

# Patchworking and Power Users – a Novel Approach to Understand Learning?

**Thomas Ryberg**, *ryberg@hum.aau.dk*

e-Learning Lab - Center for User-driven Innovation and Design, Department of Communication and Psychology, Aalborg University. Kroghstræde 1, 9220 Aalborg OE, Denmark.

**Lone Dirckinck-Holmfeld**, *lone@hum.aau.dk*

e-Learning Lab - Center for User-driven Innovation and Design, Department of Communication and Psychology, Aalborg University. Kroghstræde 1, 9220 Aalborg OE, Denmark.

## Abstract

This paper sets out to explore the notion of Power Users from a proposed metaphor of understanding learning as process of patchworking. Based on a study of a group of young 'Power Users' it is argued, that the metaphor of understanding learning as a process of patchworking can enhance our understanding of young people's learning in technology and media rich settings. It is argued that the analytical approach presented give us ways of investigating and exploring young people's learning in media and technology rich settings to study if they are processes of critical, reflexive enquiry where resources are creatively re-appropriated. With departure in an analytical example the paper presents the proposed metaphor and also discusses how we might understand what is special about young people's learning.

## Keywords

Power Users, Patchworking, Youth, Technology Enhanced Learning, Collaboration, ICT

## INTRODUCTION

The aim of this paper is to explore the notion of Power Users of Technology and to explore their way of approaching working and learning. Power Users of Technology is a label in line with New Millenium Learners, the Net Generation or Digital Natives. What is common for these concepts is an assumption that societal transformations, globalisation and the massive diffusion of information and communication technology (ICT) have dramatically changed the conditions for learning, and that these societal transformations demand new competences of the learners. Furthermore, a prevalent idea is these changed conditions should be reflected in the ways institutional or formal learning is organised in order to accommodate to the potential new ways of learning. Even though there seems to be a shared understanding of these potential changes, there is not much research-based knowledge on this generation as learners; especially we lack in-depth, empirical studies of how this group of learners approaches actual learning situations.

This paper is going to report on such a study. The study has emerged from an international project on power users called 'Power Users of Technology'. As part of this project six groups of power users from different parts of the world were brought together in an international symposium supported by United Nation and Educational Development Center (EDC). The symposium took place in Costa Rica in August 2005 with teams of power users coming from Australia, Philippines, Taiwan (online only), Denmark (called the Nordic team), US, Latin America, and Europe. During the

symposium, they had to work in their national or regional group with one of the UN Millennium goals: e.g. Environment, poverty and education.

The paper is based on a detailed interactional investigation of the Nordic team during the Costa Rica symposium. The detailed investigation covered in particular a three days, intensive learning process in which eight young power users (age 13-16) worked collaboratively on solving the open-ended problem of 'How to reduce poverty through the use of technology' (Ryberg, 2007). Even though the entire work and learning process of the young people spanned three months, the majority of their work was accomplished during the three days of work. Within this short and intensive period they managed to create an impressive multimodal presentation also encompassing elaborate and complex argumentation on their findings.

Out of this enquiry grew the notion of metaphorically understanding learning as a process of patchworking (Ryberg, 2007) and on basis of the study we discuss the notion of Power Users. We argue how the metaphor of understanding learning as a process of patchworking can enhance our knowledge of New Millennium Learners or Power Users. In short, the metaphor of patchworking aims at highlighting how learning processes and processes of knowledge creation consist in stitching and weaving together different 'patches and pieces' into something new. It is a perspective that foregrounds the constructive, creative and productive aspects of learning. The metaphor encompasses for one thing a particular view of learning, but also it suggests specific ways of analytically approaching learning processes. It suggests that we can metaphorically view learning as processes of creating or stitching provisional patchworks by assembling and continuously reorganising multiple patches and pieces into a 'final' patchwork. In this way the metaphor taps into a wider (and necessary) debate of whether young people's use of ICT in relation to learning is a mindless exercise of copy-paste behaviour or whether it consist in creative, productive re-appropriation and generation of new knowledge. It does so, not by resolving or answering the question, but by presenting an analytical and theoretical vocabulary to empirically investigate technology mediated learning processes. We shall argue that it is not the 'final product' or 'patchwork' in and of itself, which should be the object of analysis. Rather, the analytic focus is to investigate how, when and why various resources (or 'patches and pieces') such as ideas, arguments, pictures or web-texts are stitched together into provisional patchworks, which are combined, reorganised, negotiated and assembled into a 'final' patchwork (Ryberg, 2007).

