



Learning design when the classroom goes online

Abstract

The Internet is increasingly being used by educators and educational institutions not only for information seeking, but also for communication and publishing student's work. This paper explores how this can affect the learning situation and how we can understand the difference between an assignment carried out by a student and which is handed over directly, and only, to the teacher, compared to something that will be published and public on the net.

The Learning Design Sequence developed by Selander (2008) has been used as an analytical tool when analyzing 5 examples from schools using web 2.0. Not having the teacher as the only addressee for a school assignment changes the value of the work and opens up for further development of knowledge, and we argue that the Selander model in some cases can be extended, when the classroom goes on line.

Keywords

web 2.0, learning, internet, education, learning design

Introduction

The Internet has been used as a pedagogical tool since the mid-90s. Main focus has been on information seeking and critical thinking and how young people can learn how to evaluate what can be found on the net. While schools are still struggling with the problem of evaluating information already published, technology continues to develop and young people today can easily publish material themselves.

Social networking, blogging and playing in fictional worlds have exploded in recent years, mainly because these applications respond to the basic human needs for communication and as human beings, we want to understand how others view us and to understand ourselves. The net might change these conditions by affording a platform for our need to talk and gossip without comparison in the history of mankind. Earlier research showed that it was difficult to, in a social way, keep track on more than about 150 people - friends, workmates, classmates, relatives etc. (e.g. *Dunbar's number* in Dunbar, 1997). Today, we know that the number of friends for a person in digital social communities can be much higher. The digital environment allows us to actively stay in contact with more friends (e.g. Enochsson, 2005).

Besides measurable knowledge, the Swedish curricula also include a fostering part, which means that young people should become democratic, mature grown-ups, being able to function as responsible citizens understanding other people's values and conditions



(Skolverket, 2006a; Skolverket, 2006b). The interactivity of web 2.0 changes the prerequisites radically in the classroom, and letting students¹ publish their work on the net opens up for a new way of working with these processes.

Traditionally, the learning situation at school is located within the walls of a classroom, where the teacher is in charge and has control over both content and design of the learning situation. Students produce texts etc. just to show the teacher that they have understood. In this paper, we argue that this is a *closed* learning situation in contrast to an *open* learning situation when material is published for example on the Internet for more people, or even anybody, to see.

According to Swedish curricula, teachers have great freedom to design learning situations as long as their students reach the objectives. The earlier curriculum for comprehensive school (Skolöverstyrelsen, 1980) supported and also to some extent advocated a less traditional way of teaching. Opening up the classroom is therefore nothing new in a Swedish context, but this way of working was not comprised by all teachers. Still, relatively few teachers design learning situations where actors outside the classroom are involved and teachers thereby have less control.

Learning

We see the Web 2.0 as new *communicative affordances*, in the way Gibson (1977) used the concept affordances: as all action possibilities latent in the environment. Here with all communicative semiotic signs and many different ways you can use the net for communication. From this view the Internet cannot simply be studied as a form of traditional communication or a new form of hyper text. Together with all the applications and abilities that it allows its users, the net is clearly more than the sum of its parts (Hutchby, 2001). Scholars emphasize the text of the net is not the traditional text but it includes film/video, sound/music and written texts and that different types of texts rarely are exchangeable (Kress & Van Leeuwen, 2001; Kress & Van Leeuwen, 2006; Selander & Svärde Åberg, 2009; Van Leeuwen, 2005). As a consequence of this, the Internet user/producer gets more utilities in the own multimodal toolbox. The users have many ways to express themselves to their disposal, which was earlier reserved for a few experts and professionals. The multimodality of web 2.0 also brings the possibility of experiencing variation in the learning situation, both in terms of the way you can produce the content and in the way you can communicate it, which might include e.g. your own facial expression in front of a web camera.

Possibly, a Hutchby (2001) inspired model of an Internet full of new affordances is too general to be used as a base for mediated communication in a school environment. But indirectly, Hutchby is pointing at extremely complex phenomena behind extensive popularity of the Internet among school children. Gee (2007a; 2007b; 2008) argues for instance that computer gamers developing new ways of learning and co-operation skills but this does not explain blogging and its potential. Equally, boyd's thoughts about young people using web communities (boyd, 2007; boyd, 2008a; boyd, 2008b), cannot give the explanation why chatting is so frequently used, the fan-fiction phenomenon (Jenkins, 2006; Parrish, 2007) or why YouTube is so enormously popular; and so on.

