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Other Classrooms
Beyond the Disciplinary Spaces of the Past

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Abstract

The following thesis is at once a somewhat rudimentary attempt to relate the history of the classroom while describing the potential impact on the space of learning by the introduction of a new type of computer program into a school setting. It asks the question: how is the space of learning affected by the use of this specific type of computer program as an educational tool?

In order to begin to formulate an answer to this question I have drawn upon the theorizing of Foucault and Deleuze in particular. Establishing the modern classroom as a relative of sorts to the disciplinary spaces of the past, I conclude that the means and practices by which pupils are being controlled within the space of learning have shifted from discipline being extorted exclusively by the teacher – who in turn is aided by the physical and temporal constraints of the classroom – to control being applied by each individual pupil through technologies of the self. This, in turn, led me to the conclusion that although there are certainly quite tangible effects on the space of learning itself, the actual mode of learning may very well be kept intact through techniques designed to control the behavior of the individual pupil beyond the disciplinary spaces of the past.

Key Words: Space of Learning, Classroom, Genealogy, Discipline, Control, Heterotopias, Technologies of the Self, Space-Time Relation, Power Relations, Creative Learning Online, Michel Foucault, Boku, Microsoft, Children, Institutional Settings, Childhood, History of Education.
Introduction 7

Genealogy and Socially Constructed Categories 10
  Genealogy as Methodology 10
  The Pupil as a Socially Constructed Category 11

From Discipline to Control 13
  Foucault and the Disciplinary Space 13
  Deleuze and the Societies of Control 15

Towards Defining a New Classroom 17
  Postmodernity and Space 17
  Heterotopias and Other Rooms 18
  Boku and a New Space of Learning 21
  Collaboration and Creative Learning Online 22
  Boku and Technologies of the Self 24

Empirical Study 28
  Background 28
  Discussion 30
<table>
<thead>
<tr>
<th>Conclusion</th>
<th>35</th>
</tr>
</thead>
<tbody>
<tr>
<td>References</td>
<td>39</td>
</tr>
</tbody>
</table>
Introduction

As an English teacher in training it seems important to try to develop a keen sense of ones prospective place of work. Therefore, the present thesis aims to discuss the space of learning and to focus, at least partly, on the history of the classroom, as it is still – arguably – the primary site of learning within most contemporary schools. Even though my intended age group in school spans from – roughly – age 13 to 18, I still believe it is very valid to investigate how the relationship between child and classroom is established in the early years of school. What's more, what kind of impact is the introduction of new media likely to have on this relationship?

The history of the classroom and the history of the individual child are inevitably bound together and in order to understand one, it would seem the other must be made present throughout the analysis. Consequently, rather than carrying out a study seeking to investigate the relation between older pupils and the classroom I have instead chosen to focus on younger children since I believe the social codes governing the pupil are established early on in the institutional setting of the school. In essence, the social codes and rules recognized initially will then implicate the kind of relation existing between the pupil and the space of learning throughout the remainder of the time spent in school, and perhaps even beyond that, on into a professional life still very much dependent upon the disciplinary rules and regulations established in school with regards to the varying constraints of space and time.

While there are recent studies discussing the relation between space, time, and computer activities within a school setting (Aarsand, 2007), as well as research focusing on the construction of youth and the control of spatiality (Massey, 1998), there seems to be relatively little done in as far as narrowing in on the conflicted relation between the disciplinary space of the enclosed classroom and the opened up virtual space accessed through the online computer. Moreover, there would seem to be a need for a theoretical discussion concerning the above mentioned conflict and its potential impact on the ongoing power relations in the classroom.
In a sense, then, the main focus of this thesis is twofold. On the one hand it aims to trace the genealogy of the classroom, paying close attention to Foucault’s history of the disciplinary space. On the other hand it aims to describe a potentially new space of learning, one that reaches beyond the disciplinary space of the enclosed institutions. The classroom that is shaped in the form of a disciplinary space is, arguably, also a vessel for certain power relations controlling the distribution of the individual bodies within that space. But how does one begin to describe the constant flow of power within a new space of learning that might appear to have little to do with the disciplinary spaces of the past? Who, in fact, governs the children in a space and time continuum that would seem so radically altered in certain key regards?

In order to investigate the space of learning I intend to focus on a test running of a beta version of a computer program in development that may have some impact on the perception of learning and the space-time relation. The name of this particular computer program is Boku¹.