The article is structured in the following way. We begin the article by presenting the notion of Power Users of Technology and discuss the concept in the broader landscape of "The New Millennium Learner", "The Net Generation" or "Digital Natives". Following this we will present the case study of the Power Users and based on an example of analysis, we will introduce the notion of patchworking. Finally, we discuss what we can learn from this study about the notion of Power Users and about studying learning processes taking place in technology-rich settings featuring multiple media and resources.

### **Perspectives on the study of Power Users of Technology**

The rapid development of ICT and in particular the internet has shaped and altered not only our everyday lives but also instantiated changes on a global scale. From the very childhood kids are exposed to ICT and digital media. They are exploring and using professional tools, they are used to communicating and collaborating in global virtual communities and many young people move seamlessly between online and off-line settings, this to a degree where the very distinction loses its

meaning (Ryberg & Larsen, 2006, 2008). It is against this backdrop we should understand the intensified interest for the potential of the new millennium learners.

In the beginning of 2000 on the initiative of the Educational Development Center (EDC) in Boston (USA) a global initiative was initiated in order to start a long term and global research project on young people, technology and new ways of learning. The idea was to establish a 20 - 25 year longitudinal and comparative study of Power Users of Technology following how they developed cognitively, socially, professionally and culturally. The project was called "The Power Users of Technology" and was lead by an international board of researchers, business people and educators. The project was organised in a number of phases:

1. Establish an international committee and formulating a working definition of power users of technology.
2. Further develop the conceptualization of power users of technology, establish more partnerships, and also to begin to formulate the research agenda.
3. Setting up a longitudinal and comparative study of power users of technology.

The project went very well in the two first phases, but it has turned out to be more difficult to find the resources for the longitudinal and comparative study than first anticipated.

The power users project is not the only project studying the learning potential of young people in relation to their use of technology and media. In Denmark especially a research group from the Danish University School of Education headed by Birgitte Holm Sørensen, have participated in numerous research projects on kids' informal learning and the use of digital technologies (Holm Sørensen, 2002, 2001; Holm Sørensen, Jessen, & Olesen, 2002; Jessen, 2002). Likewise, the Dream project<sup>1</sup>, headed by Kirsten Drotner at the University of Southern Denmark is an example of a research project focussing on new media and its potential within formal education. Equally researchers from our own research centre, which is focused on e-learning and user driven Innovation, learning and design, are engaging in how new web 2.0 technologies are taken up by learners. But also a research focus is how we can develop the methodology and philosophy of problem and project based learning, which is the pedagogical foundation of Aalborg University (Dirckinck-Holmfeld, 2002). For one thing, this is to better reflect the perspective, style and approach of the new learners, but secondly, and maybe more important, to ensure that the educational sector reflects and supports the development of the competences needed in the knowledge and learning society (Dirckinck-Holmfeld, Jones, & Lindström, 2008 Forthcoming; Ryberg, 2007).

In the UK a project with similar aims is about to begin funded by the Economic and Social Science Research Council (ESRC) headed by Chris Jones. Earlier research conducted with ESRC support investigated children in pre-university age groups and this UK research is now being extended into a pan-European context (Livingstone & Bober, 2005; Livingstone & Bovill, 2001). Moreover, another study (Facer, Furlong, Furlong, & Sutherland, 2003) made a number of important findings in relation to youth and digital technologies, which we shall return to. In the US a number of different groups are working with various aspects of youth and new media. The PEW Internet Research Group studying the digital aspects of American life have made a number of interesting quantitative studies and reports on youth and their use