¹ By using the word *student* in this article, we mean every school child or teenager who is studying in the youth school system – from the primary to upper secondary school



The Internet is complex and cannot easily be described in a few words. There are private and public spaces to different degrees. Our focus in this paper is the public part of the Internet – in contrast to intranets and closed forums.

Web 2.0 in the classroom

Schools today are facing a tension between bounded place and porous networks which have lead many teachers and school leaders to take a restrictive approach to youth e-learning, encouraging young people to search for and visit familiar and credible sites, but steering away from popular venues and practices beyond adult control (Enochsson, 2007). This approach that still dominates many concrete pedagogical settings and practices is based on a transactional perspective of communication and learning processes where knowledge is owned by someone and transferred as a box in a conduit from one individual (teacher, author, adult) to another (student, reader, child).

There is also a tension between the voluntary online produced content and the more structured, usually written texts, produced in schools. Schools do not always consider students' net-based communication practices as an aspect of their digital skills (Södergård, 2007), skills that even in a very narrow sense must be seen as extremely important knowledge in a future society. The school's mission is to create sustainable concepts and provide experience and skills that are transferable to a variety of areas (Drotner & Livingstone, 2008). It is therefore necessary to perform systematic studies to provide a basis for ongoing discussion about what kind of skills and knowledge, both traditional schoolwork and the voluntary online production, require training.

In our net connected age, our relationship with others is more public and open than before in that sense that there is an audience we do not always know of (Castells, 1996; Castells, 2001). Actors in schools – teachers, students, management, parents – realize that the boundary between the private, the internal work, learning processes and the society around the schools has blurred. The schools are in the middle of "the convergence culture" (Jenkins, 2006) where old established media and communication merge with the new (Silverstone, 2007).

Just a few percent of the schools in Sweden have or have had a web school newspaper. The number of projects working with wikis in one way or another is about the same. When it comes to individual classes, which have a class blog, the number is a bit higher. In addition to that there are a number of schools experimenting with on-line meetings with other schools in Sweden and internationally. Considering that all the schools in Sweden are connected to the Internet the number of schools using these affordance is still low, but growing.

Authentic situations

The main argument teachers put forward for letting their students publish their school work on the net, is that students this way will become involved in authentic situations beyond the teachers (Åkerlund, 2008). The schools' lack of authentic situations for student's texts is a major factor to why so many students do not crack the idea behind the concept of studying (Nilsson, 2002). The consequence of publishing students work on the net, is not only that the author/photographer/video-producer will get other readers/watchers than the teacher and their classmates; the image of the school itself will change. In this public text universe the stories and pictures made by the students become the image of the students themselves and the school, which means a shared responsibility of all involved.



Quite often, the fact that the school's official website is in second place in the statistics of school web visitors when there is an alternative class blog or school web paper, can be seen as threatening by colleagues, and school boards and municipal information offices. Many teachers working with blogs and wikis can witness about situations where they have to promise the headmaster or the school board² that they will supervise and prevent that any kind of negative or criticizing material towards the school ever will show up on the class blog. The lack of trust for teachers' work and for students' intentions and the lack of confidence for the concept of *responsible freedom of speech*, and thereby also some democratic values, are sometimes evident. Although these latter things are part of the objectives for Swedish education.