Boku is perhaps best described as a new type of computer program allowing its users to design games without having to first master the often quite advanced language of computer code. Potentially, this program offers just about anybody the opportunity to design the game of his or her liking. When designing the actual game, through simple executive commands based on graphic language, the designer/pupil is positioned so as to take control of the learning process and without the aid of any outside tutor or teacher carry out the design utilizing a method of trial and error.

A learning environment such as this one, without any clearly designated places separating the teachers from the pupils, and with a space located somewhere beyond – but in constant relation to – that of the classroom, would seem to call for a modified analysis of the power relations struggling to define the discourse of learning in school.

I will attempt to define the concept of genealogy as applied by Foucault, using an explanatory text by Mats Beronius as a principle source of guidance. I will also

¹ Boku is being developed by Microsoft Research, Redmond.
briefly touch upon the subject of socially constructed categories in order to establish the pupil and the teacher as discursive subject positions rather than independent historical agents.

Moreover, I aim to make use of the genealogical analysis in order to describe the history of the classroom and put focus on certain practices that can be traced from the enclosed spaces of the earlier disciplinary societies as defined by Foucault to the opened up spaces of the societies of control as elaborated by Deleuze.

In order to more fully understand the conflict between the discursive shift of the two different types of societies and the perception of space and time in its major institutions, it is valid to highlight a theoretical discussion concerning modernity and postmodernity and the experience of space and time. This, I hope, will provide a somewhat comprehensive background to the discussion on Boku and its potential effects on the experience of space and time in the modern day classroom.

I will also relate the subject of Boku to the foucaultian concepts of heterotopias and technologies of the self in order to expand on the discussion regarding spatiotemporal rules and power relations in the classroom.

Additionally, I have found it useful to compare the social aspects of Boku to a creative platform called Scratch – developed by MIT media lab – especially since there is a tangible stock of research material available on Scratch that for obvious reasons is lacking in regards to Boku.

At this point of the thesis I have enclosed an empirical study describing the test run of Boku in a classroom setting with six participating pupils and one teacher. The empirical study is very limited in size and scope and will serve to raise questions rather than provide uniform answers.

Finally, I aim to conclude the thesis by retracing the steps taken and offering some suggestions as to what kind of impact Boku may have on the experience of space and time in the classroom; how this may, in turn, affect the power relations between pupil and teacher; and finally establish whether or not the space of learning is necessarily subject to any major changes as a result.
Genealogy and Socially Constructed Categories

Genealogy as Methodology

What is found at the historical beginning of things is not the inviolable identity of their origin; it is the dissension of other things. It is disparity. (Foucault, 1984, p. 79)

The genealogical analysis, such as it is described by Beronius, aims to determine more or less plausible kinships between seemingly unrelated historical occurrences. In themselves, these historical occurrences do not constitute fundamental phenomena as such. Quite on the contrary, they come to represent temporarily frozen snapshots of an ongoing state of being. Rather than attempting to identify a comprehensive structure by which we might understand and interconnect various social relations, the genealogical analysis instead function to relate disparate historical occurrences that in one way or another can be said to be reflected or echoed in the present within any given field of knowledge. It aims to establish these relations without connecting them in a chain of cause and effect. Furthermore, Beronius claims that by studying modern practices in the light of various historical predecessors we may deprive the analyzed practice of some of the “naturalness” it may otherwise be equipped with. What we think of as “progressive” or “good” may in fact turn out to bare a certain likeness to other practices that we are less inclined to label “good,” and in the process the genealogical analysis offers a different perspective from which to view some of these practices that we have perhaps become too accustomed to in our daily life (Beronius, 1991, p. 52). Accordingly, Beronius calls genealogy “the history of the present” (Beronius, 1991, p. 50).

It is also important to note, and this appears to be central to the genealogical analysis, that whatever interpretation of various actions, things or phenomena we make they are always closely connected to social relations of power (Beronius, 1991, p. 66). The pupil, in that he is identified as such, will automatically be transformed into a social entity or phenomenon that in turn is rendered an
inevitable part of an ongoing power relation. Power relations are constantly brought about simply because different interpretations are continuously competing over the precedence to define any available gaps of knowledge or any available object. One of the purposes of the genealogical analysis is therefore to attempt to describe and question the status of the prevailing interpretation as a socially accepted fact. Because the object does not exist other than as a temporary interpretation and categorization of a social phenomenon, the empirical data is spread out around rather than within the social category of the analysis. Accordingly, Beronius claims that while the state itself does not exist, its practices and material certainly does (Beronius, 1991, p. 69). The question, then, is how the social category has been determined by these various practices and materials? And moreover, what does these practices look like and what dominating significance have they fixed at this specific point of time?

