# Building and Sustaining a Lifelong Adult Learning Network

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**Abstract.** What happens when a group of co-learners engage in a continuous lifelong learning community in the context of rapid changes in both the use of ICT in learning and the curriculum?

This paper describes a longitudinal study from 1995 to 2010 into the design and use of Information and Communications Technology (ICT) in an adult e-learning community operating at Paideia University - one of the world's first 'virtual' universities, based in The Netherlands. Working in partnership with Charles Sturt University in Australia, the Paideia study began at a time when all universities were seeking to understand the virtual university model and to discover which path to follow as learning and teaching online was about to change the adult learning landscape. The underlying theoretical framework of social constructivism, was supported at Paideia by its original 'virtual university' curriculum model for dialogue and peer learning techniques. The participants in this study shared a unique desire to seek alternative ways to learn beyond what was offered by conventional practice and universities.

**Keywords:** action research, alternative adult e-learning, comparative education, complementary education, curriculum modeling, ethnography, human-computer interaction (HCI), information and communication technology (ICT), interdisciplinary interaction, multi-user object-oriented domain (MOO), massive open online course (MOOC), online community, peer learning, RITA model, social constructivism, transnational education, Web 4.0.

## 1    Introduction

Since the 1990s, the educational value of virtual communities and the popular paradigm of the virtual university model [11] in adult learning was a driver of change in the adult distance learning everywhere, particularly in Australia [2], [4], [7]. The learner-centred design of ICT facilities for adult e-learning [23] was part of that change [3], [9], [20] and presented many problems associated with building and sustaining online adult learning communities, The problems included teachers excited about using new ICT and takings risks by moving away from a prescriptive curriculum; developing ICT efficacy (digital literacy) [8] among learners; handling the technical and management issues [14] surrounding global course development [12] and internationalization or transnational education; understanding the socio-cognitive

processes [1], [14] involved; cultural interaction; virtual university models [11]; curriculum renewal and learning about new ICT media that was emerging on the horizon.

In a report to the Australian Council for Educational Research on ICT trends in education in 2008, [33] concluded that more effort in research was required on the effects of ICT upon collaboration and the successful use of virtual communities on learning.

One of the reasons for this gap in the literature was the time, cost and effort needed to build and sustain an effective lifelong online adult learning community. This is much longer in most cases than a semester long unit of learning, which is too short to observe and interpret the results, as found in this study. It takes time to build digital literacy, and the developmental steps in socialization, cultural awareness, alliance building and trust before all members of a team can be effective in contributing to the success of virtual communities in learning.

Changes in e-learning and professional practice drive the need for evaluative research by academic staff of their own online teaching practice. The ICTed Project findings [24], under recommendations 4 and 9, in particular, suggested studies like this thesis are required in order to improve interaction with the outside world through longitudinal and retrospective evaluation of e-learning innovation and dissemination. The ICTed Project also recommended that all ICT educators needed to evaluate their own teaching and learning practices and that each university consider supporting a limited number of ICT e-learning environments.

Since the release of the Web in 1991, university learning and teaching embraced the development of an ideal 'virtual university model' in many formats. The literature on the andragogy needs of adult learners, suggested that an effective ICT-based learning environment or Learning Management System (LMS) must be interactive, learner- centered [13] and support self-direction in adult learners [5], [6]. It was Paideia University that pioneered the operation of a virtual university in 1993 just as the World-Wide Web (WWW) began.

Paideia University [16] began in 1973 as a type of 'school without walls' offering 'peer to peer' support and then renewed its curriculum model and went online on the Web in 1993, registered as an Education Foundation (Stichting) in Amsterdam. Paideia offered arts degrees via peer interaction with a global e-learning perspective and desire for local action. Undergraduate and Postgraduate interdisciplinary studies in Liberal and Policy Studies were the core curriculum. Development of a blended learning and research model through lifelong peer interaction began via the Web in 1995 with ICT and research support from Charles Sturt University (CSU)) in Australia.

## 1.1     Background

Paideia held the belief that the regular infusion of new media and interfaces not only supported the social constructivist theory [1], [31] but also developed an interest and self-efficacy with ICT among the learners that in turn, motivated and enhanced their social learning experiences together. All participants could use ICT facilities to extend and be part of the holistic and conventional adult learning practices and be free to  free explore and share the new ICT learning experiences offered by being online

topgether. The research specifically targeted how ICT facilities could be used to support social constructivism in a lifelong adult e-learning community.

A collaborative learner-centred design approach [13] was used at Paideia to develop the e-learning environment using open or community source software applications available via the Internet such as the social virtual reality pioneer server software-lamdaMOO [10] and AussieMOO [17], hosted at Charles Sturt University. This meant that the development of self-efficacy with ICT was a fundamental competency requirement for all participants. This collaborative learner-centred design approach at Paideia University contrasted with the top-down conventional institutional approach represented by its partner Charles Sturt University. The involvement of participants in a collaborative design approach also allowed for a more detailed study of their interactions, relationships and processes via ethnography.