The Selander model

Selander and his team has during some years developed a model for what they call *Formal – Learning design sequence* (Selander, 2008; Selander & Svärde Åberg, 2009). In our interpretation of this model we assume a quite big assignment, in a situation when a student can use computers for a more complex production (Figure 1):

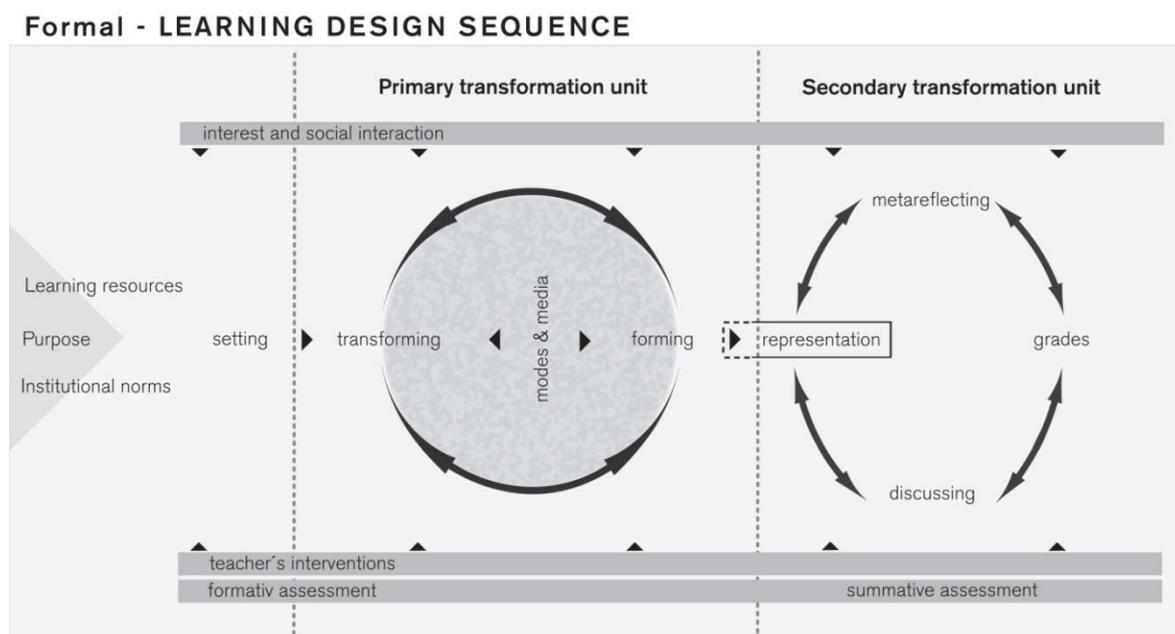


Figure 1: This image has a more recent dating (January 2010) and some small changes has been made compared to the article referred here (Selander, 2008). This figure is under constant development according to Selander.³

- The setup of the assignment is a set of instructions, a possible lesson and other information resources (e.g. books, films, Internet).
- In the *primary transformation unit* the student, or the students in a group, has to transform this information according to the intention of the assignment and form a new product (e.g.

² Last year (2009) I was contacted three times by headmasters in different parts of Sweden, just to discuss this issue.

³ Thanks to Anna Åkerfeldt for letting us using this version.



a paper or an oral presentation). With the help of computers in this process, he/she/they has/have the opportunity to use not only written text, but also any combination of photos, video, sound together with, or without, written text. The form can be fiction, documentary, newspaper-like interviews, exhibition, essay, a song, podcast news or any other kind of [mediated] cultural expression.

- The *second transformation unit* starts with the student's (or students') representation; here as the interpreted and transformed information given in the setup. In this transformation unit it is possible to give the student[s] feedback, to discuss conclusions, forms and expressions and to give credits for the work. This unit also includes the possibility for the student both to have a meta reflection on the work, as well as a repetition of the content.

There is much more to say about this model, but our intention here is only to introduce the model and to use it as an analytical tool in examples where the students are supposed to put their work on the net, one way or another. Also, the aim here is not to criticize any of these examples below, only to see if they fit in to the model⁴.

Three examples

The following practical examples are from schools in Sweden.

Example 1a: Blogs to everyone in the class

At the media program in an upper secondary school in the middle of Sweden, all students have their own study blog on Blogspot. With RSS feeds from all these blogs the teachers can follow every student's activity on one portal blog. In this portal, all visitors are welcome and some brief information is given about the site and about the assignments the students are working within their own blogs. These assignments can, like in this case, be ... "make an interview with a craftsman and publish this interview together with at least three own photos", "publish the last animated film you did in the computer lab on YouTube and make a link to it from your blog" or "publish at least two photos where you have captured movement of something or someone, that moves". Students publish the result of their work without any *ensorship* from the teacher.

