Learner Generated Contexts: a framework to support the effective use of technology to support learning.

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ABSTRACT
In this chapter we present the concept of Learner Generated Contexts as a potential framework through which the more effective use of technology to support learning might be supported and engendered. In particular, we concentrate upon the theoretical grounding for consideration of Learner Generated Contexts as a context-based model and organizing principle for designing learning and as a means of elucidating what institutional practices might support or retard their development. In so doing, we offer a model for the learning-teaching process based upon the Russian concept of "obuchenie" and a reconsideration of pedagogic design based upon a combinatory model termed the "PAH continuum".

Keywords: Pedagogy, learner goals, emerging technologies, educational technology, open learning, social learning, HCI, participatory design, knowledge models, Web 2.0, open context model, obuchenie, PAH, learner generated contexts, cognition, epistemic cognition, metacognition

INTRODUCTION

The rapid development of technologies has made it possible for people to access data and resources in their environment, to share information in multimedia formats, to collaborate, publish and track their lives beyond the constraints of physical space or temporal constraint. In this paper we develop the concept of a *Learner Generated Context (LGC):* a way to describe learning-teaching processes that takes account of these advances. It is based around the democratic principle that:

"ordinary people are intrinsic participants in technical processes. They can transform technology through enlarging the margin of manoeuvre they already enjoy in the technical networks in which they are enrolled."

(Feenberg, 2002, page 174).

The agenda is not about technology use *per se*. Nonetheless the issues we highlight here have been prompted by thinking about the affordances and potentials of a range of technologies and practice; web 2.0, m-learning, participative media, learning design and learning space design. They have also been prompted by the convergence of parallel developments and observations including:

Technology Developments. A brief history of the last 15 years reveals the following features. An internet and the worldwide web that opened up our ability to publish and took us from hypertext to multimedia, brought us networking and enabled people to communicate in more places: to socialize, collaborate, co-author and co-publish. Increased availability of digital devices such as cameras and sensors enabling us to digitally capture and store more about our environment. Mobile, ubiquitous and pervasive technologies offer multiple choices about how we keep in touch. One of the consequences of these digital developments is to enable users to generate content; user outputs can be seen on blogs, wikis, and social networks such as YouTube, Facebook, MySpace and Flickr. End-users are now active content producers across online and offline environments.

Concerns about the current education system and in particular the role of technology. There is mixed evidence about the effectiveness of current educational technology use (du Boulay, Coultas and Luckin, 2007; Selwyn, 2007, for example), recognition that learners often dumb down their expectations with respect to technology when they enter formal educational establishments (Putnam, 2007) and growing recognition of the need for policy reform.

A blurring of the boundaries between designers and users. From the introduction of the first examples of technologies that were designed to support learning some have built systems without considering users but some have focused on user needs. This has supported an increasing trend towards participatory design methods.

The convergence of these parallel developments results in a situation where more people have the technological means to engage in system reform. There is the potential for both a participatory democracy and for technological and design reforms to enrich learners' educational experiences, making them more effective learners and participants in a reform agenda. However, there is a particular tension within the current system around the extent to which formal educational institutions can cope with the more informal communicative approaches to digital interactions that new generations of learners possess (Luckin et al., 2008; Clark et al., 2009).

LGC is about trying to find a *framework* that might support the more effective use of technology to support learning. It is about opening up the process through which knowledge is constructed and understanding is gained. The enterprise of the LGC group is precipitated by a recognition that a combination of factors have brought us to a particular point in the evolution of learning with technology that requires us to reflect on how things might work better. Our work is inherently interdisciplinary and our, admittedly ambitious, desire is to appeal to and encompass a huge sphere of activity that includes a great deal of education.

The current working definition of a Learner Generated Context is "a context created by people interacting together with a common, self-defined learning goal. The key aspect of

Learner Generated Contexts is that they are generated through the enterprise of those who would previously have been consumers in a context created for them".