While retaining the values of conventional study and using new ICT, Paideia University in 2013 is still providing a small scale e-learning and blended research experience via social constructivism [1], [18], [31]. Paideia University still strives to be a leader among universities providing an alternative life-long-learning opportunity to people throughout the world. Such an alternative pathway in higher education is not rivaled by the development of the Massive Open Online Courses (MOOCs) but would look to include the MOOC platform [25] as another innovation to consider in its own operation and growth.

## 2    Methodology

The key question being investigated was about educational value of ICT in collaborative learning:

> What are the facilities in an e-learning environment that support social constructivism?

This evaluative research used a hybrid methodology by combining and applying both ethnography and action research methods [22] to the e-learning environment as Ethnographic Action Research [30]. This study demonstrated that it was a useful methodology for collaborative design of an e-learning environment with the ICT as an enabler of an effective and sustainable learning community or network. The research also examined the patterns of change that the use of new technology had upon the andragogy, learning theory, curriculum model and the holistic educational value of the ICT facilities in supporting learning and knowledge building through social constructivism. Data was collected over fifteen years (1995-2010) using three ethnographic action research cycles in this continuous study of the online learning community at Paideia University. A focus group was formed to guide e-learning environment development, participant progress and change over time. The results included interpreted cases and arguments presented as ten key findings about how the ICT facilities in an e-learning environment support social constructivism theory and its mechanisms. Those ICT facilities supporting peer-learning interaction, dynamic curriculum models and social constructivism were at the core of building and enabling an

effective e-learning community and lifelong learning network. Virtual communities take longer to build and sustain beyond the length of time in a normal unit of work (course or subject) and exhibit a five-year pattern for cyclical changes to the ICT facilities and the curriculum model in use.

## 3      Research Findings

During the 15-year study, the curriculum model changed three times almost at the same time as the community moved to a new ICT e-learning environment. Unlike a semester unit, a lifelong learning community will tend to renew itself in a 5-year cycle of curriculum change and use of ICT.

**Table 1.** The Cyclic Pattern of Changes in the Lifelong E-learning Environment

| ICT trends in E-learning | E-learning environment changes | Year |
|---|---|---|
| Computer conferencing (CMC) | IRC and Website in Amsterdam | 1994 |
| Virtual worlds and social virtual reality [10], [17] | AussieMOO [17]; PAIDEIA-L mailing list and Website in Amsterdam | 1995 |
| Web and multimedia | enCore MOO interface and ZOPE | 2000 |
| Web 2.0 and Integrated learning environments [19] | MOODLE [15] and Website as one integrated tool (blogs, forums, Podcasts) | 2005 |
| Social Media and MOOC [25] | Yammer, Google+, Class2Go | 2010+ |

The RITA model using four enablers to describe an ICT supported social constructivist lifelong learning community was proposed (Fig. 1). It is based on a deeper understanding of four concepts: Relevance, Involvement, Technology and Acceptance [29]. The role of Technology in enabling social constructivism via development of self-efficacy with ICT, peer learning techniques, acceptance of learner-centred control of ICT facilities is part of the learning agenda of curriculum model. Feedback from informants indicated the role of Involvement by reflection and interpretive practice, also at the core of the model. These enablers are coupled to an understanding of the cognitive and social/situational context of participants [1], [23] and the importance of self-efficacy with ICT in scaffolding regular engagement with each other. This model is important as a guide to others educators keen to shift the e-learning focus to peer learning techniques and develop an online community or learning network that allows all participants to co-learn and act as "associates in practice" in Vygotsky's Zone of Proximal Development [31]. The RITA model supports a similar paradigm where relevance of the curriculum model, social presence and the co-creation of knowledge by participants is connected to professional practice as suggested by [21].
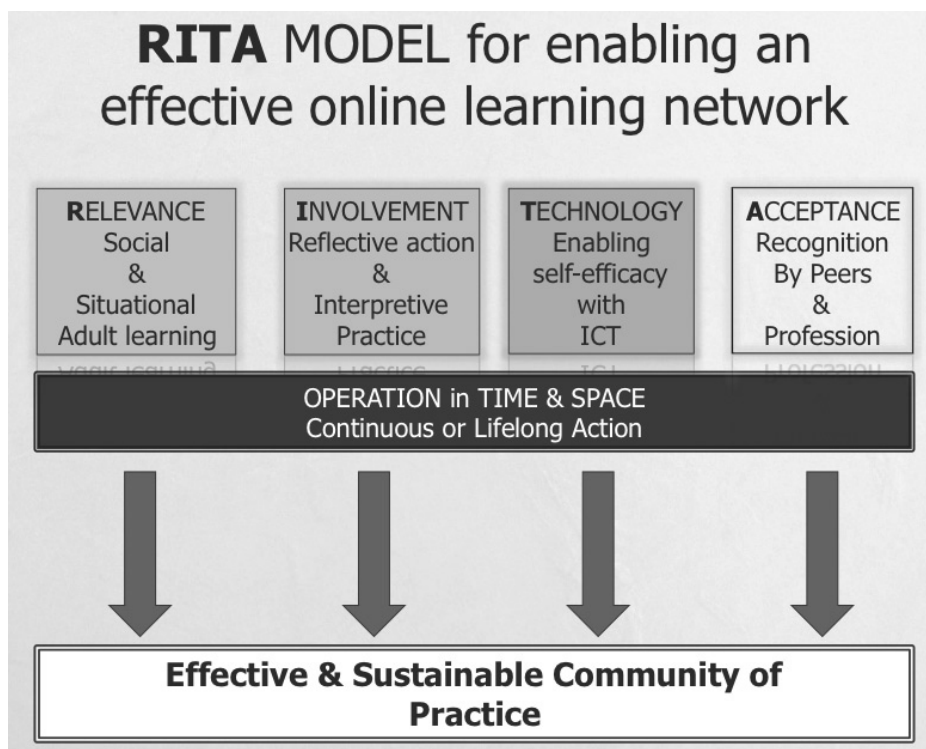
**Fig. 1.** RITA model: enablers for a social constructivist learning community