As Laclau & Mouffe set out to establish the genealogy of the concept of “hegemony” they describe the analysis similarly: ”Let us avoid any temptation to go back to the ‘origins.’ Let us simply pierce a moment in time and try to detect the presence of that void which the logic of hegemony will attempt to fill” (Laclau & Mouffe, 2001, p. 8). Again, genealogy, in this sense, is not about establishing a naturally fixed relationship between different historical occurrences; it is about tracing a potential gap of knowledge where a power struggle is constantly raging. The object of this power struggle, in turn, is to try to determine the dominant meaning with which to fill the gap.

**The Pupil as a Socially Constructed Category**

At the same time as the category labeled pupil is determined as an object by all the available practices and statements that mention it by name, all pupils are also subjects being constituted by their own actions as well as by those taken by others. This means that while the teacher, for instance, constitutes the pupil as a subject through concrete actions or through interpellation, the pupil also constitutes himself by either responding to these actions or by instigating a constitutive action all on his own. In this context it appears that the pupil is an equally important part

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2 For a more in-depth discussion on interpellation see Althusser's "Ideology and Ideological State Apparatuses" (Althusser, 1998).
of the power relation when it comes to defining and categorizing not only themselves but also the teacher through various actions and practices.

In *The Will to Empower: Democratic Citizens and Other Subjects*, Barbara Cruikshank (Cruikshank, 1999) explains how it is that “powerless” citizens have been enabled to transform into “empowered” citizens using different kinds of self-help programs demanding voluntary engagement from the very people they aim to help. She writes:

> Defined by all that they lacked, the poor needed help, but it was to be given in the form of a stimulus to act for themselves. In the model of powerlessness operationalized in antipoverty programs, power was clearly intended to work through, not against, the subjectivity of the poor. (Cruikshank, 1999, p. 73)

If we apply this reasoning to the context of the school, the power to define the category flows through all the practices and statements aiming to help the pupil regain his authority and help him develop his own “strengths” as a pupil. Accordingly, the pupil is never at the mercy of an anonymous power that is being projected from somewhere above him but rather an active instigator of power in that he more or less willingly lets himself be defined as a category and in addition to that plays an active part in different institutional practices. A prerequisite for the category to function in reality seems to be that the involved individuals take an active part in the programs designed to empower them. Cruikshank describes how “the war on poverty” fails when the targeted individuals choose not to involve themselves for different reasons. Under coercion, it seems, the measures taken on a governmental level are rendered all but useless. Therefore, Cruikshank points out, it is crucial that the will to empower the powerless citizens coincide with their own interests (Cruikshank, 1999, p. 73-74).
From Discipline to Control

Foucault and the Disciplinary Space

Its aim was to establish presences and absences, to know where and how to locate individuals, to set up useful communications, to interrupt others, to be able at each moment to supervise the conduct of each individual, to assess it, to judge it, to calculate its qualities or merits. It was a procedure, therefore, aimed at knowing, mastering and using. Discipline organizes an analytical space. (Foucault, 1977, p. 143)

When investigating the classroom as a disciplinary space, it seems only reasonable to draw upon the theorizing of Michel Foucault who produced several historical studies describing the formation of specific fields of knowledge within some of the major institutions of our time (Foucault, 1965; Foucault, 1973; Foucault, 1977; Foucault, 1978).

Even though Foucault’s theories regarding the practices of the disciplinary societies predates the widely spread computer literacy of contemporary Western society by several years, he introduced key concepts concerning the relation between power and knowledge, for instance, that still appear very well attuned to any study on power relations within more or less enclosed institutions. If anything, there seems to be a growing need for updated studies relating the history of the disciplinary space to the opened-up spaces of the virtual classrooms made accessible through online computers.

Quite likely, the genealogy of the classroom is one closely linked to that of other disciplinary spaces of the past. Much like the factory, the hospital, the prison or the military barracks it can be argued that one of the chief functions of the classroom in the disciplinary societies is to distribute individual bodies in space (Foucault, 1977, p. 141-149).