The LGC group share common concerns to ensure that learning is a participatory experience that is about: participative technology, participative education and participative democracy. The current popularity amongst learners for the creation and publication of their own material, combined with the open content and open source initiatives offer the tools for increased educational democracy. These tools support the potential for the boundaries to be redrawn between learners and teachers, formal and informal education and the producers and consumers of knowledge. However, learners still need support to scaffold their skills and understanding (Wood, Bruner & Ross, 1976) as part of a Learner Generated Context process.

In this paper we present the latest iteration of our specification for Learner Generated Contexts. In particular we concentrate upon their theoretical grounding as we consider how we can facilitate the development of context-based models as the organizing principle for designing learning and what institutional practices might support or retard their development. We offer a model for the teaching-learning process based upon the Russian concept of 'obuchenie'.

WHAT IS A LEARNER GENERATED CONTEXT?

The Learner Generated Context concept is based upon the description of an educational context as a learner-centric Ecology of Resources (Luckin, 2008). These resources may be organized to meet the needs of a learner or group of learners by various individuals including teachers, parents, the government and learners themselves. The resources within a learner's ecology include:

- the *subject* they are learning, the way in which it is recognized and validated as a skill or *knowledge*, and the epistemic community built around the subject in formal and informal ways;
- the social and physical *environments* with which the learner interacts and the way in which these are organized;
- the *resources* both human, such as peers, teachers, parents and inanimate, such as the communications technologies (books, handouts, the WWW, etc.) which allow the learner access to the knowledge of others, and those that allow us to access information about the world such as microscopes and telescopes;

These context elements are situated within the prior cognitive structures which exist both in the learner's subjective consciousness and the objective world, embedded into technologies, organizations and other "persistent structures" (Nardi, 1996) such as norms and legal procedures. (For a detailed exploration of the consequences of this environment- and resource-based approach to the design of learning, see Whitworth 2009.)

This definition of context moves away from the idea that a context is a physical location to the idea that the context is the combination of interactions a learner experiences across multiple physical spaces and times. It is personal to them. The proposition made by Learner Generated Contexts is that through a constant series of adjustments to this dynamic environment, learners can now take greater agency in the creation of their learning contexts. The implications of this for policy and pedagogy are considerable. (See Luckin, in press;

Luckin, du Boulay, Smith, Underwood, Fitzpatrick, Holmberg, Kerawalla, Tunley, Brewster & Pearce, 2005; Luckin, Shurville & Browne, 2007 for more detail on the learner centric ecology of resources framework and for more detailed examples).

SECTION 1: THE CASE FOR A CONTEXT-BASED MODEL OF EDUCATION/LEARNING

In this section we consider what we mean by context and what a context-based model for education and learning might look like. As part of the discussion we consider other models and what makes them inadequate, including a consideration of formal and informal learning. We question what a context-based model could offer, and why it might be better, before concluding the section with a consideration of how we might facilitate the development of context-based models such as Learner Generated Contexts.

What do we mean by context and what might a context-based model be like?

The suggestion that we should explore the educational context in which learning takes place is not new. There are examples within studies of contemporary educational practice that contribute descriptions of *classrooms as Social Learning Contexts* (Mercer, 1992) in which the organization of the learning resources, including the computer, influence the manner in which these resources are used and the nature of the context itself. We know that each individual class will have its own unique culture and brand of learning environment (Smagorinsky & Fly, 1993). Previous research has also indicated that the impact of technology upon learning is heavily dependent upon the specifics of the educational context into which the technology is introduced (Wood, Underwood & Avis, 1999). This work is useful in confirming the importance of looking at the wider environment within which educational interactions occur, but it is only part of the story for LGC. These research examples tend to look at environmental locations with fixed physical or temporal boundaries rather than the personal, learner-centric and learner-generated contexts that can encompass multiple locations, which are at the heart of this article.

