The Social Web and Learning

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Introduction

On the internet we see a continuously growing generation of web applications enabling anyone to create and publish online content in a simple way, to link content and to share it with others: well-known instances include MySpace, Facebook, YouTube, Flickr, Wikipedia and Google Earth. The internet has become a social software platform sailing under the Web 2.0 flag, creating revolutionary changes along the way: the individual, the end-user, comes first and can benefit optimally from an environment which has the following keywords: radically user-oriented, de-centralized, collective and massive. 'An environment in which each participant not only listens, but can also make his own voice heard': the Social Web.

This document describes a brief exploration of this Social Web and intends to gain insight in possible fundamental changes this phenomenon is causing or might cause in our society. Particular attention will be paid to the impact of the Social Web on learning and education. For how do two apparently contrary developments touch and overlap? On the one side we have the rapid growth of technologies bringing individuals together to communicate, collaborate, have fun and acquire knowledge (social software). And on the other hand we have the just conviction within the world of education that young people should not only acquire knowledge and information, but should also have all kinds of skills and experience in order to meet social and technological changes deliberately, and prepare for a life long of learning.

Characteristics of the Social Web

What are the main characteristics of the Social Web? First of all, two terms will soon arise when an attempt is made to define the concept: Web 2.0 and social software. The term *Web 2.0* was created by Tim O'Reilly (O'Reilly 2005) and refers to the continuous changes on the World Wide Web, evolving from a large collection of websites to a fully developed computer platform offering all kinds of web applications and software. These Web 2.0 services could eventually replace desktop software on the computer at home or where-ever (Anderson 2007). In 2002 Clay Shirky used the term *social software* (Shirky 2005), referring to software stimulating collaboration within groups. The term Social Web refers to all activities running on the Web 2.0 platform using social software. This means activities that only require an internet connection.

But what characteristics really define the Social Web? First of all, there is the fact that the individual user pulls all the ropes himself. Secondly, there is the simplicity of use. Thirdly, content is available freely to users, and users can simply share content with others. Fourthly, there is the phenomenon that is often referred to as 'the wisdom of crowds' (Surowiecki 2004). Fifthly, it is easy to store and find your content yourself. And finally, there is the fact that by now a 'critical mass' has been reached, where many people are creatively using the internet in their own way, where web activities have increasingly become an integral part of daily life.

The first three features – being your own boss, the user friendliness and the free availability of content and the easy way to share it with others - are a direct result of the availability on the internet of user-friendly interfaces, couplings or programmes enabling interaction between systems, including the exchange of data. By now, these interfaces have reached the level of quality that was previously reserved for software that could only be installed on desktop computers. The software on the internet has become so user-friendly that you no longer have to be an expert to publish on-line. We are no longer dependent on operating systems having trouble communicating with each other (DOS, Windows, UNIX). This has also enabled users to easily combine reading and writing. These are no longer separate activities: you always maintain direct

access to content that is important to you and whatever you add to it yourself. This provides an immediate outlet to everyone's opinion and creativity. Furthermore, the decentralized nature has made exchanging information and making connections very easy.

The vast number of individual contributions is making the collective added value of the Social Web grow. This way, and by using artificial intelligence, a new compilation layer, in which ever more data on a subject or object (picture, video) is brought together. This results in what has become known as The Wisdom of Crowds. This enriched knowledge flows back to the participant, helps to unlock the content layer and give higher visibility to the most qualitative matters.

