

The Blogosphere Map

Visualising Microcontent Dissemination – Inspired by Maria Montessori

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The Blogosphere Map was originally presented two years ago at the first *Blogtalk* conference in Vienna by Christian Langreiter and me. I have been asked to reformulate the concept for the Microlearning Conference. The Blogosphere Map hasn't changed a lot but the narrative around it is entirely new.

1. Blogstreet, Blogdex

The Blogosphere Map is a combination und further development of web services like Blogstreet, Technorati, Daypop, Blogdex, and others with the focus on two things:

- The visualising the dissemination of microcontent over time.
- Interaction with graphical representations is more important then plain text.

There are two services that come closest to our concept of the Blogosphere Map: *Blogstreet's Visual Neighbourhood* and *Blogdex*.

Blogstreet (<http://www.blogstreet.com/>) visualises the neighbourhood of a weblog which is defined by its blogroll:

"we take into account *whom you blogroll* and *who blogrolls you*, add to that a few other factors, give weightage to all the factors and there it is - the neighbourhood."

(<http://www.blogstreet.com/faq.html>)

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UNTERSCHRIFT Example for Blogstreet's Visualization of a blog's "neighbourhood")

Blogstreet is the perfect tool for exploring your own neighbourhood, especially neighbours of neighbours - because each node is expandable. Thus you get a brilliant overview of who is reading whom and who is quoting whom. Blogstreet gives us an impression about the spread of news though it doesn't inform us about single news-items.

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And that's exactly what Blogdex does.

Blogdex (<http://blogdex.net/>) shows the diffusion of Microcontent within the blogosphere. It lists those postings, which have been cited most by other Weblogs within last two or three days. Topicality and the amount of citations are the key criteria. (For more info see <http://blogdex.net/about.asp>)

Blogdex displays dissemination over time: It shows the exact time and date when a posting has been cited by other Weblogs. That is not necessarily a indicator for a certain sequence of citations (e.g. A -> B -> C ->...) but nevertheless it allows some conclusions about news dissemination.

1. The Blogosphere Map

The aim of our blogsheremap is to visualise the flow of postings among weblogs. It is not a list like Blogdex but a graph, which allow some important observations:

- Where are the hubs, i.e. most influential weblogs that distribute microcontent;
- where does the postings originally come from;
- patterns of dissemination: the blogospheremap shows that there are some news that spread only within a certain community and others which spread over the whole web. Cultural and national barriers become evident.

There are a lot of practical applications:

Blogosphere Maps may be used for commercial purposes, like e.g. visualising how campaigns spread; showing the dissemination of microcontent (slogans, citations) related to a certain campaign. That could be interesting for entertainment industry (music, movies, gaming, gadgets,...) E.g. it would be possible to track how a certain album spreads among bloggers.

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On the other hand, probably more interesting, a Blogosphere Map may show the drifting of ideas and memes, which may enhance our abilities and competences to interact with those knowledge environments.

And that's how learning comes into play, because learning is of course not reduced to sequentially absorbing knowledge. Learning always means getting generic competence, like to get acquainted with an new field of knowledge or like to find his personal method to solve a problem or to perform a task.

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At present the Blogosphere Map is only working as a prototype. Unfortunately we cannot offer a service that is available to the public. –

Maybe you have an idea how we further develop this – but even as a concept it is worth thinking about the potential of such tools. They may be used to visualise the dissemination of Microcontent within the blogosphere and they could generally be interesting for learning environments, where self organised learning takes place. The Blogosphere Map and similar tools may make us comprehend something which is invisible by nature namely the dissemination of knowledge. After all it's a plea to leave learning up to learners by providing adequate tools and materials that help them to navigate and experience new realms of knowledge.

2. Microlearning with Maria Montessori

The idea „to leave learning up to the learners“ is naturally not new. It is part of the natural idea of men by Chinese Taoism as well as it is part of western Romanticism, which both is not meant here. The tradition I specifically want to follow on has its roots in the pedagogy of Maria Montessori, which is offering a hundred years of experience. The principles of Maria Montessori may not only be applied to kindergartens and schools. Montessori herself wanted to apply her principles of non-violent education also to universities and basically to all spheres of society. The idea behind Microlearning seems if it was inspired by her thoughts and automatically applies some of her learning principles. Some of them I'd like to introduce here [2]:

(a) The Montessori pedagogue is acting in the background. He or she is not a teacher in the common sense, cause he is not giving lessons, but defining special learn-settings that allow for certain learning experiences. Special materials supplied by the pedagogue support the learner in the process of learning by him or herself.

That shows already a main difference to Microlearning. On the one side it is true that the Web and especially weblogs allow for free and independent learning but those learn-settings are mostly not arranged by a pedagogue. They are mostly unreflecting learning environments driven by personal preferences, with often unexpected outcomes, whereas learning environments by Montessori are well reflected with clear objectives. Montessori learning has its clear objectives whereas Microlearning is often aimless and accidental. But the main objective of Montessori learning is to educate young people to independent learners who are able to define their own goals. So sooner or later they all should end up as Microlearners.