In the introduction we described context as something that was not tied to a physical location, nor any specific virtual location, but rather as something that belongs to an individual and is created through their interactions in the world. Every person's context is individual to them and is the ultimate form of personalization of the world and of the elements of the world which can contribute to learning. This view of context is not inconsistent with ideas from computer scientists such as Dey (2001) who consider a context to be defined by the information that characterizes a particular situation with respect to an entity, which in our case is a learner or a group of learners; Dourish (2004) highlights the importance of human activity and Chalmers (2004) adds an individual's experience and history to the mix. Following this approach, a context can be described as a situation defined through the relationships and interactions between the elements within that situation over time. For a learner, a context is a situation defined through interactions in and with the world that are themselves historically situated and culturally idiosyncratic. In the case of the learner, social interactions are of particular importance (Vygotsky, 1978, 1986).

This approach is also related to views proposed from an activity theory perspective by writers such as Nardi (1996) who see context as "not an outer container or shell inside of which people behave in certain ways. People consciously and deliberately generate contexts (activities) in part through their own objects" (Nardi, 1996 page 76). Context is a constant,

dynamic interaction between internal and external forces. To an extent contexts are consciously and deliberately generated, but because prior practices and decisions are embedded in the infrastructural resources on which they must draw, actors do not have complete freedom to generate a context. The level of control they *do* have over their context - particularly its technostructural parameters (see below) - is exactly what the learner-generated contexts model seeks to increase; to move learners out of a subordinate relationship to their context and into one of greater control.

The Ecology of Resources model of context offers a definition of context as a set of inter-related resource elements, including people and objects, the interactions between which define a particular context. It offers a description of the categories of elements that need to be taken into account when trying to explore the interactions that constitute a particular context. These categories include those noted in the introduction (skills, resources, prior cognitive schema, and so on); this idea is an essentially dynamic one. However, the nature of the interactions that our learner has with these different types of contextual element is filtered in some way. For example, knowledge and skills are filtered, organized and validated through concepts such as "curriculum" and "qualifications". These are socially constructed concepts that have become reified through having been *designed into* the way education is organized. By doing so they become removed from public scrutiny and intervention, despite the fact that "public intervention may actually improve technology by addressing problems ignored by vested interests entrenched in the design process" (Feenberg 1998, page 89). Such filters impose a certain structure and fixity on the dynamic context.

What other models are there? Why are they inadequate?

Educational ideas often have both a static, objective and quantifiable expression, and a more dynamic, (inter)subjective and qualitative form (cf. Carr and Kemmis 1986). As an illustration, consider the Zone of Proximal Development. This could be described quantitatively as "[t]he discrepancy between a child's actual mental age and the level he reaches in solving problems with assistance" (Vygotsky 1986 page 187). However, a more dynamic, qualitative definition would define the ZPD as something which must be created through instructional interactions that 'awaken' the internal developmental processes which can only operate when the child is interacting with other people in the environment (Vygotsky 1978). This split reflects schisms often discussed in social theory literature between a technical or instrumental rationality and a more humanist or communicative perspective.

The Ecology of Resources model could be viewed statically, as merely a set of elements which could be "optimized" by design and organizational practice. Most formally constituted organizations have within them a *technostructure* (Mintzberg 1989). Technostructures are where technology and organization meet: they are organizational artefacts which operationalise the procedures, systems and technologies that control the work of the other wings of the organization, particularly the professional core and the support staff. In universities, historically, technostructures have been weak (Mintzberg, 1989), but the increased use of ICT to not just teach but administer the university does represent an organizational transformation; it also represents a move towards a more static and less flexible approach to the support of learning. Centralization and consolidation occur through the "closure" of technological options (Feenberg 1998). As a result, there can be a lack of freedom to experiment with new technological possibilities, due to a strengthening of the filters around the available resources. There is, of course, a role for standardization in design

(Norman 1990): but as a protection against arbitrariness, not as something which "closes" the possibility of further adaptation and innovation.

Models that currently underpin the education system are not communicative and learner-centric, but instrumental and organization-centric.