The Social Web also makes it easy to store content and make it findable. Your ideas, photos, movies and subjects that interest you, related to your hobby, sports or work, can be arranged in all sorts of ways using so-called *tags*. Tags are keywords the user can apply to a subject, object or link. But you can also subscribe to a tag. This means you can enter a keyword on a website, enabling you to automatically receive new additions regarding the topic you are interested in – photos and movies from your own home town, for instance. This is done by means of so-called *RSS feeds*. These tags are also called folksonomies, a contraction of the words folks and taxonomy, which is used to indicate that the user is free to arrange his own content within the architecture of collaboration that characterizes the Social Web. Without being subject to the rigid way of arranging data in the familiar, closed, centralized methods of the past. Without having to actively search for content that interest you. The news you wish to receive is delivered automatically via RSS feeds, a message informing you that a new contribution is available regarding a certain subject. This way, programmes providing this service, feed readers, are useful instruments to filter the content on the web and collect it in one personal space. This makes syndication – making information available to a great variety of users - one of the most important technological building blocks of Web 2.0. When the information from various data sources is brought together in a new interface, this is called a mashup. Presently, the best known examples are the applications using Google's geographical database (maps.google.com), Amazon's product catalogue and e-Bay's auction catalogue.

Manifestations of the Social Web
The offer of social software programmes on which the Social Web is based, is huge and varied and constantly growing. Among the best known and most popular are internet discussion forums, profile sites, dating sites, massively multiplayer online games and internet messaging such as MSN. But of course also weblogs, wikis and social bookmarking – where users share their personal list of internet sources they consider valuable (bookmarks or favourites) with others. A lot is available, and in all sorts of varieties. It is almost impossible to make an all-encompassing definition.

Yet a number of main categories might be roughly distinguished (Owen 2006), based on the most dominant features: use of text, audiovisual social software, geographical and spatial social software and finding kindred spirits.

Well-known text-oriented parts of the Social Web are (we)blogs. Personal websites that are maintained on a regular basis as a form of diary. The social dimension is added in the shape of the responses of others and the inclusion of links to other blogs. By means of so-called trackbacks, signals can be exchanged between blogs to report that new additions can be found, if so desired arranged by subject. It is estimated that there are currently some 70 million bloggers worldwide, with 120.000 new ones every day.

Examples from practice 1
Blogging, a window to the classroom
www.slideshare.net/Smetty/bloggen-een-venster-op-de-klas

This site presents a PowerPoint document in which a teacher answers the question: Why should we blog?
o Learning computer skills
o Learning: collaborating, thinking critically, responding
o Assignments, homework diary
o Communication within the class: stimulating creativity, advising each other, giving room to 'silent types'
o Communication outside the class: excursions, parents, other classes…
o Support for lessons: subject blog
o School blog (to replace school site)
o Teachers blog (sharing information)
o Group blog, theme blog
o Evaluation (project, final paper)
o Reflection blogs (addition to portfolio)
o Replacement for medium print: cheaper, dialogue with bigger audience

Wikisoftware enables you to easily publish content on the internet and share information with others. The best-known example, Wikipedia, has become an online encyclopaedia, relying on the wisdom of crowds. With almost four million contributions in over 200 languages it has become an undeniable source of information. Although there will always be doubts concerning the information's reliability. Yet, initiatives to ensure a higher quality of such public encyclopaedias by having all new contributions checked by editors, such as Citizendium, The Citizens Compendium, do not appear to have it in them to match the success of (the massiveness behind) Wikipedia, let alone surpass it.

Examples from practice 2

Dutch examples of ways to use Wikis in education can be found on the site of www.digitaledidactiek.nl:
o Wikis and web logs in education: www.digitaledidactiek.nl/dd/themas/1172
o Collaborating using a Wiki, mobilizing an expert using a Wiki, having students work on assignments together using a Wiki, et cetera: See:
  www.digitaledidactiek.nl/dd/zoekresultaat?zoek=wiki&subsite=dd&Go.x=8&Go.y=2

Audiovisual social software is intended to store and share richer digital media material, such as photos, video and audio. Flickr is aimed at photos. The software enables you to publish photos on the net, arrange them, tag them, add comments to them, exchange experiences and use photos to create other things. As over two thousand photos are added every minute, the collection now comprises hundreds of millions of photos.

