchronous and synchronous forms.

Flipped Classroom: Online/Asynchronous Learning: (Clark, 2011) --Learning takes place experts and anytime, anywhere

student-student. and student-teacher educational exchanges. Moore &

p.142).

Blogs

Interactive forum students/teacher s/groups to collaborate and tool. Yerrick (2013) cites examples as Blackboard. Blogspot.

Twitter

A social network of collaboration. discussions and interactions for teachers, subject students. Bates

with learner's pace. & Sangra, 2010, future use. p.34-35. Community-Theories for **Autonomous** Centered Learning: Wikis Learning and Skills for Virtual Environments (in Community-centered Also termed a Peters, 2010). learning environment social network support two types of but is regarded learning: 1. the social as an a web construction of application which knowledge for small allows users to communities, and 2. interact. larger student collaborate and community, society exchange and culture. Both information or levels thrive on the ideas. Yerrick theory of (2013) offers PBWorks, constructivism. (Cleveland-Innes & EdWiki, and Garrison, 2010, p. Moodle as 120). examples of hosts. Dialogical Learning -Peters (2001) Facebook describes several An Online social aspects of this network services concept including launched in 2004 students interacting that provides users a forum to with: faculty, staff, other students, and exchange other entities messages, photos, videos connected to the distance education as well as post

any kind of process. material for users Structured Learning to view and - Peters (2001) review. indicates that distance education institutions Google Docs is currently employ a productivity courses and programs application that that are planned and allows for linear. collaborative work from a Blended Learning variety of Garrison and Vaughan Web-accessible (in Vaughan, 2010) devices. define as the combination of Open "...face-to-face and Educational online approaches and Resources technologies" (p. 165). (OERs) - Items Vaughan (2010) touts for educational benefits such as pursuits that flexibility, improved anyone can communication, and access, utilize, better student and refashion outcomes. (Downes, 2011). YouTube and Vimeo - Web 2.0 platforms that allows user to post, view, and discuss video

		content.	
		iTunes U - Yerrick (2013) describes as a service that hosts podcasts creation and dissemination, RSS feeds, and rich media.	
		Imeem™,	
		Writeboard™,	
		InstaColl™	
		M-libraries	

References

- Aderinoye, R., Siaciwena, R., and Wright, C.R. (2009). Regional focus issue editorial: A snapshot of distance education in Africa. IRRODL 10 (4) African Council for Distance Education (n. d). Newsletter http://www.acdeafrica.org/html/about_ACDE.htm
- Anderson, T. (2003). Getting the mix right again: An updated and theoretical rationale for interaction. International Review of Research in Open and Distance Learning (IRRODL), 4(2). Retrieved from http://www.irrodl.org/index.php/irrodl/article/view/149/230
- Anderson, T., & Dron, J. (2010). Three generations of distance education pedagogy. *The International Review of Research in Open and Distributed Learning*, *12*(3), 80-97.
- Anderson, T., & Dron, J. (2011). Three generations of distance education pedagogy. International Review of Research in Online and Distance Learning (IRRODL), 12(3), 80-97. Retrieved from http://www.irrodl.org/index.php/irrodl/article/view/890
- Bates, A. W. & Sangra, A. (2011). Managing Technology in Higher Education: Strategies for Transforming Teaching and Learning.

 San Francisco: Jossey-Bass
- Baijnath, N., & Ryan, P. (2013). Virtual and Virtuous: Creating New Pedagogies for a New South Africa. Teaching and Learning

Online: New Models of Learning for a Connected World, 2, 193.

Blaschke, L. M. (2013). E-learning and self-determined learning skills. Self-Determined learning: Heutagogy in action, 55-68.

Blaschke, L. M. (2012). Heutagogy and lifelong learning: A review of heutagogical practice and self-determined learning. *The International Review of Research in Open and Distributed Learning*, *13*(1), 56-71.