The organizational problems posed to HE by the rise of ICT have been recognized even by relatively organization-centric writers. Bates (2000), for instance, advocated addressing staff development of technology at an organizational level by supplying resources for "Lone Rangers" - self-motivated, self-empowered teaching faculty, engaging in experimentation in their local context. But Bates later withdrew this support, claiming that the more mature organizational approach to technology was to centralize (for a critique of this view see Whitworth and Benson 2007).

Diana Laurillard's "conversational model" of educational technology is based on pedagogical principles, though this is not quite the same as being "learner-centric". This model considers how students and teachers describe and re-describe their conception of the world, through technologies. Laurillard then takes this pedagogical idea and examines its impact upon organizational infrastructures. She specifically states that the infrastructure must *learn*, be reflexive: "An organizational infrastructure for educational technology... must enable the system to learn about itself. The decision-making hierarchy must be in a position to receive feedback on the effects of its decisions at each level in exactly the same way that the student needs feedback on their interactions with the world in order to learn." (Laurillard 2002: 237). Garnett and Ecclesfield call this "developing the organizational architecture of participation" (2008)

Feedback mechanisms are, however, identifiable as filters, rather than as communicative exchanges which help dynamically develop the Ecology of Resources. In order to really be effective feedback has the potential to *transform practice*, not just provide information about that practice to "objective" actors concerned to assess the performance of an existing technostructural configuration. The dynamic nature of context, and the way it transcends easy physical and temporal definition, means that an external, "objective" researcher or observer can only ever hope to identify a snapshot of a particular context at a particular moment in time. To the individual or group at the centre of a context, however, it is lived experience: but that does not mean that the dynamic development of context is a process which takes place in the forefront of conscious awareness. The consequences of this view will be explored below, but first we will look at formal and informal learning issues.

How we might facilitate the development of context-based models such as Learner Generated Contexts.

If we accept that a context-based model is worthy of consideration then we need to explore how such models might be developed and implemented. Here we turn our attention in particular to the question of design.

Design "choices" are not free but in fact are greatly constrained by the "persistent structures" (Nardi 1996) in which they are made. Organizations embed values, procedures, systematized ways of working and even thinking, not only into the "objective" technostructure, but into their intersubjective communications networks (the use of *language* can restrict choice) and the subjective consciousnesses of their members. Organizations *push* certain "cognitive

schema" at their members (Blaug 2007) and this is why many activities within organizations take place beneath the level of conscious awareness. On the one hand, this is necessary, for no organization could function if its members were continually questioning the premises of even the most basic activity, on the other hand, this can retard "double-loop learning" (Argyris 1999) and thus the organization's ability to learn and adapt.

The problem with "design" as an industrial process is that it is specifically oriented towards the reduction of choice. Designed systems are built around assumptions as to what activities will take place within them, what mental models will govern these activities, and what information best fits these mental models. For any such system, processing is eased when incoming data are schema-consistent, and data that are inconsistent with this schema can be filtered out and ignored (see Blaug 2007; via Augoustinos and Walker 1996). Ultimately, Blaug claims (2007) that we cede portions of our cognition to the organization and the technologies which make it up: we allow these designed technostructures to do a lot of our thinking for us. All the context-based methodologies Nardi describes recognise that there is a delegation of cognition to the system (distributed cognition) and, to an extent, activity theory allows for this explicitly: even situated action (the most individualized and spontaneous of these approaches) allows for the presence of "routines" which govern action at an unconscious level. Yet this is a "deeply passive" (Blaug 2007) relationship on behalf of the individual; the individual *and their context* become subordinate to the technostructure, rather than active within it, and able to transform it if necessary (Feenberg 1998).

Learner-generated contexts stem not from organizational imperatives but more from the tradition of autonomous action (more redolent of non-formal learning traditions). They challenge those validity claims - claims to technological pre-eminence, the control over meaning and personal context - which are then not validated by the organizational environment within which social actors function (see Feenberg 2002; via de Certeau 1980). They are "outbreaks of democracy" (Blaug 1999); whether they take place outside the formally constituted educational sphere, as people develop their own, network-based applications of technology (see Rheingold 2002), or perhaps within it, as subordinate groups in an organization "subvert" its dominant technostructural systems (see Wenger 1998; Benson and Whitworth 2007). Through these actions, learners increase their *awareness* of the possibilities - lifting up operations, unconscious ways of working in a technostructural context, and creatively playing with them - but also critically transforming them.

