

Focus E-learning on Specific Small Target Groups

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Abstract—We hear criticism about the education system in several countries. It's been said that schools and many institutions are experimenting with several old methods of education that are not founded on scientific grounds but on (political) beliefs. Many organizations still deliver training in classrooms or push standard content via the internet to individual employees.

In 2005 Bill Gates called secondary schools an outdated tool for the training of tomorrow's workforce. This paper about e-learning and e-development will show trends in technology and in learning and cooperative behaviors. All these and other factors have an influence on effective learning. It deals with the importance of content-driven and small professionally coached online workgroups supporting a practical guided learning process through questions. This is a promising development that can take away many threats of the current education in schools and Organizations. Also, this approach shows under what conditions the concept of Life Long Learning can be successful. Organizations will have to pursue this if they wish to overcome 'the battle for the hard to find well educated employee'.

The conclusion is straight forward: formulate clear targets for formal and informal learning, know your audience, listen and create for them recognizable conditions and measure the ROI.

Index terms—e-learning, JIT training, social networks, task based learning.

I. WEB 2.0 CONTRIBUTION TO LEARNING AND DEVELOPING

We hear criticism about the education system in several countries. It's been said that schools and many institutions are experimenting with several old methods of education that are not founded on scientific grounds but on (political) beliefs. Many organizations still deliver training in classrooms or push standard content via the internet to individual employees.

In 2005 Bill Gates called secondary schools an outdated tool for the training of tomorrow's workforce. This paper about e-learning and e-development will show trends in technology and in learning and cooperative behaviors. All these and other factors have an influence on effective learning. It deals with the importance of content-driven and small professionally coached online workgroups supporting a practical guided learning process through questions. This is a promising development that can take away many threats of the current education in schools and Organizations. Also, this approach shows under what conditions the concept of Life Long Learning can be successful. Organizations will have to pursue this if they

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II. EFFECTIVE LEARNING AND DEVELOPMENT IN A NETWORK

The way knowledge is gathered has been changed from categorized and hierarchical to networks and an 'ecology' of information. Therefore learning has changed from teaching, reading and exercising to selecting, validating, transforming of information through (social) communities, and getting feedback for the individual and 'domain of knowledge'. Valuable knowledge has become an opinion. Value is determined by functionality and its 'temporary' appraisal by the 'community' to which one belongs. This has a large impact on the way we apply effective e-learning.

In this paper we first take a look at the increasingly accepted concepts of learning and sharing. We position these concepts in the context of the growing influence of web technology on society and organisations. We follow the trends and conclude with which developments may be expected for learning and sharing and which conditions we should create to support learning and developing learning efficiently.

III. THE DEVELOPMENTS OF LEARNING CONCEPTS

Since a couple of years the holding of the Global Learning Institute, the Global Learning Group (GLG) developed e-learning concepts that support learning and sharing as much as possible, if possible in the workplace.

With this in mind we developed a new technology platform. From our experience we have learned that 'pushing content' only can be effective in some exceptional cases. Also, we were inspired by our cooperation with two industry leaders. Here is a quotation from Roger Schank and one from Étienne Wenger:

Drivers (R.Schank, E.Wenger): A major source of low motivation in training is lack of accountability, therefore, try to move the simulation away from the computer and into the real world. Move the feedback away from the computer and to mentors. Ask learners to use available tools and resources: collaboration tools. Have learners work in teams. Having learners work in teams increases accountability since they have to share their deliverables with team mates. Knowledge is not static and "Learning in organizations is first and foremost the ability to negotiate new meanings" (E.Wenger, [1])

Using managers and senior executives as mentors and to review deliverables, giving feedback, also increases accountability. (R.Schank, 2006, 07 [2], [3]).

The first concept for *effective learning* was developed in 2002-04, and was based on the integration of formal and informal learning in organisations. "Learning by doing, task based" suitable for the current task. As much as possible applied in small teams, with the use of existing knowledge and experience (re-use of content) and fit to the learners' deliverance of transmittable and assessable results (deliverables).