---

<sup>1</sup> Please refer to: <http://www.dream.sdu.dk/index.php?lang=Engelsk>

of technology (Lenhart & Madden, 2005; Lenhart, Madden, & Hitlin, 2005). Recently the MacArthur Foundation has initiated and funded a large and more qualitatively oriented research project focusing on youth, learning and new digital media (called Digital Media and Learning). Likewise, they have funded a research project on New Media Literacies which is headed by Henry Jenkins (Jenkins, Purushotma, Clinton, Weigel, & Robison, 2006)

While we believe that there are very good reasons to intensively study youth and their use of digital technologies, we would also raise some concerns with labels such as Power Users, the Net Generation, Digital Natives or New Millennium Learners. Claims related to a generational discontinuity have e.g. gained some popularity through e.g. the notion of Digital natives as opposed to Digital immigrants as described by (Prensky, 2001). In general the claims about the Net Generation can be summarized as: New technologies, primarily games and the Web, have general effects upon the brain or behaviour and activities of a generational cohort, which also have particular effects on learning and our design for education. While we do believe that we can point to many changes and discontinuities, we shall also argue for a somewhat more critical view on such generational metaphors.

Based on recent research on youth and ICT we would argue that we should be careful in talking about a new generation or homogenous cohort of young people. There is indeed empirical evidence and indications showing that youth in many ways have better digital competences and more quickly appropriate and learn to use new technologies in creative and innovative ways (Holm Sørensen, Audon, & Olesen, 2001; Holm Sørensen et al., 2002). However, there is equally empirical evidence showing that children and young people are using ICTs in many different ways, for widely different purposes and that they have very differentiated experiences, competences and varied access to ICTs and possibilities for using them. While we often speak of 'the digital divide' between developed and developing countries, there are equally digital divides within countries that largely follow traditional or existing socio-economical and cultural divides (Facer et al., 2003; Jenkins et al., 2006; Livingstone, 2002a, 2002b). We should at least be critical of such overarching generational metaphors such as the net-generation, digital natives or power users of technology and reflexive of whom such terms will benefit or disadvantage. Equally, we should be careful in assuming that youth will automatically develop critical, reflexive skills or literacies, through their informal, intensive use of technology, because as (Facer et al., 2003) argue, these are often learned through formal schooling. Even though, youth may be skilled at collecting a variety of resources, bring them together and create impressive assemblages of media and means we need to critically assess such products. As Jenkins et al. (2006) point out:

“Guinee and Eagleton (2006) have been researching how students take notes in the digital environment, discovering, to their dismay, that young people tend to copy large blocks of text rather than paraphrasing it for future reference. In the process, they often lose track of the distinction between their own words and material borrowed from other sources. They also skip over the need to assess any contradictions that might exist in the information they have copied. In short, they show only a minimal ability to create a meaningful synthesis from the resources they have gathered.” (Jenkins et al., 2006, p. 51)

On basis of this, we would argue that there is a need to further develop our analytical and methodological approaches towards studying youth and ICT and firmly grounding claims of youth in empirical investigations. In this paper we argue

that the metaphor of understanding and analysing learning as processes of patchworking might be one fruitful avenue for such investigations.

### **Case description and methodology**

The study and the young people's learning process were situated within the larger event and symposium arranged as part of the 'Power Users of Technology Project' in Costa Rica<sup>2</sup>. Our research group's overall approach and research design focused on qualitative methods and was an ethnographically inspired open-ended investigation with intensive participatory observations and documentation of their work. The data collected during and after the symposium were: Field notes from the participatory observation; 8 individual interviews and 2 group interviews with the young people; collection of hand-written notes and documents and also we harvested digital notes and documents from the Tablet-PCs they used. Most of their work was quite extensively documented, as we recorded approximately 20 hours of video and the process has been analysed and accounted for in more detail in Ryberg (2007). In the following a brief, narrative account of the entirety of the learning process and a short description of their final presentation will be given.