In order to begin to understand Foucault’s concept of the disciplinary space it is important to first establish the docile body as an object around which the space is organized. The docile body is at once the object and the driving force of the disciplinary space. By the late eighteenth century the disciplinary space is set up in
order to produce docile bodies, that is “the body that is manipulated, shaped, trained, which obeys, responds, becomes skilful and increases its forces” (Foucault, 1977, p. 136). As implied in the quote we are dealing here mainly with the bodies of soldiers. Proving to be an effective way of shaping well disciplined young individuals, however, the model is also applied elsewhere in society and is soon turned into “general formulas of domination” (Foucault, 1977, p. 137).

The disciplinary space is organized so as to allow for a wide array of disciplinary methods intended to control the gestures and behavior of the individual body. In turn, these methods and techniques make for an entire field of knowledge regarding the docile body. Space, as it were, is organized to maximize the use of these techniques.

Foucault describes different areas of knowledge relating the body to the disciplinary space. Each area of knowledge consists of a series of invented techniques enforced in order to control the body in space. Firstly, he talks about “the art of distributions” (Foucault, 1977, p. 141) dealing with how the body/space relationship is organized through sectionalized spacing and enclosed environments for instance; secondly he mentions “the control of activity” (Foucault, 1977, p. 149), involving the temporal aspects of discipline such as timetables and regularity; thirdly he touches upon “the organization of geneses” (p. 156), referring to the maximized use of the body’s resources in relation to both space and time; and lastly “the composition of forces” (Foucault, 1977, p. 162) which has to do with the idea that all of the individual bodies constitute interrelated parts of a greater machinery such as the army or the school. Foucault remarks that: “The school became a machine for learning, in which each pupil, each level and each moment, if correctly combined, were permanently utilized in the general process of teaching” (Foucault, 1977, p. 165).

All of these areas of knowledge – with its carefully designed methodology – come together in the production of the docile body. The machine can only function

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3 Foucault identifies the discursive shift between the societies of sovereignty and the disciplinary societies in the mid- to late 18th century. It is a shift moving from exclusive power exercised by the king to a circulating power involving all citizens on the level of political and economic life of society (Foucault, 1977, p. 73-103).
properly, however, as long as the individual pupil takes an active part in maintaining the machinery.

### Deleuze and the Societies of Control

We are in a generalized crisis in relation to all the environments of enclosure – prison, hospital, factory, school, family. The family is an “interior,” in crisis like all other interiors – scholarly, professional, etc. The administrations in charge never cease announcing supposedly necessary reforms: to reform schools, to reform industries, hospitals, the armed forces, prisons. But everyone knows that these institutions are finished, whatever the length of their expiration periods. It’s only a matter of administering their last rites and of keeping people employed until the installation of the new forces knocking at the door. These are the *societies of control*, which are in the process of replacing disciplinary societies. (Deleuze, 1992, p. 3)

In “Postscript on the Societies of Control” Deleuze looks beyond the disciplinary societies as outlined by Foucault in *Discipline and Punish* and puts focus instead on another discursive shift; one that takes place sometime after World War II and gradually replaces the disciplinary societies with the *societies of control*. In a sense it’s a shift from paying attention to production to paying attention to the product. Deleuze claims that while the disciplinary societies aimed to maximize the efficiency of production by organizing enclosed spaces in a manner that assembled all the disparate parts/bodies into an efficient and well functioning machine, the societies of control, instead, attempt to work an open market where already made products are being bought and sold for stock.

Moreover, the societies of control also lack the sense of temporal closure that signifies the disciplinary societies. Deleuze points out that “[t]he disciplinary man was a discontinuous producer of energy, but the man of control is undulatory, in orbit, in a continuous network” (Deleuze, 1992, p. 5). The crisis that is referred to in the opening quote of this chapter appears to make more sense with regard to this lack of temporal closure. A school building, for instance, built to contain a mass of bodies and to organize them in an enclosed space with the help of a time-table

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4 Foucault uses the example of older pupils supervising and teaching the younger ones in order to illustrate a shared sense of responsibility for the well-being of the machine (Foucault, 1977, p. 165). This function can be compared to Cruikshank’s argument that to successfully help the poor regain power, the poor must take an active part in the practices designed to help them (Cruikshank, 1999, p. 73-74).
that clearly indicates when to do what seems to be a somewhat confusing place if
the temporal aspects of discipline are suddenly abolished. The disciplinary space,
as it were, seems to be dependent upon the temporal aspects in order to fully make
sense. If time is continuous rather than discontinuous, interestingly, the
sectionalized organization of space seems to contradict the lack of temporal
closure. This, no doubt, would seem to result in some form of crisis of identity for
the disciplinary space.