- This example is *multimodal* in its nature. The intention from the teacher is here to develop information production skills and through publication a sort of awareness of an audience outside the school context. The primary and secondary transformation unit in the model can be used in this example, but as we see it, something happens even after, or in parallel with, the second unit. When the result of the assignment is published everyone can see the work. At the same time as the teacher can see this school-work, the rest of the class can see it – and possibly learn from it. Parents, relatives, friends and anyone who just accidentally finds the work can see it, and the students can get credits and comments from them. The blog also serves as a portfolio for both the student and for the teacher to observe the development of skills and knowledge.

⁴ ... which is something else. From what we know, we actually think these examples are very good school activities.



Example 1b: The school class blog

In a secondary school in a city in the southern part of Sweden, a home-room teacher (or class mentor teacher, as they are usually called in Sweden today) for an eighth grade class - students are around 14 years old - starts a class blog. The ambition was rather low from the beginning, but today, a year and a half later, it is not only the weekly letter to the parents on the net, the blog is where the class together tells their friends, relatives and other who can have an interest in this particular class about what is happening in the school; mainly with written texts and photos.



The screenshot shows a class blog page with the following content:

- Läxor!** v.-48
Torsdag 26 nov; Engelskaredovisning (muntligt)
- v. -49
Måndag 30 nov. ; Matte, läxa 10
Omprov i fysik och biologi under veckan. Glöm inte heller att göra kartprov.
- OBS! Onsdag 9 dec. prov i moderna språk. Börja repetera nu!
- KG
- Upplagd av tomta-a kl. 23.22 0 kommentarer Länkar till det här inlägget
- TISDAG 17 NOVEMBER 2009
- Klassråd 18 nov.**
- Vaccination**
Måndag den 23 så kommer vi börja vaccinera mot H1N1 (svininfluensan) här på skolan

- 1b - Photos and other more social, and personal, material is also published on this class blogg.

The concept is far from complicated. The teacher takes her own laptop computer to the class hour, she logs in to the class blog at Blogspot, and every week, two new students will be responsible for the blog. First, each homework is registered (which can differ rather much according to choice of foreign languages, students' own choices etc) and all other "you have to remember" things, e.g. "remember to wear rubber boots in next Wednesdays' outdoor activities". After this compulsory information the two students in charge can add extra material to the blog and finally the teacher checks it and the new page can be published.

- This example describes an alternative to the classical paper to the parents to sign; papers that has to be returned to school. It is simple and it works. It might include the first transformation unit, but not the second. Instead we have a lot of parents, friends and classmates who will respond to the published material – on the blog itself as comments or direct in a live situation. No login, no passwords and an address that is easy to remember.

Example 2a: The story wiki

A teacher in Swedish (the mother tongue of the students) in a seventh grade class in southern Sweden decides to let the students, in a wiki, write their own fairy tales. Every story has to be published with the child's own picture, which usually is a drawing. All texts are now published publicly on the net, but without any of the children's names. According to the teacher everyone was very enthusiastic about the project and afterwards they were very proud to have been able to make this online book together and the fact that everyone now can read it.



The screenshot shows a story wiki page with the following content:

- Cyklopen och prinsessan**
- Det var en gång en prinsessa som skulle välja ut en prins till sitt bröllop. Det kom prinsar från hela landet, men hon ville inte ha någon av dem som kom. Ingen prins var tillräckligt duglig för prinsessan. En dag blev hon tagen av en cyklop. Han gick med henne genom skogen och alla vakter sprang efter och försökte rädda henne, men de dog. Då såg en fattig bondpojke prinsessan och tänkte: hon är den perfekta kvinnan henne måste jag rädda, men jag väntar tills det blir mörkt för då sover nog jätten.

- Read more about The Cyclops and the princess on <http://tomtatexter.wikispaces.com>



- The purpose here was to work with the fairytale format, to get everyone to read each others stories, to let everyone outside the school, who knows about the children, read it and a way to do something together that everyone in the class can be proud of. This example works very well with the model, but after the second transformation unit these stories start to live their own life on the net.