### **Description of their work, learning process and final presentation**

Even though some work was conducted ahead of the symposium they did not have much to work with when arriving in Costa Rica. They had mainly some vague ideas and conceptualisations of poverty, and how to address, define and work with their problem. Their work began in the evening on the 7<sup>th</sup> of August in a room at the hotel, where they created interview guides for some expert interviews, and it culminated on the 10<sup>th</sup> of August where they presented their work to the symposium attendees<sup>3</sup>. Most of the time they all worked in a room, kindly provided by Universidad Nacional, but also they went out to interview various resource persons and experts. Also, we had arranged a small lecture on poverty, which was given by two local researchers. The Nordic Team's final presentation was called 'How to improve a poor society' and the pictures below are from this presentation.



From the picture one might be able to sense that the presentation was heavily multi-modal and combined many different media and resources. On one of two projector screens a slideshow with looping pictures of 'poor people' was displayed, while they used the other screen for their main PowerPoint presentation. Their presentation was composed of multiple media and resources, such as: music, pictures, a self-made cartoon-like animation, small video clips from the interviews (some of them subtitled) and also different graphs with statistical information about poverty, which was accompanied by their oral presentations. The many resources, ideas and arguments came from various sources. Some of the graphs used in their own presentation came from the PowerPoint presentation used by the local researchers in a lecture; facts and information came from various web pages and books. Ideas and arguments came from the interviews, but also informal conversations e.g. with one of the young guides during a bus ride. The four different interviews they conducted were all recorded, edited and made into small clips, which were used as part of the

<sup>2</sup> For more information about the Power Users Project and the symposium please refer to: <http://powerusers.edc.org/> - For a more thorough discussion of the event and the notion of 'power users' please refer to (Ryberg, 2007), as this will not be further explored or explained in this paper.

<sup>3</sup> For a more thorough description of the presentation please refer to: <http://www.ell.aau.dk/PhD-Thesis-on-Power-Users.429.0.html> where one can find an appendix from the author's PhD thesis. This appendix describes their presentation in more detail.

presentation. Pictures of poor people were found through image search on the web, while the graphics in the animation were hand-drawn and animated in PowerPoint. The music used was carried on their computers from home.

In this way the entire presentation was a 'patchwork' of many different resources and media which were assembled to convey their conceptualisation of poverty, and how to address this problem. However, the presentation was also a conceptual patchwork that drew on information, facts, discussions and ideas from various sources, which were assembled and orchestrated into a coherent line of argumentation. The presentation outlined an overall argumentation focusing on 'taxes' and 'education', but also many other issues were drawn in as causes of or solutions to poverty e.g. corruption and lack of secondary education. While it is difficult to convey in full the complexity of their arguments, the presentation and the whole process, the next section aims at illustrating this through analysing a smaller part of the whole.

### **Analytic concepts and analysis of patchworking processes**

As mentioned (and more thoroughly argued in (Ryberg, 2007)) their final presentation was both a very complex and impressive assemblage of different media and resources as well as arguments and lines of reasoning. A guiding question of the analysis in Ryberg (2007) was to critically investigate, whether the process was a mindless exercise of copy-paste or if it was a creative, innovative and challenging process? In short, was it a process of knowledge construction and not merely re-production?

In this particular case the young people foraged and gathered quite a number of different resources from both the web and also from e.g. the PowerPoint show of the researchers, who gave them the lecture on poverty in Central America. For instance some of the slides made by the lecturers were incorporated and used as part of their presentation. Obviously, from such an example we can critically ask whether their entire presentation was just an example of copy-paste behaviour and plagiarism, or whether it was in fact a creative re-appropriation of different resources. In the subsequent analysis we shall take up an example illustrating how the presentation came about and how ideas and resources were woven into their patchwork. Initially, we shall briefly present some of the analytical concepts through which processes of patchworking can be analysed.