Another popular site is the videosharing service YouTube. A hundred million movies are watched on YouTube every day. Visitors of the site place almost 70.000 new movies on-line every day – over forty per minute. An important aspect is commenting on movies and indicating which movies you consider the best. The success of YouTube has obviously not remained unnoticed. Now that the quality of the material has clearly increased as big American networks, the BBC, but also Dutch networks and the Netherlands Institute for Sound and Vision are adding normal television clips, telecom providers and hardware manufacturers are also getting involved. They are providing cameras, phones and television sets with a direct YouTube connection, resulting in the website expanding into a complete media platform.

The possibility to combine satellite images, maps and search functions is not only indispensable for navigation systems such as TomTom, but also make it possible to combine these with photos or blogs, for instance. With all kinds of applications, like those on the site Been Mapped www.beenmapped.com, where users can map the hot spots of the world: from nice holiday homes in Ireland to a test to see if you are fit to become an air traffic controller. Or a project on www.mscapers.com, where you can load mediascapes on your mobile phone. A mediascape is a combination of digital images, video and audio that allow you to interact with a specific environment in the real world outside, selected and partly designed by yourself.

A large portion of the Social Web is filled with activities bringing people with shared interests together. Social software helps you find kindred spirits. This can be achieved by bringing together profiles, joining personal networks or joining a group which has something in common. Hundreds of such sites can be found with Judith Meskill, who in 2005 started a Social Networking Services Meta List with the following categories: 'business, common interest, dating, face-to-face facilitation, friends, MoSoSo (Mobile Social Software), pets, photos, and 'edge' cases or social networking 'plus' sites'.

Finally, two examples that indicate the massiveness of it all: the social network platform MySpace is presently the most visited website on the internet worldwide. Every month the site receives over 57 million unique visitors and there are 75 million registered users with a profile on MySpace. A profile consists of a brief description of yourself – including your name, age, status, length and hair colour -, but also a description of the things you enjoy doing and your preferences in music, movies, tv and sports, for instance. Your heroes, your favourite food, et cetera. Then you upload one or more photos, marking one of them as the most important one, which will not only be seen on your site, but anywhere in the network where your name will pop up. After all, it is all about seeing and being seen, in order to build a network of friends and other people who will be easy to contact and communicate with. Every month almost 40 billion pages are viewed on the website. On an average day in 2006 over 240.000 new users registered. As far as the Dutch market is concerned, Hyves is the most popular site, with over three million users.

Another very popular site in the US is the similar Facebook, which is aimed primarily at pupils and students. Every month, Facebook is visited by thirteen million people, viewing seven billion pages.

The might of the masses
Whether the vast numbers of users of the Social Web always ensure the wisdom of the crowds, remains doubtful in some cases. But is has by now become clear that large numbers of participants have potential and use it, too. This is illustrated by what happened to the small Canadian mining company Goldcorp (Tapscott 2006). By the end of the nineties, Goldcorp's bankruptcy seemed inevitable. After half a century their goldmine in Red Lake, Ontario was almost depleted. Executive Rob McEwen presented a rescue plan that baffled the whole company. He published thousands of pages of geological data –the best kept secret of any mining company- on the web. He offered a reward of 575.000 dollars for visitors of the site to indicate where they thought Goldcorp could strike new layers of gold. McEwen's investment turned out to be a golden move –literally. Advice from students, retired geologists, mathematicians and amateur geologists

led to over a hundred new mining sites, eighty percent of which actually proved to contain gold. Goldcorp's market value skyrocketed from 100 million to nine billion dollars. McEwen, Tapscott's neighbour, had been inspired at a conference at the Massachusetts Institute of Technology. There he heard the Fin Linus Thorvalds explain how he had turned Linux into a worldwide open source computer operating system by involving everybody in its development. A fine example of the might of the masses.