The principle of LGC begins with an appreciation of the tension that is building in the current system in which learners are using technology more creatively and effectively outside of the education system than within it (Putnam 2007). Teachers often do not have as high a level of technical skills as their students and in which it is hard for many of them to find a way to make that the basis for a positive learning experience for students and for themselves. But this suggests that technology is a "problem type" in which even younger learners can potentially validate the claims of teachers - and vice versa (Young, 1990).

This calls into question the role of "design" in the development of an Ecology of Resources. Learners are usually considered either the "customers" or "products" of educational organizations. When pedagogical processes are discussed they have the learner in mind, but the relationship is rarely discussed as one in which learners *generate* pedagogical processes. The idea of learner-generated *content* is broadly used, particularly in constructivist pedagogy. But this content is being produced in a context which learners act within, consume, but do not

generate or transform. LGC is what happens because a design-based approach *stems from* the cognitive separation between learners and the organization; it cannot relieve it.

The idea of learner-generated *contexts* forces us to reassess the validity of the "filter" that is the sharp boundaries around the roles of teacher and learner. Hence our liking for the term *obuchenie* which means both teaching and learning. It recognizes that critical pedagogy and the internal critique of self-reflexive staff development are related (Young 1990; Carr and Kemmis 1986). More significantly, this relationship is what supports LGC against criticisms that it stands in a fundamental opposition to the authority of the teacher. This idea will now be developed further, starting with a discussion of the various "ogys" - broadly-based conceptions of teaching strategy at different stages of cognitive development.

SECTION 2: THE LEARNER GENERATED CONTEXT PROCESS

In the previous section we presented a case for the development of context-based models of learning and suggested that a starting point for thinking about the nature of the elements that might be active in the construction of learning contexts can be found in the Ecology of Resources model. In this section we consider what types of interactions between these context elements might support the construction of effective learning contexts. In particular we consider the interactions between teachers and learners and the issue of pedagogy.

To start the discussion we consider the need to integrate the roles of learners as consumers and producers in the learning process. As we highlighted in the introduction to this paper we are seeing the rapid increase in the variety and availability of resources and tools that enable people to easily create and publish their own materials and to access those created by others. This extends the capacity for learning context creation beyond teachers, academics, designers and policy makers. However, this gives rise to the following question: How can we integrate the roles of learners as consumers and producers in the learning process? In our view of LGC, we get role shifts for both the learner and teacher or instructor. These role shifts can have a positive and empowering impact on learner and teacher. However, the role shifts may also cause disruption in formal education systems and such change may consequently be resisted. Various issues are emerging, one of which is our focus here: the need to consider what pedagogical practices or non-formal learning patterns might work in a context-based learning model.

The OGY model

We have previously adopted a hierarchical view on moves away from the term *pedagogy* towards a learner-directed style of learning, such as that described by Knowles (1984) as *Andragogy* and the more self-determined learning paradigm proposed by Hase and Kenyon (2000) referred to as *Heutagogy*. This reflects the Greek origins of the words (child-leading, adult-leading and self-leading respectively).

The increased use and development of social, collaborative and distributed learning environments and the blurring of the boundaries between formal and non-formal learning requires that we move on from these traditional, developmental and temporally situated understandings of what it means to learn and what it means to be a learner. We are entering a space where teachers are learners and students are teachers (TES, 2007), where physical boundaries are being replaced or supported by virtual ones and the teacher is no longer the sole expert.