Outside of the school building this temporal breakdown of the disciplinary space
threatens the entire model of the disciplinary societies. Deleuze elaborates:

In the disciplinary societies one was always starting again (from school to the
barracks, from the barracks to the factory), while in the societies of control
one is never finished with anything – the corporation, the educational system,
the armed services being metastable states coexisting in one and the same
modulation, like a universal system of deformation. (Deleuze, 1992, p. 5)

Again, the lack of temporal closure appears to question the very existence of the
buildings erected to make possible the enterprise of the disciplinary societies. In a
sense, the enclosed environment of the school is designed to construct a machine
that appears out of date if the perception of time and space has indeed undergone
the changes that Deleuze suggests. In the disciplinary societies the classroom was
designed to allow for supervision of the conduct and the results of the individual
pupil with some degree of regularity. In the societies of control, on the other hand,
“continuous forms of control” and “perpetual training” (Deleuze, 1992, p. 7) that
does not necessarily rely on the functions of the disciplinary space are called for.

This disruptive shift between the disciplinary space and the space of control is a
noteworthy episode in the genealogy of the classroom. It illustrates well the
conflict of interest struggling to define the very space of learning.

5 Examination, for instance, is a technique that appears well adjusted for evaluating pupils with
regards to both enclosed space and discontinuous time.
Towards Defining a New Classroom

Postmodernity and Space

The material practices from which our concepts of space and time flow are as varied as the range of individual and collective experiences. The challenge is to put some overall interpretive frame around them that will bridge the gap between cultural change and the dynamics of political economy. (Harvey, 1990, p. 211)

At the onset of “Of Other Spaces” Foucault describes the 19th century as an epoch predominately occupied with history and with development. The present, on the other hand, may well come to be known as “the epoch of space” (Foucault, 1986, p. 22), he claims. In a sense, the functions of space in the disciplinary societies appear to have always been subordinated to ideas of development in one way or another. Space was generally organized in such a manner so as to streamline production and help further development in whichever areas possible. In the shift from the disciplinary societies to the societies of control, however, the discontinuities of both time and space appear to have threatened earlier ideas of “the ever-accumulating past” and instead made way for “the epoch of juxtaposition, the epoch of far and near, of the side-by-side, of the dispersed” (Foucault, 1986, p. 22).

David Harvey, in turn, talks about a corresponding shift but in terms of modernism and postmodernism rather than disciplinary societies and societies of control. He describes “a crisis in our experience of space and time, a crisis in which the spatial categories come to dominate those of time, while themselves undergoing such a mutation that we cannot keep pace” (Harvey, 1990, p. 201). Time, in the modernist sense of the concept, appears to refer to a linear chain of interrelated events that constitute the ever-accumulative past as mentioned by Foucault.

As implied earlier, the classroom seems to be a space defined by knowledge largely invented during the era of the disciplinary societies. It is organized mainly so as to distribute individual bodies in space, to assign each individual body a specific place and to control every conceivable line of communication in order to ensure the functioning of the machinery at large. In terms of the crisis in our experience of
time and space, however, the classroom has been able to sustain a front that reveals surprisingly little of the so called crisis. This unwillingness to give up on the prevailing interpretation of the disciplinary space – the classroom being one – is what Deleuze seems to be aiming at when he proclaims the end of the institutions – the school for instance – of the disciplinary societies (Deleuze, 1992, p. 3).

Bauman applies the idea of a postmodern crisis to the educational system and, more specifically, to the universities. He describes an institution defined by the linear logic of modernity and one that is unable – or unwilling – to adapt to “the universal melting of identities, with the deregulation and privatization of the identity-formation processes, the dispersal of authorities, the polyphony of value messages and the ensuing fragmentariness of life...” (Bauman, 2001, p. 127). The fragmentariness referred to by Bauman appears well attuned to the shift in the experience of space and time as mentioned earlier. The classroom, in this context, seems to be somehow stuck in the shift between two different ways of interpreting space and time. Bauman indicates that this crisis – or perhaps it is better referred to as a power relation struggling to define an available gap of knowledge – calls for new strategies and new definitions within the educational system as such (Bauman, 2001, p. 123-139).