Another example, which has been discussed many times now, is the success story of the 18 year old Dutch girl Esmée Denters, who in August 2007 put her first bedroom movie online on YouTube. Now, her webcam movies have been viewed over 26 million times and she has a recording contract. She was herself an avid viewer of other movies and by making many friends – thousands of them! - she eventually made it into the day's top ten. When major newspapers and television shows also started noting Esmée, the amount of attention for her on all major search engines skyrocketed.

Prosumers
Internet users are no longer merely consumers, they have also become producers of information. The result of activities by such prosumers (producer and consumer) is called user-generated content. The vast majority of content on the Social Web is produced by users. The prosumers offer rich and very diverse layers of content, from multimedia material to opinions, discussions and comments. These layers are in turn an important attraction to new visitors. Successful examples of the Social Web are always collaborations bubbling with activity, places of communication and interaction. They are social meeting grounds where opinions and debate may arise. Research (Pew 2006) has shown that in the United States, 35% of the adults create on-line content. 8% is keeping a weblog, 14% is working on a website of their own and/or creating one for others, 26% of the internet users share photos, movies, text, stories or other creative expressions. 18% has edited existing material and put it on-line, while 11% have experience with profile sites. The most active users are among young adults and teenagers: 43% of people under 30 and even 57% of the teenagers have created on-line content!

The research also shows that 87% of the American 12 to 17 years olds are active on-line and that 55% of them visit profile sites. Half of them consider themselves natural content providers, publishing photos, movies and text on-line and sharing them with others, often on their own personal weblogs. 32% of the teenagers have their own web page, 22% have their own website and 19% have their own weblog. This shows that the Social Web is more alive among young people than among older people.

How will these young people deal with social networks and creating content when they get older? Of course, only time will tell, but it seems plausible that they will not simply cast aside these habits and activities on the Social Web. Their needs will doubtlessly be adjusted, and no doubt there will be ever more users and possibilities in the world of work. As is already the case now, with professional alternatives for leisure social networks like MySpace, such as Linkedin. The main aim of this site is to allow registered users to benefit from each other's networks, bringing better jobs within reach. This is done by connecting to other users you trust. In July 2007 there were over 12 million registered users worldwide. Linkedin has been growing fast in recent years, particularly in the Netherlands, where it now has 1 million members.

Young people and the Social Web: characteristics
Quite rightly, in recent years more attention is being paid to the characteristics of young generations (Oblinger, 2005; Veen, 2006) and their life in the digital world (Wijngaards, Fransen & Swager, 2006, Wijngaards 2007, *Teenagers and their digital world,* Amazon.com). This is done from the idea that the characteristics of these young people and their activities provide clear clues to successfully innovate the way of learning at school. This is also important because of the conviction that the learner with his capabilities, incapabilities, wishes and desires should always be the focal point of learning processes.

This way of thinking fits in with the constructivism movement within education psychology, which tries to explain why the transfer of knowledge at school often is not very successful. If you view learning as a cyclic process (doing – reflecting on experiences and new information – analyzing and understanding it – taking decisions, doing, et cetera) this calls for active learning (Simons, Van der Linden & Duffy, 2000). It calls for education with pupils and students who are curious, explore things and reach a form of profound learning, where they are taken in by a subject and start asking questions, and thus become responsible for planning their own learning process. Authentic learning plays an important role in this: a type of learning that is closer to 'real life' (Van Oenen & Wardekker, 2005) and closer to the needs of pupils and students (Stevens, 2004).

Good education on the one hand tries to make learners acquire the necessary knowledge and information, but on the other hand also offers help with the development of skills and the use of sources that enable learners to cope with social and technological changes in society and continue learning their whole life.

On the internet, young people learn early on, by trial and error, to be responsible for their own choices, priorities and decisions. Their behaviour on the internet reveals a number of remarkable characteristics:

1. Intertwined with technology
Young people are so skilled in using technology, that they are hardly aware of it and can easily follow new developments in this area and incorporate them in their everyday lives. These digital natives (Prensky, 2001) communicate with instant messaging, share their opinions through weblogs, buy and sell stuff on eBay, exchange things using peer-to-peer technology, are creative with Flash, meet in 3D worlds, build collections from downloads, work together in Wikis, measure the reliability of people and information through reputation systems, search all sorts of things with Google, mobilize their surplus of computing power for SETI, report using mobile phones as cameras, not to mention activities like programming and (unintentional) learning.