The second concept is *Just-In-Time (JIT) and Just-For-Me* training (2006) followed by learning and cooperating in Global Life Long Learning & Working Communities (GL3C, 2007). In our opinion JIT is not just about giving access to online learning modules that are available at all times (e-learning through an intranet) but it's tailor-made and led by a coach or mentor in an "on-the-job" digital pathway.

Both concepts are based on the observation that "A learner who experiences no problems has no questions at all and will learn little new". Therefore, increase the pressure to make something happen. Provide only information and examples when the learner asks for it. Learning to ask questions is a pathway of its own. These pathways follow the principles of "Process oriented learning design: learning communities rather than learning repositories. An effective pathway is "A more or less pre-defined set of activities for individuals (and teams) to gain the qualifications to accomplish a specific pre-defined task" (and can take place without any content, based on tacit knowledge)", R.Koper and others, 2004,05 [4], [5]).

"By obsolete, I mean that our high schools – even when they're working exactly as designed – cannot teach our kids what they need to know todayTraining the workforce of tomorrow with the high schools of today is like trying to teach kids about today's computers on a 50-year-old mainframe. It's the wrong tool for the times". (Bill Gates, 2005 [6]).

In these concepts the role of a trainer/instructor changes significantly.

Old:	To be combined with New:
Managing (pre / post) assessments	Is may be also mentor, moderator, process manager
Answering Notes	May play a role in the team
Building FAQ Databases	Active feedback in different roles from the 'project'
Conference calls	May change the sequence in the learning process
Virtual meeting / classroom	Decides to involve experts / business managers
Moderating Forums	
Managing knowledge documents	

IV. EXAMPLES OF LEARNING PROJECTS

Here are some examples of learning projects where these concepts were applied:

1 - How do we get our trainees billable within 6 weeks? Instead of the usual period of introduction with PowerPoint presentations, roaming about the organisation and distracting others from their work?

> A task-oriented, adaptive learning path for small virtual teams focused on delivering relevant products for the customers, such as project teams should help.

2 - How do we get our team leaders and unit managers be more effective? Currently they attend meetings six hours a day.

> Create learning groups based on current workload constantly faced with deadlines, lack of capacity and changing priorities.

3 - How do we improve the skills and effectiveness of our project teams?

> A learning path managed as a project with sharing of knowledge, cases from the organization, JIT training and support including online feedback sessions with experts.

A success in these projects was also possible by constructing a familiar virtual network and the provision of knowledge and examples at the right moment (Poell, Chivers, van der Krogt, Wildemeersch, 2000 [7]).

Especially in Just-In-Time & Just-for-Me-training / coaching some conditions are decisive. The assumption for JIT training is simple: nobody wants to sit in a classroom. People want to know more / or to be able to at the moment they discover that they need more knowledge / skills to get further / to score. Many smaller organizations do not have the time nor the budget to continually send people to a classroom based course.

V. THREE REASONS FOR JUST IN TIME TRAINING

Organizations mention three reasons for a JIT training of employees.

- 1) Ad-hoc training. There is a project. Some dedicated employees lack certain knowledge or skills. They must be trained immediately, (partly) during deployment. How do we do that? Digitally!
- 2) There are estimates on how many employees with certain skills (qualitative and quantitatively) are needed in the short term. However, all employees are deployed and busy. How do we train at and around the workplace? Digitally!
- 3) All employees have a PDP (Personally Develop Plan) and career perspective. How do we implement these without missing weeks of work every year? Digitally!

The solutions are available and come down to: create small (2-4) virtual teams, collect content (case studies, examples, reports, analyses, effects, feedback), appoint mentors and experts, lead and monitor on-line, set up a database of 'company knowledge / best practices. For organizations: "The ability to learn faster than your competitors may be the only sustainable competitive advantage (Peter Senge)"

VI. THE DEVELOPMENT OF COOPERATION

Many employees belong to the generation grown up with the Internet.