We are interested in developing the idea of a learning continuum from Pedagogy through Andragogy to Heutagogy as part of a process in education where the "teacher" is developing learning skills in the learner. In the e-mature learner, Anderson (2006) characterized this as "in *pedagogy*, what is to be learnt, and how, is both determined and directed by the teacher; in *andragogy*, it is determined by the teacher and directed by the learner; in *heutagogy*, both determination and direction shift to the learner. Normally, concepts of pedagogy, andragogy and heutagogy are associated with age, sector or the formal stage of learner development - for example, pedagogy with schools, andragogy with adult education and heutagogy with doctoral research". O'Beirne comments in response to Anderson that he is concerned about:

"the lack of "social" context. What I mean is that a learner situated in the Heutagogy is not necessarily determining her learning, i.e. not self-determining and self-directing but is involved in a more socio-constructivist type learning where, as a heutagogical learner she avails of, is influenced by, develops, contributes to, criticizes and ultimately reflects on, a social networking scenario. So I think that with Heutagogy yes there is a shift to the learner but not the learner alone in isolation."

(see http://learnergeneratedcontexts.pbwiki.com/PAH)

He questions whether talking of a continuum implies that they are mutually exclusive when we are thinking of the relationship as being "cumulative".

We argue that the value in a pedagogic approach is in developing the learner's understanding of a subject. The value in an andragogic approach is in developing an understanding of how to negotiate a way through the learning process. The value in a heutagogic approach is in developing the understanding that you are empowered to *look at the learning context afresh* and take decisions in that context. So this developmental view implies that learners need to understand how subjects are constructed, what is canonical and, in the sense of learner generated contexts, that learning is a social process of discussion, negotiation and partnership, where learning enables you to go out into the world equipped not only to solve problems, but also to identify new areas worthy of your attention. Heutagogy must now also reflect the embedding of certain educational values into systems of control: critical reflection on the technologies that one is presented with to construct a context and the transformation of these technologies. We would further argue that learners have to be equipped to manage their own learning and that we need to be educating them in those skills through an understanding of this (cumulative) "PAH continuum". Another way of describing this development process could be that of developing cognition, meta-cognition and epistemic cognition in the learner (see Table 1).

Table 1: The PAH Continuum

|	**Pedagogy**	**Andragogy**	**Heutagogy**
Locus of Control	teacher	learner	learner
Educational sector	schools	adult education	doctoral research
Cognition Level	cognitive	metacognitive	epistemic
Knowledge Production Context	subject understanding	process negotiation	context shaping

The OBUCHENIE context model

In addition to consideration of this "PAH continuum" a closer investigation of the socio-cultural roots of the Ecology of Resources model (see Luckin, 2008 for a fuller description) offers an additional construct that contributes a desirable 'fuzziness' to the debate – that of 'obuchenie'. Ambiguities around the Russian word *obuchenie* and the search for an apt translation of this Vygotskian term have been the subject of much debate over the years (Daydov & Kerr, 1995; Simon, 1987; Daniels, 2001; Clarke, 2003; LeBlanc and Bearison, 2004). It has been variably described as 'instruction' (Van der Veer & Valsiner, 1995), 'teaching/learning' (Clarke, 2003), 'teaching-and-learning' (Wells & Claxton, 2003, p152), 'teaching-learning' (Davydov, 1995) and 'learning' (Wertsch & Somer, 1995, p332). LeBlanc and Bearison (2004), considering *obuchenie* in formal educational contexts suggest that it characterizes interactions in the zone of proximal development which are "conceptualized less as displays of unidirectional guidance or support on the part of teachers to learners and more as bi-directional displays of knowledge transformed through the course of dyadic interaction", suggesting that the relationship between teacher and a learner is "characterized by a gradual exchange of knowledge that results in mutual cognitive growth". Sutton, points to *obuchenie* as "a phenomenon made up of mutually interpenetrating opposites" (1980, p169-170), an argument supported by Moll (2000) who, addressing the concept of *obuchenie* in informal contexts, e.g. amongst peers or in out-of-school contexts, suggests that interactions framed as *obuchenie* have the potential to mutually enhance the cognitive approach of both teacher and learner as marked by the coordination of self-regulatory behaviors in a process of collaboration.