2. Social networker
Young people feel a great need to be in constant contact with others. They use chat environments and profile sites for this purpose. There they meet to talk about all sorts of things. This seems unimportant, but the opposite is true! Many young people meet for social contact and to find their own identity, as a complement to and extension of what happens to them in 'real' life. They make contact easily in various networks (friends, class mates, family, sports club, et cetera). In doing so they obviously run the risk of being bullied, excluded or publicly ridiculed.

3. Wanting to share and collaborate
As opposed to older generations, who find it less easy to operate in large groups and with strangers, young people consider sharing information and opinions a matter of course. They do not want to be isolated, but like to work together. And they show a high degree of tolerance for differences and diversity. Furthermore, they like to tag, to indicate what interests them and on what subjects they would like to get more information. Co-productions with peers are quite common.

4. Empirical attitude
Learning as you go along is an age old principle, but with new meaning when it's about young people who are willing to try out all sorts of things for themselves (or together with peers). A mere explanation in words generally doesn't suffice for them. Furthermore, they work in a non-linear way. As they are not used to reading texts and following the course of an argument or story, they have the skills to jump through information in an exploratory fashion and still absorb its meaning. They can do this because (and to the extent that) they are also capable of defining search and learning goals.

5. Visual attitude

Today's youth has an extremely visual attitude and is used to fast, clear information. Young people are better at interpreting images than words.

6. (Inter)active participant
Young people don't care very much for ready-made messages and products. They involve little challenge. They like to be involved in creating things and adding their own dimensions. Computer games, particularly if they involve collaboration in teams, are challenging and dynamic, whereas books and lectures are static by nature. The latter demand a great level of passive concentration, which is often hard to muster for young people who are used to doing several things at once (multitasking). Products, too, should offer them room to make their own contributions (prosuming).

7. Impatient
They also want to have things sorted right away. They easily forget that one-liners rarely encourage the necessary reflection and that not everything can always be sorted as fast as they'd like.

Consequences for learning and the school
If these are the characteristics of our youngest generations, what should that mean for our school programmes and the way we design learning practices?

The following conclusions at least seem to apply:

1. Link up to the digital world.
Education should connect more to the assets and possibilities the digital world offers young people. This would also entail making better use of young people's ICT-knowledge and skills, resulting in an increase in motivation and involvement.

2. Integrate the Social Web in existing ICT-networks of schools.
Some schools have invested heavily in their own ICT-systems and electronic learning environments. These are safe, closed systems running on software for desktop computers. One of the problems at hand is how to open up these closed systems for the Social Web on the internet. To name some obstacles that will have to be overcome to achieve this: Teachers and school leaders will have to become more confident in their relation to the unfamiliar possibilities that new technologies offer. There will have to be sufficient support (webcare teams) for schools in order to balance the many positive opportunities and risks of connecting closed and open systems. Managers and teachers will have to be better informed about the advantages new technologies have to offer. ICT-systems should be reliable, meaning they will always work and have sufficient speed and bandwidth, amongst other things. There should be more opportunities to actually integrate technologies in learning programmes. Working with mobile phones and iPods should also be made possible. It seems inevitable that we are heading fast for a communications world that has been typified as 'always on', in which we always have access to the web, wherever we are. Through PC and TV, but also through portable computers and mobile devices, such as smartphone and pda (personal digital assistant). The current battle between the big players in the telecom industry, hardware suppliers and service providers will not delay this result for long.

3. Let young people collaborate a lot, let them form collaboration groups themselves.
Schools should work more with groups with peers, in which the teacher and external experts also play a part. Activities to build new knowledge together, with an important role for interactivity.