(b) Learning by playing in mixed groups: Learning groups and classes in Montessori schools and kindergartens usually consist out of children of different ages. E.g. from 3 to 5 from 6 to 9, or from 10 to 12 and so on. Montessori realized that children like to learn from other children especially from older ones, and that children generally like to help each other in learning specific skills. Such learning often takes place without a direct intention, simply by playing.

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Also Microlearning in the blogosphere takes place amongst learners of different ages and levels of knowledge there is usually no distinction between academics and non-academics. It is mutual learning, but sometimes of course some webbloggers know more and/or post more and other people are learning by them. A good example of mutual Microlearning gives del.icio.us, a service for the exchange of bookmarks. It demonstrates that there is cooperation even in anonymous and very heterogeneous groups if it is for the benefit of participants. This kind of benefit is typical for the Web and for its cooperative potential. It happens not because people become better men when using the web but by making the experience that cooperation pays and that it may be very funny to cooperate.

(c) *Free schedules, no collective teaching*; The learner is free to make his/her exercises whenever he/she wants but within a certain period of time. He is able to learn according to his own state of mind and at his own speed. He is not forced to the uniformity of collective teaching; he is getting individual help according to the progress he makes.

Free schedules are also important key factors for the success of Microlearning through Weblogs. Weblogs are perfect for learning and writing in between times for both for personal Weblogs as well as for professional documentation of web inquiry. Weblogs demonstrate perfectly the advantage of asynchronous media. Asynchronous learning is characteristic for both, Montessori and Microlearning.

(d) *Prepared Environment*: Freedom must not be misunderstood as arbitrariness. Unintentional learning may be very effective but it needs a certain framework. It is quite challenging to create his own framework if it is not provided by a pedagogue or another helpful spirit. The lack of limiting conditions while learning may end up in discontent just like you feel when arbitrary browsing the web. It's kind of interesting but you don't really know what you're doing and end up with a dull feeling in your head. That's the reason why Montessori stressed the importance of an adequate framework for learning.

It is a common prejudice that Montessori learning is antiauthoritarian and that it lacks rules. That's not the case at all, it's quite the opposite. When visiting a Montessori kindergarten one will realize that the learning material is very organised. It is a rule for all children to put everything in its place after having played or learned with a certain material. The whole environment is prepared to fulfill the needs of children. It is not only child adequate in respect to ergonomics but also in respect to perception and cognition, by providing specific learning materials.

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Abbildung 1 Vorbereitete Umgebung im Kindergarten. Bildquelle http://www.doerfles-online.de/f_kiga.htm

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(e) *Learning Materials* are kind of small interactive games for real life learning experiences.

Image 2 :Learning Material, Source:<http://www.montessori-shop.de/>

As a key feature Montessori Materials provide physical experience. Knowledge and skills emerge out of a process which is guided by the learning material and which involves not only the brain but also the body as much as possible. Skills emerge spontaneously by continuously playing with the materials. Thus Montessori is not about transmitting abstract knowledge from the teacher to the learner. It provides a prepared learning situation that enables the child to learn by itself resulting in a certain competence.

Microlearning obviously lacks such a framework or prepared environment for learners. Learners have to produce their own methods and learning materials. The blogosphere is full of highly personalized learning environments created by web personalities. But this is not representative for all learners. Microlearning is avant - garde and it is a challenging goal for people who try to guide young persons to become such self responsible learners.

(f) *Sensomotoric*: As we could see, Montessori learning experience involves the body to a large extent. The body takes part in learning and even in thinking, perfectly by the number materials made out of sandpaper, which have been invented by Montessori herself.

Image 3: Number material made out of sand paper, Source:: <http://www.montessori-shop.de/>

By touching and following numbers cut out of sandpaper with their fingers children get a sensomotoric experience. The numbers become physical.

It is one of the biggest disadvantages of Microlearning that desktop computers reduce physical interaction to a minimum by using only screen, keyboard, and mouse. Microlearning with mobile devices may help to involve more senses and allow for a richer experience.

In schools and universities it might be possible to distribute microcontent stored e.g. on RFID tags over the campus which can be experienced by walking around equipped with mobile devices thus linking certain topic to certain locations. (It was common in antique rhetoric to learn a speech by literally walking from one *topoi* to the other – the original meaning of Greek “*topoi*” is “site” and the English word *topic* obviously derives from that antique habit of learning by walking. But even within the web there are promising approaches to create richer perceptions by stimulating haptic experience. Touchgraph is one of the most interesting and popular

approaches into haptic browsing and that's why we would like to integrate a Touchgraph concept into the Blogosphere Map

3. Microlearning is not Autodidactic but „Ambididaktik“

It's quite senseless to talk about Microlearning "in general" without looking at specific learning situations. Basically one should distinguish between learning with a pedagogue and free and self-reliant learning in the web (Microlearning).

The first may lead to the latter but depending on age, talents, personality and learning objectives either one mode or the other will be predominant. Montessori pedagogy demonstrates that self-reliant learning needs a perfect framework (prepared environment and a educated pedagogue) which is obviously hard to provide outside of school and university. Self-reliant Learning without a pedagogue makes only sense for older and mature learners who are able to define their own learning objectives.