In this paper, however, we propose that it is the very fuzziness of the word *obuchenie* that makes it an apt construct for understanding the potentiality of learner generated contexts and, in particular, the permeable nature of the 'implicit' boundaries between teaching and learning by looking at the principles of PAH and combining these with the notion of obuchenie.

In contrast to traditional perceptions of PAH, the *obuchenie* context model integrates PAH with the Ecology of Resources model and views it not as a developmental hierarchy of dyadic or bi-directional interactions between teachers and learners but rather as a complex "heterarchical" continuum characterized by multiple points of intersection and an evolving reciprocity of relations and interactions (Fig. 2) which fall along an 'other-regulated : self-regulated' continuum.

The traditional perception of a multi-levelled, bi-directional continuum of teaching/learning in which 'teacher' influence is seen to decrease as 'learner' independence increases is reshaped (see figure 1 below).
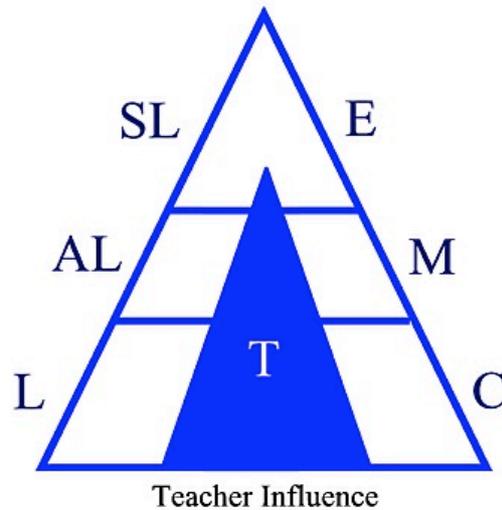
L - Learner   C - Cognitive
AL - Advanced Learner   M - Metacognitive
SL - Self-Directed Learner   E - Epistemic

Figure 1 Teacher Influence

In turn, the combination of the Ecology of Resources and the acceptance of a fuzzy-field concept of *obuchenie* together generate the potential for understanding the systemic interaction of teacher/learner in which the elements of PAH are shaped by the interactions of the teacher/learner within the available ecology of resources such that their individual interests/motivations lead to "agile configurations" in the process of knowledge construction so that at any one moment, teacher may be learner, learner may be teacher and both may become mutually conditioned co-learners. We refer to this as the *obuchenie* context model.

T - Teacher   P - Pedagogy
L - Learner   A - Androgogy
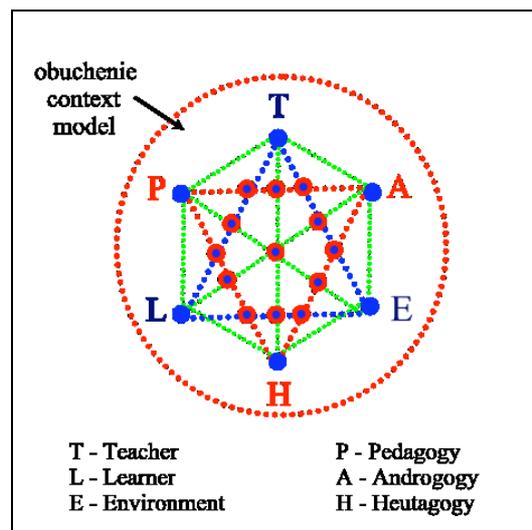E - Environment   H - Heutagogy

Figure 2 - The Obuchenie Context Model

In this way, the obuchenie context model empowers actors within the learner generated context, in a mutually beneficial process, to generate new knowledge models in the obuchenie-led fragmentation of traditional discourses in the life-world of the organization.

This, in turn, opens up networks of communication within the system, enabling both teacher and learner to reap the mutual benefit of a certain parity of voice reflected in the facilitation of self-motivated, self-reflexive enquiry between and amongst participants which, in turn, serves to generate a form of democratic, socially-constructed, community-based defense against the traditional levers of control or colonization by the organization.