One such concept is threads, which are employed in the analysis to point to some 'organising principles' or 'persistent ideas' in their work. Prominent threads were for an example the problem formulation (their research question) or that of the presentation. The concept of threads also refers to some prominent ideas that were prevalent throughout their work. For instance, "education" was seen by them as an important factor in decreasing poverty. This was a prevalent idea or hypothesis around which their enquiries circled throughout the process. But the hypothesis developed from a more general 'education is good' towards 'education can be statistically shown to have a major impact on poverty and is a key condition for civic engagement and democratic participation in a society'. Threads are thus 'persistent ideas' around which 'patches and pieces' such as ideas, interpretations, arguments, information, facts or digital files start to cluster and form provisional 'patchworks'. As the process progressed they developed an increasingly refined sense of the relations between their different ideas, hypotheses and their overall problem. This can be seen as the gradual development of a 'conceptual blueprint' for their overall patchwork. Furthermore, an analytic entrance point is to look at different moments or cycles in the flow of the activities where this conceptual blueprint is stabilised or destabilised – with the latter leading to moments where patchworks at different

levels of scale are unravelled, inspected and rewoven. In the following analytical example we shall try to convey a sense of the complexity of their work in negotiating, discussing and weaving different resources into the flow of their activity – and how their presentation and argument emerges from this entanglement of resources and ideas.

### Planning, weaving and re-weaving a provisional patchwork

The excerpt presented below took place on their first full day of work. The evening before they discussed some interview guides and also some initial ideas for the presentations. They worked on this in smaller groups of two or four and we enter the example where they have discussed two suggestions for the final presentation – one being a role play involving the audience, the other a movie based or cartoon inspired animation. One of them suggests that they can provide the narratives of the interviewees through a ‘matchstick man’ animation and another suggest they should film the interview. In this sense they are discussing different media and modalities, but this quickly turns into involving also the very fabric of their problem and approach. This is also spawned by Angie trying to reach a closure by proposing that they should vote for one of the suggestions.



Jack: Yeah yeah so if we are going to do some interviews it is a damn good idea doing those with a movie because it doesn't take as much time either, and then people can better understand it

Angie: Yeah

Jack: Instead of us standing there reading something aloud for example

Angie: So we could do something (gestures) a combination of it all?

Jack: Yeah, where we incorporate many different things

Angie: Should we vote?

Neil: I mean

Sophia: Aahh but can we just- ok, so we want to do something with that one with the matchstick men (2.0) OK, I have to admit I see it like- I mean the matchstick men for tax and education and then drag in some pictures with persons and then make it into a real story, and then interviews where we take and put on what they are looking at



Diana: Yeah, but also because one of the things we wrote yesterday Neil and me was that we must keep in mind the connecting thread, because else you won't be able to follow then it will just be all kinds of different things like ok [ and then



Jack: No no no we of course have to maintain the connecting thread and that is also why at all times we have to look at our problem definition, these are just the means to make it look easi- I mean to, I'll just try again- they are the means so it becomes easier to see

Laura: Yeah

Sophia: To understand



Laura: But now you say problem definition, what is our concrete problem definition, because we don't have one at the moment

Neil: (inaudible)

Samuel: No

Laura: We have all these overarching- or sub questions and like an idea of what it should be, but if at all times we should maintain a connecting thread then I think it is really important to have a problem formulation- that is a sentence we keep getting back to- can the things be connected and is it coherent

Sophia: Yes, yeah it must be coherent

Initially we can see how they are discussing different modes, media and means for their presentation. Jack's comment that pure text or 'just talking' would be boring, highlights their very multimodal ways of expressing themselves - not only in images, movies and audio but also through constructing a narrative composed of 'many different things'. Sophie tries to organise this by summarising her perspective of the relations between the presentation and the problem. Here she mentions 'taxes' and 'education', which were prevalent threads throughout their enquiry. These emerged initially as part of a small-group discussion on the night before, where a sub-group of four people created questions for the expert interviews (as did the others in groups of two). In the document they created, three topics (taxes, education and jobs) structured their different questions. The next day (which the excerpt is from), during a longer discussion and brainstorm, the 'categories' are reified as a shared representation for the whole group on a whiteboard. The threads then functioned as organising principles for their enquiries and represented persistent ideas or hypotheses of causes and solutions to poverty throughout the entire process. Their emerging understanding of the relations between hypotheses, problems and the different threads is what we call 'the development of a conceptual blueprint'. The conceptual blueprint acts as an ephemeral and continuously negotiated blueprint of the relations between causes, solutions, ideas, hypotheses and arguments. In this way it represents an unstable model of what their final argument and presentation should revolve around and address.