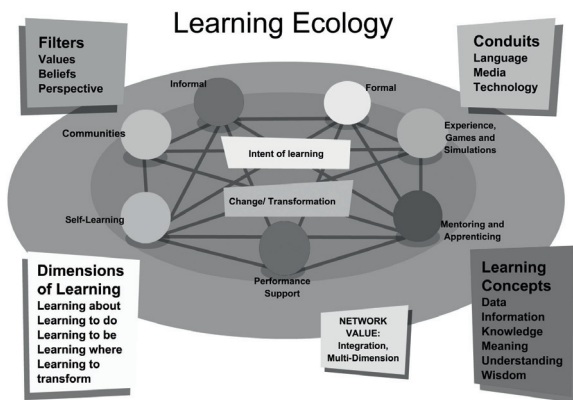
It's "Homo Zappiens", who believe in Connectivism (George Siemens, 2005, 8 and W. Veen, [15]).

Characteristics to be considered in designing learning paths under this scenario are:

"Networked learning is a subset of connectivism, which consists of eight attributes":

- Principle 1: Learning and knowledge rest in diversity of opinions.

- Principle 2: Learning is a process of connecting specialized nodes or information sources.
- Principle 3: Learning may reside in non-human appliances.
- Principle 4: Capacity to know more is more critical than what is currently known.
- Principle 5: Nurturing and maintaining connections is needed to facilitate continual learning.
- Principle 6: Ability to see connections among fields, ideas, and concepts is a core skill.
- Principle 7: Currency (accurate, up-to-date knowledge) is the intent of all connectivism learning activities.
- Principle 8: Decision-making in itself is a learning process. Choosing what to learn and the meaning of incoming information is seen through the lens of a shifting reality. While there is a right answer now, it may be wrong tomorrow due to alterations in the information climate affecting the decision” (Knowing Knowledge, G. Siemens at all, 2006, [8])



Connectivism: Process of creating network

VII. PERSPECTIVE OF ORGANIZATION AND INDIVIDUAL

Learning is a transformation of selected information, observation and discussion to know (comprehend) and flexible know-how to apply in any context. Those views were validated in a number of projects such as those mentioned above, and this is supported by a number of research findings as published in literature. The projects were supported by web technology that supports formal and informal sharing of knowledge, cooperating, and this application is (and is ongoing) adapted to the findings.

Guiding is also the idea of Life Long Learning Communities as launched by the European Commission in 2002 in Lisbon, convinced of progressive 'networked learning' and a growing shortage of well educated labour in the European Community. It is important to consider this development and plan development from both an organizational and individual perspective.

VIII. ORGANIZATIONAL PERSPECTIVE

How effective (effective in learning and efficient in cost, networking learning) they might be, these concepts find a slow entrance, especially in organizations. The main reasons are:

- We have (yet) no experience with e-learning because it is expensive, we are a relatively small organisation,

and we send people to take a course only if it is necessary.

- We have an intranet or an LMS (Learning Management System) with learning modules for our employees and we have long-term contracts with preferred suppliers.
- We are busy integrating the web based teaching modules where possible with the physical courses (blended learning) and that gives a better effect than non-integrated learning.

Another reason why an innovative learning concept finds very slowly its way in the workplace is that in many organisations the line management fully has the responsibility for developing employees. They do not experiment or hire consultants. They want a course on demand and useful on-line modules (their definition of Just-In-Time), or the employee has to ask a colleague for help.

IX. INDIVIDUAL PERSPECTIVE

People are almost continuously on-line via mobile phones, Laptop / PC, PDA's. There is less and less distinction between communications at work, about the work and communication with 'the rest of the world' about work or not.

Learning and development is becoming more informal, ad hoc, where search results are divided into content / answers and are validated in the social group / community (whether or not at work). Truth, accuracy, is determined within the group and has temporary validity.

This phenomenon gets growing attention and we will consider it first from the side of the experts in the many bloggers on the Internet and then on the side of participants in social networks.