## 4      Conclusions

Table 2 lists the results into ten key findings that encapsulate and define what it means by the term "adjacent learners", to co-learn in the moment and be associates in practice as a lifelong online learning community.

**Table 2.** The TEN key findings on how ICT supports social constructivism

1.  The 'RITA model for enabling an effective online learning network' is based on an understanding of the cognitive, social/situational contexts education through continuous or regular engagement with ICT facilities and described how effective online learning communities and social constructivism can operate over the time and space dimensions of e-learning (lifelong learning).
2.  The study revealed a 5-year Pattern for Cyclical Change in the ICT e-learning environment and facilities for interaction and curriculum renewal. Five types of open source ICT tools and three co-existing curriculum models were identified and used and all required scaffolding.
3.  'MOO Wizards' operate in the Zone of Proximal Development (ZPD) [31] by scaffolding learners with virtual world building, interface design, user training and support.
4.  ICT facilities that develop rapid self-efficacy with using ICT e-learning environments (supporting digital literacy) are a fundamental learning path within each curriculum model through both self-directed and group-directed discovery.

5. Time together with other members: Online communities take longer to build, sustain and reach full potential than the length of a regular semester or 12-week unit of learning as a course or subject.
6. The educational and research value of the learning journey research approach for interpretive practice in learning and teaching is a rewarding and reflexive experience for scholarly research;
7. Online communities discover and use the new modalities offered by the net-working of individual personal learning networks via use of social media.
8. Effective evaluation of participants is by continuous peer assessment of ePortfolios; efficacy with ICT; contributions made to the dialogue; project work and action. This is open and subject to moderation by external bench-marks.
9. The dynamic curriculum models are complementary to the traditional adult learning practices. Paideia University supports improvisation and the asymptotic nature of learning within multiple disciplines as all participants seek to operate as 'Associates in Practice' in a blended learning and blended research model [27-28].
10. Higher education institutions are less resistant and supportive towards letting go over control and access for teachers and students to the new ICT and social media that pushes education towards the RITA model for a richer and context-based, social/situational learning environment.

The findings and conclusion also offer a historical narrative of ICT in higher education over that period and proposed a curriculum model for enabling effective online learning networks in the future. The methodology can be described as interpretive research, as a learning journey by all participants. The original Paideia has been transformed in recent years into a lifelong independent co-learning network [21], [26] and continues operating as Border Studies, and is the resulting non-traditional, inter-professional lifelong learning community or network that was built and sustained over a period of fifteen years.

## 5      Discussion

A successful online learning community takes shape as a woven tapestry over time. To build and sustain a unique online learning community or social learning network like Paideia University since 1994 required weaving together new ICT interfaces and metaphors, stages of development of the e-learning environment, use of the appropriate mechanisms of social constructivism, changing curriculum models, digital literacy and self-efficacy with online learning and participant action.

Such integrated longitudinal development is part of the process of building and sustaining a lifelong social learning network, so all educators or those self-organized adult learners seeking to build their own social learning networks for their semester course or similar short courses may not achieve a desired level of efficiency and

sustainability in such as a limited time frame. Social media has quickly infused, re-newed and re-engineered professional practice online.

The World-Wide Web is almost 25-years old with Web 2.0 described as the 'social Web'. Web history has its own lessons for change in adult e-learning since the original Web of information to the social, semantic and data Web metamorphosis in more recent times. The Web Science Trust [32] supports the future development of open data analytics and interdisciplinary involvement in its development. If Web 4.0 exists then it must be the Interdisciplinary Web.

The path to an effective and sustainable learning network in universities is at the program or degree level over several years. This research showed that online learning communities require nurturing and can be sustained beyond the use of new ICT, course boundaries or borders and grow further into a lifelong learning journey for participants. Paideia University is now a Blended Research University that represents a holistic model for the way adult learning should occur in a digital age by using interdisciplinary research teams and Web technology to enhance global learning and research practices.

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