These considerations on the threads, causes and solutions become tightly woven together with their ideas on which media and means to use as part of their presentation. For instance in this excerpt we see how Sophia tries to link the different media and means more tightly with the problem and the threads, by making an account of how she sees the relations between the different presentational forms and the threads on taxes and education. On basis of this, and the idea that 'they can just combine a lot of different things', Diana raises a concern with this strategy, and she argues that they need to keep in mind the connecting thread. Here she moves the focus from the presentational means onto the problem and solutions. Jack agrees that they should not lose track of the problem definition, but makes a distinction between discussions of the problem, the connecting thread and then the presentational means. Here we should note, however, that the presentational means are not just 'bells and whistles', but as Jack frames it means to 'explain and communicate the message'. However, Laura breaks in and comments that she does not think they have a sufficient description of their problem, which she argues should be a core question around which their enquiry should revolve. This leads to a longer process of inspecting their conceptual blueprint, as it opens to re-negotiations of what actually constitute their whole problem and way of approaching the problem. While this can not be seen from the small excerpt their discussions become



negotiations of the relations between problem, solution and causes – how can education reduce poverty? Do taxes need to be higher to ensure better education? How would a higher taxation affect international companies' desires to invest in Costa Rica? And so forth.

Such discussions we see as a way of unravelling their provisional patchwork and recombining 'patches and pieces' in other ways, thus reorganising the conceptual blueprint of their presentation and their overall line of argumentation. Laura's comment foregrounds a discussion of, whether they do have a stable representation of the problem and a connecting thread that can stitch together the different patches and pieces they have or may find. The discussion of whether they have a stable and shared representation now becomes their entry into querying and critically assessing the unstable and provisional patchwork. At the same time this reweaving of their patchwork is entangled with their ideas of how to present, construct and create a narrative that reflects their conceptualisation of the problem and how to address this.

Even though the excerpt represents only a small glimpse into a much longer discussion and process it provides an idea of how we can empirically approach questions of copy-paste behaviour versus creative re-appropriation in technology-rich settings, where multiple resources, media and means are part of the learning processes. For one thing it shows a glimpse of how they carefully discuss and negotiate the media and means in relation to their problem and hypotheses. Furthermore it shows how these different presentational means are not only flashy 'bells and whistles', but are seen as means to communicate and reflect their conceptualisation of the problem and its solutions. This also tells us that the media, means, arguments and ideas are not uncritically or haphazardly stitched into the larger patchwork of their presentation and their conceptual blueprint; rather, these are negotiated, unravelled, inspected and rewoven through their discussions. In this way the relations between content and form are continuously and dynamically negotiated and constructed.

## **CONCLUDING DISCUSSION**

To conclude our analysis and to return to the notion of power users, we should like to discuss two points: 1. The notion of Power users/millennial learners and their approach to learning 2. The metaphor of patchworking as a way of approaching technology mediated learning processes involving rich media use.

As we initially pointed out, we should be careful in talking about a new generation or homogenous cohort of young people. We should be careful in assuming that we are dealing with a 'uniform generation' of highly ICT-literate young people, and that youth's (often) playful and experimental use of ICT will seamlessly translate into complex, creative and productive competences and learning capabilities. Rather, we need to firmly ground our hypotheses about youth and ICT in empirical investigations at different levels of scale. In this paper we have presented one way of engaging empirically with youth and their use of ICT on a detailed, relatively fine-grained level of analysis.

When looking at the example of the analysis it is clear, that their skills are not restricted to media literacies, but also encompass their abilities to relate the multimodal forms of expression with their conceptualisations of the problem, the solutions and constructing a coherent line of argumentation. While they are dependent on mastering technologies with a relatively high-level of technological skill, it is simultaneously a question of having the competences to: Construct a good narrative; organise, plan and orchestrate a complex work process; creatively master

various modes of communication and multimodal forms of expression – while relating these to ‘the content or substance’. From the example it is clear that the young people are multimodally oriented, but equally we would argue it is important to investigate, more generally, if learners engaging in similar processes are critical and reflexive. Both in regards to the use of media and means, but also in relation to discussing a problem, gathering information, arguing for solutions and an ability to critically inspect hypotheses and ideas. In this particular example, and for the process as a whole, this was indeed the case (Ryberg, 2007). However, in eliciting questions of whether young people’s learning in media and technology rich settings is a critical, reflexive enterprise where resources are creatively re-appropriated; or whether it is uncritical copy-paste behaviour and knowledge reproduction is an important empirical question in talking about the Net Generation or Millennial Learners.