X. EXPERTS: WORRIED SOUNDS

There are a number of experts who endorse the world of the Blogs^{9, 10, 11} but a majority, mostly including journalists are very concerned. Experts point out the danger that by the millions of existing weblogs (Blogs) the opinion of the expert (or well informed journalist) is threatened and difficult to find .[12] [13]

- Everyone has his own interpretation of reality and publish it to the world as The Truth. A Cosmos of micro opinions.
- The authority of experts is undermined and diluted in the multitude of opinions.
- 'internet consensus' is getting more important than objective reality.
- Lovink [14]: "Bloggers are washed-out, rejoicing in the dismantlement of centralized structures of knowledge".
- Many blogs concern grudge, malicious pleasure, easy comments as testimonies and denunciations and lead to radicalization because bloggers with matching opinions repeatedly search each other and keep on producing. This way the public space is getting parcelled into reservations where the vote is becoming increasingly extreme.
- In a growing smaller circle one's no longer surprised by unexpected dissenting views (something that may happen in a daily paper of high standards)

- Internet is getting a medium of niches.

How is expertise growing, is it discoverable, is it heard and dialogue encouraged?

By working together in open communities instead of ventilating opinions in blogs. The latter leads in the best case to a comparison of views, not to dialogue. The dialogue slips into the background.

XI. OPINIONS ON SOCIAL NETWORKS

We did a small research project asking members of social networks their opinions about appreciation, behaviour, vision and the future of these kinds of applications.

- 1) The more or less business oriented networks like <http://www.Linkedin.com>; <http://www.Plaxo.com> (Plaxo pulse), <http://www.Xing.com>, Microsoft Live (<http://home.services.spaces.live.com/community> or windows.live.com), but also www.wieowie.nl; www.Spock.com;
- 2) The 'nice to have' networks like www.Hyves.nl; www.MySpace.com; www.wikispaces.com; www.Facebook.com; www.schoolbank.nl; www.1-million-faces.com; www.youtube.com; the dating sites, <http://www.friendster.com>; www.last.fm.
- 3) The idealistic networks like www.thealliancenetwork.org; <http://bridge.thegluecnetwork.com>

The questions came down to three essentials. Below you'll find a summary of the responses (about 25 responses from people all active on the Internet, having a busy life and highly educated).

We also looked at the results from the master thesis of Paul Bouckaert MA, Erasmus University²⁰. This study focuses on the impact of the use of social software (Wiki pages, Weblogs and Instant Messaging) on the quality of data and productivity within seven large organizations.

Question 1 - Is it a bubble? Will it survive and be permanent?

Minority: (small), "yes, a hype, there are too many. I use business networks as address books. I can sort of follow the careers of the people in my network. "Sure hype but a permanent one and it will replace the dating sites because they are much more multifaceted."

Will pass by cause "People free from the computer give and receive more inspiration in life than they would on the worldwide web"

Majority: (large), it's not hype. Some major networks continue to exist because people are already behind the computer taking a break from the day-to-day work. The "digital cup-a-soup". Fewer but larger growing networks. People don't switch lightly. Hopping will increase if you could easily switch from network to network without needing to move your entire profile (and blog, etc.) (Google's working on this). Simple to combine with a busy life.

Question 2 - Is this the result of a growing superficiality and boredom?

The over 45: Yes, it is. Further retardation of society. Watch the TV, it often goes nowhere. People want to be entertained without any effort. The sale of superficial magazines is increasing as well. One doesn't think for himself, but wants to know others' opinions, preferences

and activities. It might be exciting sometimes but you always must keep control. In short, no obligations but contact.

The under 40: Is partly boredom but above all curiosity. I share music and reviews (partly) with strangers. Sometimes I read the latest news at acquaintances when I don't wish to be in contact directly. No boredom but more the idea to be never lonely. Like people who go to sleep with their mobile phone switched on, to be always available and missing nothing. They come home and first thing they do is to put on the PC again, like an addiction. It is more curiosity and anti-loneliness than boredom. I always search for information about people I meet and sometimes that inspires me.

Question 3 – Can we expect a step towards smaller, more substantive communities? The over 45: Yes, only in small confidential groups you can share search information; validate and assess search results, discuss ideas and multiply knowledge. "I put my Blog to a digital working group of people in which I give access to only those that really want to be able to talk substantial and to develop themselves".