4. Ensure that young people play a part in designing their learning process.
Do not present the learning process on a silver platter, but allow students to take part in designing it themselves. Empiricism, relevance, responsibility and challenge are keywords in this respect.

5. Teach young people to use digital sources.

Schools should actively inform their students about the digital world: explaining about the internet, (the reliability of) digital sources and social software. Attention should also be paid to skills like selectively choosing information and the ability to read in a goal-oriented way, an activity involving the 'scanning' of texts or webpages to find the answers to specific questions or learning goals, meanwhile actively thinking about what's being read. And to building more patience and time for reflection.

6. Learn to appreciate informal learning and to allow room for it.
Much learning takes place informally, outside structured learning programmes: you ask others for help, you search the internet, you learn by trial and error while exercising a hobby or sport, without the presence of a teacher or parent. It would be very beneficial if we could develop sound methods to consciously integrate informal and formal learning. This is very hard, however, as people tend to try and add structure to informal learning, while its strength is the fact that it is not structured, but more or less takes place in people's lives accidentally. When integrating informal and formal learning, attention should be focussed on the experiences and 'lessons' individuals have gained informally and that are related to the agenda for the formal learning.

Examples.
Fortunately, the number of websites aimed at helping teachers to efficiently use social software applications in education is increasing rapidly. It is impossible to list them all here. The literature list at the end of this article refers to websites with lots of material. Still – mainly to give some idea of the variety and as an addition to the examples already mentioned in this text- here are some remarkable examples that aim to put the principles mentioned above into practice.

Social software such as eJamming brings together students and teachers in on-line groups or solo sessions in order to record and edit music. This opportunity to play 'live' music together, to network and to find other people who are interested in joining, makes for an interesting application in music education. Musicians can plug in their digital instruments, such as keyboards, guitars and drums, in their USB port to connect to this platform. A maximum of seven musicians can play together.

WorkshopLive provides a similar platform, with the added possibility to call in on-line instructors for help. The Australian In the Chair has developed software that gives students the impression they're playing along with professional bands and orchestras. They are truly engulfed in a musical experience.

Within *Google Earth* it is possible to add all sorts of layers that help to make particular themes visible. For instance, the layer may show volcanoes, or important sites from World War II. (see www.shambles.net/pages/learning/GeogP/gearthplan/).

Panoramio links every photo to the location where it was taken. As a huge number of photos has already been put on the net, you can view photos from a great variety of locations. This is done through the search field. Panoramio also links up with Google Earth (earth.google.com). So the photos can also be viewed through this programme.

'Why let our students blog?' is a YouTube-movie from New Zealand showing the many advantages of blogging for students and pupils.
www.youtube.com/watch?v=OVK4dGNRdQY

SniteCasts is a rapidly growing collection of podcasts set up by students themselves. It provides descriptions of works of art from the Snite Museum of Art.
www.nd.edu/~sniteart/podcast/index.html

Very Vocabulary helps you to learn (to pronounce) English vocabulary.
veryvocabulary.blogspot.com/

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www.inholland.nl/NR/rdonlyres/B9171506-1BAA-4CAE-B276EFE3940FAB74/ 0/Profielsites.pdf

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A few interesting websites for teachers

o   www.digitaledidactiek.nl

o   (eLearning theme site, files sorted by subject) http://e-earning.surf.nl/elearning/dossiers

o   www.ictopschool.net/software/nieuws/web-2-voor-onderwijs

o   www.shambles.net/pages/learning/ict/web2edu/

o   www.web20opschool.be/

o   www.youtube.com/watch?v=F1IRkqbUoXY

o   Web 2.0: About "Coming of Age: An introduction to the NEW worldwide web"
     www.terry-freedman.org.uk/db/web2/

o   www.slideshare.net/annetsmith/social-software-in-de-klas-rocva-v2

o   Website   of   the   INHOLLAND   University   website   Centre   for   eLearning
     www.inholland.nl/elearning