We would argue that the metaphor of understanding learning as a process of patchworking, and the approach of analytically following and investigating closely such learning processes, provides an idea of how we can empirically engage with questions of copy-paste behaviour versus creative re-appropriation in technology-rich settings. By looking at how multiple resources, media and means are made part of the learning process, and by following how argumentation, hypotheses and solutions develop, we can investigate if arguments and ideas are critically stitched into their provisional patchwork and the conceptual blueprint. We can investigate how the entanglement of media, mean, ideas, resources, arguments, hypotheses and solutions are negotiated, unravelled, inspected and rewoven through their discussions. Some of the insights which can be gained from this particular case, might be especially connected to or dependent on the very problem-oriented and open-ended learning design in the case (e.g. the construction of a problem formulation or development of hypotheses). However, we would argue that the analytic concepts and the idea of approaching learning through metaphorically viewing it as a process of patchworking could also be applied in other settings involving youth and their use of ICT. The metaphor suggests an analytical focus on how resources of a widely different fabric are assembled, and it suggests an analytic focus on how these resources are aligned, contrasted and negotiated – in short, it suggests an empirical focus on the process and not just retrospective analysis of the final products. The metaphor of understanding learning as a process of patchworking is a perspective that foregrounds the constructive, playful and productive aspects of learning processes. Such a perspective seems to fit well the general descriptions of Power Users of Millennial Learners. But at the same time it also encompasses an analytic and methodological focus, which allows us to engage critically with learning in technology and media rich settings.

## REFERENCES

- Dirckinck-Holmfeld, L. (2002). Designing Virtual Learning Environments Based on Problem Oriented Project Pedagogy. In L. Dirckinck-Holmfeld & B. Fibiger (Eds.), *Learning in Virtual Environments* (pp. 31-54). Frederiksberg C: Samfundslitteratur Press.
- Dirckinck-Holmfeld, L., Jones, C., & Lindström, B. (2008 Forthcoming). *Analysing Networked Learning Practices in Higher Education and Continuing Professional Development*. Sense Publishers.
- Facer, K., Furlong, J., Furlong, R., & Sutherland, R. (2003). *Screenplay: children and computing in the home*. London; New York: RoutledgeFalmer.
- Holm Sørensen, B. (2002). Digital produktion - nye æstetiske former og produktionsmåder under udvikling. In B. Holm Sørensen, C. Jessen & B. R. Olesen (Eds.), *Børn på nettet - Kommunikation og læring* (pp. 43-66). København: Gads Forlag.