The under 40: "No. Preference for live contact when real content does matter". "Yes, one no longer dumps his profile everywhere but is selective and cautious. Within social networks arise sub-communities as well". Man remains a group animal and finds there day and night distraction, solace, one can share experiences, safe and superficial. Chances are that the digital world becomes a second world at the expense of the real society in which one resides daily. Is the real world disappointing? Too individualistic? Not supportive nor listening enough? Networks are a possible alternative. Yes, smaller, familiar with more depth. Large and small networks continue to coexist as discotheques next to small pubs. Only temporary active in communities as it is functional for me.

Bouckaert [20] comes to the conclusion that, on average, within seven (mainly IT companies) using Wikis, Weblogs and Instant Messaging under the right conditions (including guidance and appointments) the productivity increases and that the quality of data varies from well to very high.

XII. CONCLUSION: FOCUS ON SPECIFIC TARGET GROUPS

There is a major difference between the views of the over 40, the "Digital Immigrants" and the under 40, the "Digital Natives". (W. Veen [15])

Digital Natives	Digital Immigrants
Twitch speed	Conventional speed
Parallel processing	Linear processing
Random access	Linear thinking
Graphics first	Text first
Connected	Stand alone
Active	Passive
Play	Work
Payoff	Patience
Fantasy	Reality
Technology as a friend	Technology as foe

The answers obtained from the small research project seem to support the characterization from the table.

However, Life Long (Learning) Communities do not arise out of the blue as well determined in the interim report of the European Commission [16].

The conclusion is that this concept has no chance at all if it is not aimed at specific audiences and communities / networks with a clear objective. These target groups and networks must be operated both inside and outside organizations. Make it worthwhile for people to participate, by providing them content (almost free of charge) and provide them with easy access to experts. The 'bonus' should be clear.

For organizations, it is important to realize that - sometimes many hours a day - employees are online and not necessarily in employment. One can be part of different types of communities and adopting every time a different role (H. Konstapel, 2007 [17]). Organizations can create communities as well.

Community of Practice

This community consists of experts, professionals. They want to share their experience and improve themselves.

Community of Interest

Here are people together who share an interest. They want to know something new and try something out.

Community of Knowledge (Centre of resources)

Knowledge is formalised experience. It's about models and methods.

Community of Affinity

These are the existing customers. They get the most attention (affinity), keep the company / proposer sharp and bring (innovative) ideas.

"The 21st century will be the century of multiple identities" (Etiënne@Wenger.com)

XIII. UPCOMING BATTLE FOR RESOURCES

Although there are few functional Life Long (Learning) Communities, the trends we observe show that the time is ripe for strong growth: the previously mentioned connectivism, networks, and the approachable availability of knowledge, a willingness to share knowledge and cooperate. The occidental world is ageing. That will produce a shortage of well-trained employees.

A major development can be predicted from the cycle-based work of H. Konstapel [18]:

If we examine the global cycles from 4000 BC to the present, we are perfectly capable of predicting the future in 2070. We look at the occidental development with a cycle of 250 years, the sub-cycles of 50 years (Konratiev), and sub-sub cycles of 10 years, particularly from the impact of technology and exponential growth of developing countries.

Today we see the development of new infrastructure, web 2.0, and unbridled economic growth (cf. Asia). In 2010-2020 'Revolution', emotion, battle for resources, solidarity versus big egos. After 2020 further development through revolution, new resources, integration and finally 2060-2070 new global cohesion. (See also J.van Duijn 2007 [19])

XIV. CONCLUSION

Learning and developing are changing. Universities, training institutions, but also e.g. publishers must drastically modify their business or go under. Also, learning in organizations will be an increasingly part of the (temporary) staff personals network. Individualisation, globalization, growth, anti-conformism, have their limitations. We are getting present with the downside, and we see a quest to find the balance with collectivism, localization, limitation, conformism, giving meaning.

Organizations shift towards informal learning, shared responsibility, and flexibility, focused on persons. Supported by IT technology that supports different educational concepts, links to the web, to networks, to communities, with small learning objects and cooperation, JIT: digital workshops for sharing of knowledge, development and communications. If organisations do not know how to create these conditions, they lose the battle of staff and of the market.

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