In real life such a learning behaviour is generally called "autodidactic", but that is not the case for Microlearning, which can be better described as "ambididactic". This term seems to be more appropriate for learning in a community of learners. In such a learning situation there is no clear distinction between learners and teachers, there is a mutual benefit. "Ambididactic" describes individual and self-reliant learning in a cooperative learning environment which is exactly the case for Microlearning.

Microlearning environments are made possible only because there are certain preconditions:

- First of all there are conventions like archives, formats of postings, blogrolls which are generally accepted and understandable in all parts of the blogosphere. Weblogs and Wikis are not only technical devices for organising thoughts and memes. They are social standards of interaction and exchange.
- There are generally accepted technical standards like RSS.
- There are services and innovative tools like del.icio.us, blogstreet, blogdex and so forth that help us to comprehend and navigate this vast realm of information.

By using these conventions, standards and tools people unintentionally create Microlearning environments with fluent borders and open groups of participants. Compared to school the social relations amongst (Micro-) learners are far more anonymous and far less obliging but at the same time the mutual benefit is considerable. Microlearning through Weblogs and Wikis create an emergent phenomenon which is often called collective intelligence.

4. Tools for new comprehension and competence

Microlearning is obviously closely related to new and fast developing fields of knowledge, because they attract much awareness and a large amount of postings. A long time before universities and other institutions start to react, webloggers create new trends and approaches. This conference is a good example.

New trends and approaches are generally accompanied by new terms which open up a large space for imagination and interpretation. In spite of the fact that such open situations may hold some risks and disadvantages, a lot of people – like us – consider them as a real blessing. We love Weblogs and Wikis because they offer openness and vividness.

So when talking about Microlearning we should have an eye on keeping that openness and vividness alive. That's a reason why I am personally quite sceptical about the semantic web, especially in new fields.

The Semantic Web requires clear definitions and relations between terms which on the other side might become obstacles to vivid discussions and knowledge evolution. It is hard to imagine that we can agree on a general ontology of microlearning without endless debates. I am quite sure that such debates would be that interesting that they will end up in a new topic and the process will start again. Definitions and other tools of comprehension should only serve for keeping that process alive.

All kind of services mentioned above and our Blogosphere Map should not only be judged by their suitability to find interesting sites and personalities but also by their consequences to our learning and capabilities.

The critical question is whether they are able to create new experiences of knowledge and new behaviour competences, which is quite hard to explain. Probably the best explanation how cognition evolves was given by Jean Piaget who proved that comprehension of so called "absolute categories" like space and time are constructed during a child's early development. They are not inherited but emerge out of a series of sensomotoric experiences that involve that whole body. Only by interacting with a "ball" a child gets a concept of what a "ball" is what it can do with it.[3]

In other words a „ball“ is not only what we perceive in a certain moment but the emergence of previous experiences including the social context of learning.

Similar to children who construct a concept of reality, we construct concepts of the blogosphere and other social spaces of the web. Our basic intention is to raise our adeptness and our competences. Web technologies like the Blogosphere Map will help us by sharpening our senses for flows of communication and by intuitively realising situations and constellations, which is quite close to the role that Montessori materials play for young learners. We urgently need more

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learning materials that help us to create new perceptions und experiences what finally may result in comprehending new objects and new forms of cognition.

It seems quite impossible to produce such experience without personal contact amongst learners and without giving guidelines. This conference is another evidence that one cannot replace personal contact. Nevertheless it is a fact that Microlearning works amongst people who have never met in real life. Microlearning is collaboration amongst equal and like-minded learners who mutually create new fields of knowledge by simultaneously smoothing the way for comprehending them. So as a minimum Microlearning will provide not only Microcontent but also Microlearning materials in the form of web services like the Blogosphere Map that may help us to acquire new forms of perceptions within new media spaces. Especially the second part, the creation of Microlearning materials, seems to be only at its beginning and we may look forward to more.

References:

[1] The original paper by Chris Langreiter and me can be found at:

http://www.realitylab.at/blogospheremap/blogospheremap_eng.PDF; german version at:

<http://www.realitylab.at/blogospheremap/blogospheremap.PDF>

[2] Those principles haven been extracted from the following book- there is no “official list” of Montessori principles: Oswald,Paul/Schulz-Benesch,Günter (Hg.), Grundgedanken der Montessori- Pädagogik -Aus Maria Montessoris Schrifttum und Wirkkreis zusammengestellt, 18.Aufl., Freiburg 2002 (enthält neben Texten Montessoris auch Beiträge zur Praxis der Montessori-Pädagogik und eine Biographie Montessoris.)

[3] A brief introduction into Jean Piaget is provided by wikipedia at

http://en.wikipedia.org/wiki/Jean_Piaget, and in german at

http://de.wikipedia.org/wiki/Jean_Piaget

The best german introduction online are [werner.stangl]s arbeitsblätter at:

<http://arbeitsblaetter.stangltaller.at/KOGNITIVEENTWICKLUNG/Piagetmodell.shtml>

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