In these discussions of the processes that need to occur in order to support the creation of a Learner Generated Context we have presented the PAH continuum and the Obuchenie Context Model as new ways of looking at old ideas. We have tried to move consideration of the individual concepts of pedagogy, andragogy, heutagogy and obuchenie into 'context' mode where the boundaries of meaning around the terms are made more flexible and permeable.

The Open Context Model and Web 2.0

Web 2.0 is based on a number of elements: the web as a platform, architecture of participation, small pieces loosely joined (now 'everything is miscellaneous') which are aimed at providing tools for users to pull together resources in ways that make sense to them. It describes a new set of user-centred experiences that are participative and interactive, which Web 2.0 tools enable and support. We think that learner generated contexts are about providing the tools to enable learner-centred experiences and the Open Context Model discusses the set of pedagogical issues that need to be addressed if we are to use the affordances of Web 2.0 to enable and support learner-centred learning. The Open Context Model provides a new pedagogic framework to enable thinking about which Web 2.0 resources we will use for learning and why.

However, we do not think that new pedagogies are sufficient in themselves; we also need a more adaptive and collaborative education system, which we have discussed in more detail in "Colloquium; Developing an Organisational Architecture of Participation" (Garnett and Ecclesfield, 2008). We believe that the future of education will emerge from the changed pedagogic practice described in this chapter, allowing greater co-creation (obuchenie), enabled and supported by appropriate Web 2.0 tools in a transformed educational architecture of participation with "adaptive institutions working across collaborative networks". The LGC group will continue to review and publish on all these factors, including Web 2.0, as they develop and change.

CONCLUSION

In this paper we have argued for a context-based model of learning and education and have proposed that Learner Generated Contexts can provide a framework for open, creative and participatory learning experiences. An LGC is a contributory context that generates a culture of production that is characterized by replenishment and renewal drawing on existing resources that are expanded and enhanced. We have discussed what we mean by context and offered a personalized perspective of a learner's context as *a situation defined through social interactions that are themselves historically situated and culturally idiosyncratic*. We have proposed a learner centric *Ecology of Resources model consisting of a set of inter-related resource elements, including people and objects, the interactions between which provide a particular context*. In addition to this constitutional approach we have also explored the processes that need to occur in order to support the creation of a Learner Generated Context. To this end we have presented the PAH continuum and the Obuchenie Context Model. We have tried to move consideration of the individual concepts of pedagogy, andragogy,

heutagogy and obuchenie into 'context' mode where the boundaries of meaning around the terms are made more flexible and permeable. In this way, *the obuchenie context model empowers actors within the learner generated context*, in a mutually beneficial process, to generate new knowledge models in the obuchenie-led fragmentation of traditional discourses in the lifeworld of the organization.

Acknowledgements

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Key Terms:

learner generated context: a context created by people interacting together with a common, self-defined learning goal. The key aspect of Learner Generated Contexts is that they are generated through the enterprise of those who would previously have been consumers in a context created for them

obuchenie: teaching-learning process, from the Russian – a concept derived by the Russian theorist, Lev Vygotsky

PAH continuum: the idea of a cumulative learning continuum from Pedagogy through Andragogy to Heutagogy as part of a process in education where the "teacher" is developing learning skills in the learner

Participation: involvement in the collaborative, co-created, participatory architecture of the Web 2.0 environment

context elements: socially constructed concepts within the Ecology of Resources model which have been reified in some way

Ecology of Resources: The Ecology of Resources model is a way of characterising a learner, and the interactions that form that learner's context. Based upon Vygotsky's work on the ZPD, it provides an abstract representation of the situations, resources and

relations that can be used to explore the potential benefits of available technologies in a range of learning contexts.

filters: feedback mechanisms constructed around available resources within the Ecology of Resources model

open context model: is a new pedagogic framework that describes a new set of user-centred experiences that are participative and interactive, and discusses the set of pedagogical issues that need to be addressed if we are to use the affordances of Web 2.0 to enable and support learner-centred learning.