Example 2b: The wiki as a textbook and exercise book

In the sixth grade, students usually have *The world outside Europe* as a this year's over all assignment in Geography. The teacher in this example decided this year, instead of following the routine and to use the geography text-book (which was quite outdated), to let the students create their own teaching materials as a wiki. He used a web hotel and the Mediawiki software; the same software as Wikipedia uses. The assignment for the children was to make short articles of all countries – sometimes as a group activity, especially for big countries, and sometimes, where only a small country was covered, as an individual assignment; one at a time and continent by continent. Information comes from various sources, from the net, encyclopedias' and from the old text-books. After this school year there was a wiki with a lot of information about each and every state outside Europe, and the wiki created by the students replaces the text and exercise books in Geography this year.

- This example adds something new. These texts are not only the result of an assignment and published for parents and other interested in the world geography to read. The purpose for each and everyone was here to produce *facts* for other schoolmates to learn from and this second phase process is not included here. If this is an ongoing process, every year's students can add more and update information about these countries. Do we need school-books anymore?

Example 3: Lessons in mathematics together with a class in Japan

In the upper secondary school Polhemsgymnasiet in Gothenburg in the southwest of Sweden, five teachers in Mathematics have

been working together with teachers in China and Japan in a project. Over the last five years the teachers in Gothenburg have, together with a group of their students, had online lessons in mathematics, or rather, they have together with their Asian colleagues arranged online student meetings or seminars together with students at Sagano High School in Kyoto in Japan and with students at Shanghai Information Technology College in China, about mathematical questions. Every time they meet this way, a new mathematical problem is



- This group's first presentation meeting together with the class in Kyoto in Japan – Dec 2009. Photo: Dan Åkerlund

passed over to the other end – in both directions – and together the receiving student group will try to explain how to solve the problem. The purpose of these online meetings has been to



understand mathematics as both a universal subject and at the same time something that is understood from a cultural context. This is also an exercise in oral English and in intercultural communication. The meetings are rehearsed and prepared with PowerPoint presentations. And as another result, these students on both ends, has become friends, and a couple of trips to both Japan and China with the students has been made possible through scholarship and support from various foundations.

The technique used on both ends is Skype, a webcam with a built in microphone and an interactive whiteboard. Between these online meetings the students use e-mail, Skype and MSN to get in touch with each other and to prepare for the next seminar.

- This example works rather well with the *primary and secondary transformation unit*, but, as we see it, something about an authentic situation can be added. Here we have a construction of a mathematical problem and the transformation into a mode and medium that will be visible and understandable for students in another context and with other language skills. We have external receivers; not the teacher who is well versant in the topic. In this case, they have both a sense of being a part of something unique, a bit of stage fright and curiosity of meeting someone from another part of the world.

A third transformation unit?

It is obvious that it is impossible to describe all good school-work in one single model. Our aim here is not even close to that. The purpose is only to discuss what online publication can add to this model.

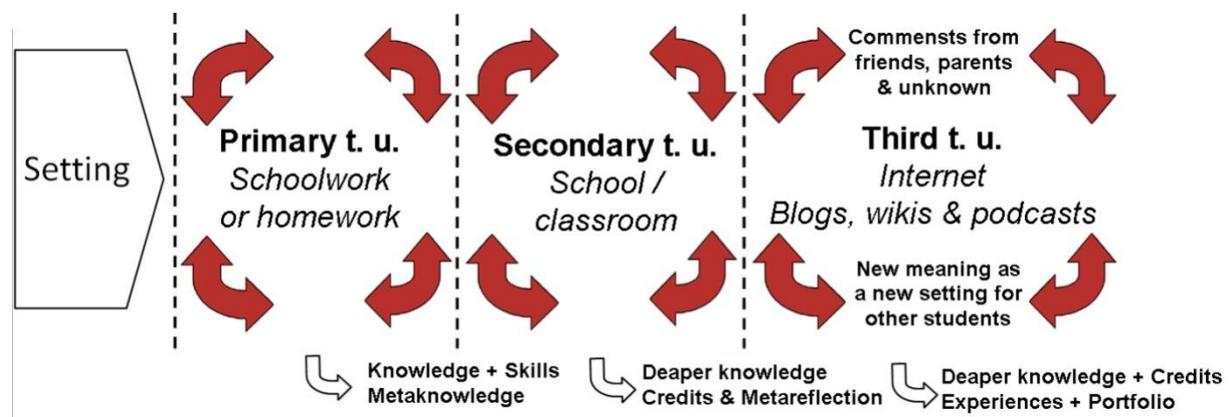


Figure 2: The purpose of this figure is to illustrate a third transformation unit. The Setting, the Primary and Secondary transformation unit always will be in this order, but the Third suggested unit can of course, in some cases come before the Second transformation unit.