Heterotopias and Other Rooms

The body exists in space and must either submit to authority (through, for example, incarceration or surveillance in an organized space) or carve out particular spaces of resistance and freedom – “heterotopias” – from an otherwise repressive world. (Harvey, 1990, p. 213)

Returning to Foucault and “Of Other Spaces,” the text, in one regard, is an attempt to outline the history of the Western experience of space. Spanning from the Middle Ages with its often oppositional “hierarchic ensemble of places” labeled “the space of emplacement” (Foucault, 1986, p. 22), through the 17th century,
Galileo, and the opening up of the space of emplacement, the experience of space in the present epoch is signified rather by a series of relations of sites; “sites of transportation,” “sites of temporary relaxation,” and “the closed or semi-closed sites of rest” (Foucault, 1986, p. 24) etc. In the medieval experience of space, Foucault claims, there seemed to exist a fixed relationship between a thing and its place – either it was in the right place, as determined by nature, or it was in the wrong place, i.e. displaced. In the 17th century, however, the relation between a thing and its natural place was temporarily dissolved or desanctified as the barriers separating different places were questioned by science. The point of conflict in the discursive shifts of experiencing space, as identified by Foucault, has to do with a contradictory, or perhaps unresolved, relation between the desanctified space of the present and the sanctified space of the past. Foucault describes the conflict as follows:

And perhaps our life is still governed by a certain number of oppositions that remain inviolable, that our institutions and practices have not yet dared to break down. These are oppositions that we regard as simple givens: for example between private space and public space, between family space and social space, between cultural space and useful space, between the space of leisure and that of work. All these are still nurtured by the hidden presence of the sacred. (Foucault, 1986, p. 23)

The lingering sacred qualities of the Western experience of space seem especially relevant to an analysis dedicated to the spatiotemporal experience of the classroom. It is certainly interesting to consider that perhaps the sanctification of space as experienced in the Middle Ages have left visible imprints or scars in the present experience of space. The classroom, for one, appears quite readily placed on one end of an oppositional relationship between any of the spatial categories mentioned in the quote above.

Beyond the various interconnected spaces of contemporary sites, Foucault identifies two categories of space that exist in relation to – although always outside of – all the other spaces; sites of utopia and sites of heterotopia (Foucault, 1986, p. 24-27). The second category – that of heterotopias – describe a space similar to,

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7 The sanctified space refers to the idea that there exists a fixed or a natural relationship between certain things and certain places and that there are naturally oppositional relations between the various functions of different places.
but quite unlike, the altogether unreal place of the utopia. It refers to a real place with somewhat unreal qualities if you will. The heterotopia is a place related to, but even more so it is a place both countering and mirroring another site. It is also very much a perpetual elsewhere. Foucault offers the example of the cemetery. The cemetery is connected to most other sites in that each individual has some form of personal connection to it through departed relatives or friends, for instance. At the same time, however, it appears different from all of the other sites of the cultural network. It is a space dedicated to “the cult of the dead” in a time when “people are no longer sure that they have a soul or that the body will regain life” (Foucault, 1986, p. 25). In this sense the cemetery is a counter-site. It offers a warped mirror image with its implicit bonds to the otherworldly that the rest of Western societies appear to have long since cast aside.

The heterotopia is also “capable of juxtaposing in a single real place several spaces, several sites that are in themselves incompatible” (Foucault, 1986, p. 25). The theater and the cinema are two examples of such places, and perhaps today any real place is a potential heterotopia providing that it contains the gateway of a computer offering its user an infinite selection of representations of other rooms. Heterotopias are not only spatially ambiguous in that they can bring together places that would otherwise be kept apart, but they also possess the ability to affect time in a similar way.

The classroom, then, might be described as an allegedly desanctified site still connected with the sanctified spaces of the past, and one that is quite possibly affected by the troublesome shift between the disciplinary societies and the societies of control. It is a room where the perception of space and time appears to be in need of renegotiation due to the imminent collapse of the disciplinary spaces and where the different heterotopias of society may be threatening the enclosed public and social place of work that it once was.