Bullen, M. (1995). Andragogy and university distance education. Paper presented to the 17th conference on the *International Council for Open and Distance Education*, Birmingham, UK. Retrieved from https://app.box.com/s/ap4nq2zf1jujkyo65pz0

Cleveland-Innes, M. F. & Sangra, A. (2010). Leadership in a new era of higher distance education. In M.F. Cleveland-Innes & D.R. Garrison (Eds.), *An introduction to distance education: Understanding teaching and learning in a new era* (pp. 137-164).

New York & London: Routledge.

Downes, S. (2005) An introduction to connective knowledge. Stephen's Web. http://www.downes.ca/cgi-bin/page.cgi?post=33034

Downes, S. (2011) Open educational resources: A definition. Stephen's Web. http://www.downes.ca/post/57915

Dron, J., & Anderson, T. (2007). *Collectives, networks and groups in social software for e-learning*. Paper presented at the

- Proceedings of World Conference on E-Learning in Corporate, Government, Healthcare, and Higher Education, Quebec. Retrieved from www.editlib.org/index.cfm/files/paper_26726.pdf.
- Dunlap, J. C. (1999). Rich Environments for Active Learning on the Web: Guidelines and Examples.
- Garrison, D.R. & Cleveland-Innes, M. (2005). Facilitating cognitive presence in online learning: interaction is not enough. *American Journal of Distance Education*, *19*(3): 133-148.
- Greenhow, C., Robelia, B., & Hughes, J. E. (2009). Learning, teaching, and scholarship in a digital age web 2.0 and classroom research: what path should we take now?. *Educational researcher*, 38(4), 246-259.
- Haughey, M. (2010). Teaching and learning in distance education before the digital age. In M.F. Cleveland-Innes & Garrison, An introduction to distance education: Understanding teaching and learning in a new era (pp. 46-66). New York, NY and London, England: Routledge
- Hase, S. & Kenyon, C. (2000). *From andragogy to heutagogy.* In UltiBase Articles. Retrieved from http://www.psy.gla.ac.uk/~steve/pr/Heutagogy.html
- Holmberg, B. (2005). The evolution, principles, and practices of distance education (pp. 13-36). Oldenburg, Germany: BIS-Verlag

- der Carl Ossietzky Universität Oldenburg. Retrieved from http://www.box.com/shared/y97qyc7m0t
- Ice, P. (2010). The future of learning technologies. In M.F. Cleveland-Innes & D.R. Garrison (Eds.), *An introduction to distance education: Understanding teaching and learning in a new era* (pp. 137-164). New York & London: Routledge.
- Knowles, M.S., Holton, E.F., & Swanson, R.A. (2005). *The Adult Learner: The Definitive Classic in Adult Education and Human Resource Development*. Amsterdam: Routledge. Retrieved from http://eds.b.ebscohost.com.ezproxy.umuc.edu/eds/ebookviewer/ebook/bmxlYmtfXzEzMDA5OV9fQU41?sid=803a2cf7-c832-4745-ab9c-441cddcf2aa8@sessionmgr115&vid=1&format=EB&rid=1
- Kropf, D.C. (2013). Connectivism: 21 century's new learning theory. *European Journal of Open Distance Learning, 16* (2).

 Retrieved from http://www.eurodl.org/materials/contrib/2013/Kropf.pdf
- Kruse, N. B., & Veblen, K. K. (2012). Music teaching and learning online: Considering youtube instructional videos. *Journal of Music, Technology & Education, 5*(1), 77-87.
- Learning, P. B. (2004). Teachers as coaches of cognitive processes in problem-based learning. Retrieved from http://www.thomsonlearningasia.com.

- Leary, J. & Berge, Z. (2007). Successful distance education programmes in sub-saharan Africa. *Turkish Online Journal of Distance Education*. 8(2).
- Mackey, T. P., & Jacobson, T.A. (2011). Reframing information literacy as a metaliteracy.
- Miller, G. E. (2010). Organization and technology of distance education. In M. F. Cleveland-Innes & D. R. Garrison (Eds.), An introduction to distance education: Understanding teaching and learning in a new era (pp. 26-45). New York & London: Routledge.
- Moore, M. G., & Kearsley, G. (2012). *Distance Education: A Systems View of Online Learning.* [Kindle DX version]. Available from Amazon.com
- Moore, M. G., & Kearsley, G. (2012). Distance education: A systems view of online learning (3rd ed.). Belmont, CA: Wadsworth.
- Muuro, M. E., Wagacha, W. P., Oboko, R., & Kihoro, J. (2014). Students' perceived challenges in an online collaborative learning environment: A case of higher learning institutions in Nairobi, Kenya. *International Review of Research in Open & Distance Learning*, *15*(6), 132 -161. Retrieved from http://www.irrodl.org/index.php/irrodl/article/view/1768
- Oladejo, M. A., & Gesinde, A. M. (2014). Trends and Future Directions in Open and Distance Learning Practice in Africa. Journal of