In Figure 2 we have first made a schematic illustration of the model in Figure 1 and to this added a suggested third transformation unit. The idea is that the assignment, already from the beginning, is presented as a publication or a meeting with other people on the net. This will, already from the beginning, change the audience or receiver of the students' school-work.



Practical implications

To have someone else, outside the classroom as a receiver, is far from unique; concerts, dance shows and exhibitions for parents to see, is probably common in any school. The use of Internet as a stage and exhibition hall makes this easier to realize more frequently. The Internet, instead of the school building, also has two other obvious advantages according to time and space; the images, video films, articles, stories and shows can be there for everyone to see for much longer time and it is there to be watched regardless of the distance. This places students' work in a borderless information space where everything seems to happen both here and now and there and then, or in what Castells (1996) has coined "timeless time" and "space of flows".

If the secondary transformation unit ends with grades (or evaluation), the suggested third unit can give credits in other ways from relatives, friends and someone else *out there*. At the same time it is important to mention that far from all critique you can get on the net is positive. The big debate both among teachers and in the press related to this has been about *net bullying*. If bullying is a bigger problem today with the so-called Web 2.0 is disputable (Slonje & Smith, 2007), but bullying is a concern for school whether it occurs in the corridors or on the net. To publish and communicate over the net is part of daily life, and therefore as such something that must be included in the school-work, both as a question of values and respect for others and as a competence for everyone to have.

In example 2b above (The wiki as a textbook and exercise book) the purpose of the assignment was to produce learning material as a replacement for the textbook to the rest of the class – and maybe for next years' students. Even if the assignment is not clear in this way, it probably can be a positive challenge for students to put texts on the net that might be interesting for other students to read. Wikipedia may not be built (or written) by young students, but in itself it is a testimony to the willingness of some people giving away information for sake of promoting knowledge sharing.

Finally ...

Finally, we would like to stress the frequent confusion between the concepts of feedback and interactivity. Feedback mechanisms, involving interaction between human and artifacts, should be distinguished from interactivity as an act of human communication (Buskqvist, 2009). The latter comprises forms of mediated interaction that enables participants to communicate with one another on a basis of a mutual dialogic frame, joint control of the process and expectations of being able to influence outcomes. It seems to be extraordinary difficult for schools and teachers making this kind of unrestricted communicative dedications and many e-learning policies and projects have aimed to stimulate feedback rather than interactivity. Rather than engage in managed question and answer sessions with teachers (and parents) they crowd to online spaces designed for more boundless lateral interactivity, like social networks sites as Facebook and Bilddagboken⁵, which provides promising conditions for autonomous sense-making.

Another crucial misunderstanding relates to the use and spatial organization of online learning environments. Teachers tend to adopt a place-based approach to this patchy and

⁵ One of the most popular communities for young people in Sweden today.



interconnected network of networks, assuming that they can establish their own bounded institutional online enclaves to which students are more or less forced into and encapsulated (c.f. LMS). It seems that many teachers find it difficult to participate in learning/communicative environments over which they don't have total control, and these control-oriented teachers collide with digital learners experiences of and expectations for boundless communicative settings. Applications like YouTube oppose the educational system traditional pursuit for a single objective depiction of reality in favor of a fragmented, poly-semiotic collage of reality. The blogosphere seem to be less focused on reaching correct conclusions than linking to scattered sources of presumed knowledge. Wiki-technologies resist the hegemony of the complete text and final word, seeing itself instead as offering a perpetual process of re-descriptions. The entrance of social networks sites into school settings implies the importance of constant reconsideration of the learning design sequences model, and the perceptions of knowledge.

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