- Holm Sørensen, B. (Ed.). (2001). *Chat - Leg, identitet, socialitet og læring* (1st ed.). København: Gads Forlag.
- Holm Sørensen, B., Audon, L., & Olesen, B. R. (2001). *Det hele kører parallelt. De nye medier i børns hverdagsliv 14 portrætter*. København: Gad.
- Holm Sørensen, B., Jessen, C., & Olesen, B. R. (Eds.). (2002). *Børn på nettet - Kommunikation og læring* (1st ed.). København: Gads Forlag.
- Jenkins, H., Purushotma, R., Clinton, K., Weigel, M., & Robison, A. J. (2006). *Confronting the Challenges of Participatory Culture: Media Education for the 21st Century* (White Paper). Retrieved from: <http://www.projectnml.org/files/working/NMLWhitePaper.pdf> 15.08.2007, Chicago: MacArthur Foundation.
- Jessen, C. (2002). Kommunikationsmedier og sociale forandringer. In B. H. Sørensen, C. Jessen & B. R. Olesen (Eds.), *Børn på nettet - kommunikation og læring* (First ed., pp. 219-237). København K: Gads Forlag.
- Lenhart, A., & Madden, M. (2005). *Teen Content Creators and Consumers: Findings of the Pew Internet and American Life Project*. Retrieved From: [http://www.pewinternet.org/pdfs/PIP\\_Teens\\_Content\\_Creation.pdf](http://www.pewinternet.org/pdfs/PIP_Teens_Content_Creation.pdf) 15.08.2007, Washington, DC: Pew Internet & American Life Project.
- Lenhart, A., Madden, M., & Hitlin, P. (2005). *Teens and technology - Youth are leading the transition to a fully wired and mobile nation*. Retrieved from: [http://www.pewinternet.org/pdfs/PIP\\_Teens\\_Tech\\_July2005web.pdf](http://www.pewinternet.org/pdfs/PIP_Teens_Tech_July2005web.pdf) 15.08.2007, Washington, DC: Pew Internet & American Life Project.
- Livingstone, S. (2002a). *Children's Use of the Internet: A Review of the Research Literature*: National Children's Bureau.
- Livingstone, S. (2002b). *Young people and new media: childhood and the changing media environment*. London; Thousand Oaks, Calif.: SAGE.
- Livingstone, S., & Bober, M. (2005). *UK Children Go Online: final report of key project findings* (No. Final: Available from <http://personal.lse.ac.uk/bober/UKCGOfinalReport.pdf> last accessed 8th of February 2008): UK Children Go Online.
- Livingstone, S., & Bovill, M. (2001). *Children and their changing media environment: a European comparative study*. Mahwah, N.J.: L. Erlbaum Associates.
- Prensky, M. (2001). Digital Natives, Digital Immigrants. *On the Horizon*, 9(5), 1-6.
- Ryberg, T. (2007). Patchworking as a Metaphor for Learning – Understanding youth, learning and technology. *PhD thesis published in: e - Learning Lab Publication Series*, 1(10), 1-477. Retrieved March 25, 2008 from [http://www.ell.aau.dk/fileadmin/user\\_upload/documents/publications/ell\\_publication\\_series/eLL\\_Publication\\_Series\\_-\\_No\\_10.pdf](http://www.ell.aau.dk/fileadmin/user_upload/documents/publications/ell_publication_series/eLL_Publication_Series_-_No_10.pdf).
- Ryberg, T., & Larsen, M. C. (2006). Networked Identities - Understanding Different Types of Social Organisation and Movements Between Strong and Weak Ties In Networked Environments. In S. Banks, V. Hodgson, C. Jones, B. Kemp, D. McConell & C. Smith (Eds.), *Proceedings of the Fifth International Conference on Networked Learning*. Lancaster: Lancaster University.
- Ryberg, T., & Larsen, M. C. (2008). Networked identities: understanding relationships between strong and weak ties in networked environments. *Journal of Computer Assisted Learning*, 24(2), 103-115.

## BIOGRAPHIES



**Thomas Ryberg** MA, PhD, is Assistant Professor at Aalborg University, Department of Communication and Psychology and located in the centre E-Learning Lab, Center for User Driven Innovation, Learning and Design. TR does research on how new media and technologies transform our ways of thinking about and designing for learning. TR's primary research interests are within the field of ICT and learning for development, youth and ICT, technology and new media social learning theories and



**Lone Dirckinck-Holmfeld** MA, PhD, is Professor on ICT and Learning at Aalborg University, Department of Communication. Ph.D. from Roskilde University in computer-mediated communication and learning. Scientific Leader of E-learning lab. Main field of research is computer-supported collaborative learning (CSCL) in distributed environments, participatory design and implementation. Has authored and co-authored several books, articles, and reports on ICT and learning.

### Copyright Statement B

This work is licenced under the Creative Commons Attribution-NonCommercial-NoDerivs2.5 License. To view a copy of this licence, visit <http://creativecommons.org/licenses/by-nc-nd/2.5/> or send a letter to Creative Commons, 559 Nathan Abbott Way, Stanford, California 94305, USA.