- Education and Practice, 5(18), 132-138.
- Peters, O. (2001). Learning and Teaching in Distance Education. Abingdon, Oxon: Routledge.
- Peters, O. (2010). The revolutionary impact of distance education. In O. Peters, *Distance education in transition: Developments and issues* (5th edition). Oldenburg, Germany: BIS-Verlag der Carl von Ossietzky Universitat Oldenburg. Retrieved from: http://www.box.com/s/ktx7ipccetotqrr11mct
- Peters, O. (2010). The revolutionary impact of distance education. In O. Peters, *Distance education in transition: Developments and issues* (5th edition) (pp.43-56). Oldenburg, Germany: BIS-Verlag der Carl von Ossietzky Universität Oldenburg. Retrieved from http://www.box/s/ktx7ipccetotqrr11mct
- Reyes, J. (2013). Transactional distance theory: Is it here to stay?. *Distance Learning, 10*(3), 43-50. Retrieved from http://www.infoagepub.com/
- Rheingold, H. (2014). The peeragogy handbook. *Arlington, MA: Pierce Press and Chicago: PubDomEd Press. Published with a CC-Zero copyright waiver.*
- Romney, G. W., & Brueseke, B. W. (2014). Merging the tower and the cloud through virtual instruction: The new academy of

- distance education. *Journal of Research in Innovative Teaching, 7*(1), 93-110. Retrieved from http://www.nu.edu/OurPrograms/ResearchCouncil/The-Journal-of-Research-in-Innovative-Teaching.html
- Schwier, R. (2011). Connectivism. 30 minute video interview with George Siemens. Retrieved from http://rickscafe.wordpress.com/2011/08/05/interview-with-george-siemens-about-connectivism/
- Siemens, G. (2005). Connectivism: A learning theory for the digital age. Retrieved from http://connectivism.ca/
- Siemens, G. (2005). Connectivism: Learning as network creation. e-Learning Space.org website.

 http://www.elearnspace.org/Articles/networks.htm
- Siemens, G., & Conole, G. (2011). Special issue connectivism: Design and delivery of social networked learning. *International Review of Research in Open & Distance Learning, 12*(3), 1-1. Retrieved from http://ehis.ebscohost.com.ezproxy.umuc.edu/eds/external?sid=afea6460-3c78-45a8-aaca-3319adb7ffc8%40sessionmgr115 &vid=3&hid=126
- Swan, K. (2010). Teaching and learning in postindustrial distance education. In M.F. Cleveland-Innes & D.R. Garrison (Eds.), An

- introduction to distance education: Understanding teaching and learning in a new era (pp. 108-134). New York & London: Routledge.
- Tagoe, M., & Abakah, E. (2014). Determining distance education students' readiness for mobile learning at University of Ghana using the Theory of Planned Behaviour. *International Journal of Education and Development using ICT*, *10*(1).
- Vaughan, N.D. (2010). Blended learning. In M.F. Cleveland-Innes & D.R. Garrison (Eds.), *An introduction to distance education: Understanding teaching and learning in a new era* (pp. 165-178). New York & London: Routledge.
- Vygotsky, L.S. (1978). Mind in society: The development of higher psychological processes. Cambridge, MA: Harvard University Press.
- Yerrick, R. K. (2013). Evaluating students' responses to itunes u as a rich media delivery solution for teacher education.

 International Journal for the Scholarship of Teaching & Learning, 7(1), 1-18. Retrieved from http://isetl.org