Foucault closes the text by describing the ship as a heterotopia *par excellence*. He writes that it is "a floating piece of space, a place without a place, that exists by itself, that is closed in on itself and at the same time is given over to the infinity of the sea..." (Foucault, 1986, p. 27). Potentially, the other classroom – the room
beyond the gateway of the computer in the classroom – is somehow distantly related to the ship leaving port.

**Boku and a New Space of Learning**

I did not realize what a big impact the school had on my life until it closed. My sense of time was governed by the school year – when term began, when it ended, the holidays between. Now that we had been set free we had all this time on our hands. When we woke we no longer felt the brooms on our backsides or our mums shouting at us to *Ged up, Ged up you lazybones!* (Jones, 2007, p. 12)

Quite obviously, a single computer program cannot possibly be claimed to revolutionize the perception of space and time within the institution of the modern Western school. It may, however, indicate a tangible conflict taking place somewhere in the aftermath of the discursive shift between the disciplinary societies and the societies of control worth noting. It may also provide an alternative space, hosting certain practices threatening to redefine the space of learning as it questions some of the practices in the classroom that appear distantly related to those of the disciplinary space of the past. In doing this, these practices may also – indirectly – pose questions regarding the present space-time relationship in school. For instance, if the spatial boundaries erected in order to ensure the functioning of the classroom in the industrial era are gradually being torn down and replaced by not so enclosed spaces, why then should the temporal aspects of the very same institution stay the same? Moreover, the same questions regarding the space-time relationship may even function to unveil some of the remains of the disciplinary space still echoing in the corridors of the modern day school building. Bringing the relation between the contemporary practices and its historical predecessors to the surface may even make it slightly more difficult to completely disregard this suggested connection and carry on as usual.

Explicitly, Boku is primarily intended to introduce children to the world of computer programming, utilizing a specific type of visual programming language that appears well adjusted to their presumed limited knowledge of the textually based computer languages. Implicitly, however, it also provides access to a virtual
space where children can learn on their own, seemingly uninterrupted by the otherwise ever-present guiding hand of the teacher/adult. Once the programmer has a finished product – or even a small segment – he may then meet up with other Boku programmers online in order to have them try it out, discuss it with them and perhaps even subsequently alter it based on their comments.

Interestingly, the classroom is considerably expanded in the sense that it is no longer composed of just a singular space, but of a composite space made out of several different spaces. The individual pupil is situated in an enclosed physical classroom containing one or more computers. This computer is, in turn, granting him access to an open virtual classroom where he is put in immediate contact with other pupils in other physical classrooms abiding by other spatiotemporal rules specific to each of their respective classrooms. In combination, these very different spaces make up a contradictory space that appears somewhat disrespectful to the various rules as formulated in accordance with the disciplinary spaces of the past.

The social aspects of Boku would seem especially important since they allow for a wide array of communicational channels that add a sense of tangibility to the virtual classroom. The pupil is not alone in the virtual classroom; quite on the contrary, he is joined by other pupils connecting him with a number of different real spaces beyond the enclosed space of the individual classroom. This spatial quality seems especially relevant in light of Foucault’s notion of the heterotopia as related earlier. Arguably, the composite space – located somewhere between the virtual and the real classroom – function to simultaneously mirror and to contradict the enclosed space of the classroom.

Collaboration and Creative Learning Online
On a social and interactive level in particular, Boku appears to have a lot in common with the Scratch project from MIT media lab, being another virtual platform for creative learning aimed at children. The developers responsible for the Scratch project, already being up and running, have also set up a Scratch Online Community where children may share and discuss their interactive creations with

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8 While Boku specifically provides a gaming development environment for children, Scratch is an environment for creating interactive applications of many different sorts.
each other. Mornoy-Hernández and Resnick talk about “creative appropriation” when explaining the basic idea behind sharing interactive creations online (Mornoy-Hernández & Resnick, 2008, p. 51). The term seeks to describe the process by which an already finished interactive creation is used to provide the creative foundation for another one. In essence, programmers are allowed full access to the programming codes of older Scratch projects and may analyze them in order to extract certain attractive features to be put to use again, as is, or in a slightly modified form. This means that the learning process is intimately linked with getting to know, utilizing, and possibly developing further the creative products of other children via a web-based community. What seems to set projects like Scratch and Boku apart from other creative web-based communities – such as Youtube, for instance – is above all the unlimited access to the creative process itself, offered through continuously publishing the codes of earlier projects. In this sense, both Boku and Scratch are based on a community of children sharing ideas and creative approaches with each other. The child, consequently, is acting out the role of both pupil (when acquiring knowledge drawn from the projects of other peer programmers) and teacher (when finally offering their own finished project for other programmers to learn from).

Collaboration seems to be frequently regarded as a key to both learning and teaching in an online creative environment. Peppler and Kafai conclude – in a discussion on interactive learning online – that: “Youth not only learned about computer programming from their social participation but they also became motivated by collaborating with peers and mentors to create and share work” (Peppler & Kafai, 2008a, p. 3). Again, this suggests that learning and teaching is very much interconnected in this kind of interactive environment in particular. The twin role of the pupil-teacher is especially interesting since it appears to stir the issue of power relations in the classroom.

Interestingly, while on the one hand looking to enhance children’s ability to learn from each other in a creative online environment, claims are also made that involving young people in the gaming development process may even put some pressure on the gaming industry at large to produce games of a higher standard. Peppler and Kafai elaborate:
While youth are already discriminating readers of the genre, youth are not as proficient at articulating what makes a particular video game or software application “good.” Asking youth to design video games challenges them to make these assumptions explicit and asks them to build upon this knowledge to make informed suggestions for change. Through this type of conversation, we envision that youth will learn about, question, and rewrite power structures found in dominant commercial texts. (Peppler & Kafai, 2008b, p. 2)

This seems to imply, however, that children, when put in complete control of the actual game design, are somehow naturally able to thwart the prevailing power structures and create a game design more or less independent of any cultural restrictions otherwise constantly present. While it may certainly entail a more heterogenic spread in so far as the demographic of game designers go, it seems to completely disregard the fact that learning, in modern Western societies at least, appears to be very much indebted to the disciplinary techniques of the past and the methods of control as developed in more recent memory. The above proposition – suggesting that children are somehow inherently able to rise above cultural stereotyping and to see beyond an imbalanced social structure – may, in fact, not be an altogether credible thesis. Especially considering the possibility that pupils may not be able to break free from the bonds of power controlling the available bodies in the space of learning – be it that of a pupil or that of a teacher. A possible way of approaching the different ways in which pupils control their own behavior so as to keep in line with various social and/or cultural rules, is to talk about technologies of the self.

**Boku and Technologies of the Self**

One of the main features of Boku, as an educational tool at least, is that it is intended to function without the aid of an outside tutor or teacher guiding the pupil through the actual process of programming. This means that it is no longer absolutely necessary for a teacher to monitor the development of the project other than as a strictly disciplinary measurement. Because of this, it would seem to evoke some interesting questions with regards to the ongoing power relations acted out in the classroom. If the teacher is no longer monitoring the pupil, who then is? And who controls the actual learning process? If the pupil is indeed taking charge of the learning process, does that automatically imply a powerful act of
liberation or has the control somehow simply shifted from the teacher to the pupil whilst looking and functioning much the same?

In order to follow up on Deleuze’s reasoning concerning the shift between the more blatantly disciplinary methods of past societies and the perpetual control of modern societies, it appears valid to – once again – turn to the theorizing of Foucault. Foucault argues that the question concerning the right to exercise power is at the core of the transformations of society undergone in the 19th century. He claims that: “Power is no longer substantially identified with an individual who possesses or exercises it by right of birth; it becomes a machinery that no one owns” (Foucault, 1980, p. 156). If indeed it becomes a machinery owned by no one in particular, then that would seem to imply that the privileged position of power is always up for grabs and exposed to constant renegotiation. It does not mean, however, that there are no privileged positions in a power relation, but that these positions are just that; positions susceptible to change. No one is guaranteed a privileged power position but anybody can be a – more or less likely – candidate for one.

Power, in turn, implies some form of control. And since control is no longer primarily obtained through the disciplinary techniques developed in the late eighteenth century – at least not to the extent that it once was – it now seems to require voluntary and active subjects9. The pupil, then, being a voluntary subject, is arguably required to control himself in order for the machinery to function. And while the role of the teacher has gradually transformed from being primarily an enforcer of disciplinary techniques to something quite different altogether, the pupil may in fact be expected to shoulder some of the tasks formerly entrusted with the teacher. In order to do this, the pupil may need to rely on what Foucault labels technologies of the self:

[T]echnologies of the self, which permit individuals to effect by their own means or with the help of others a certain number of operations on their own bodies and souls, thoughts, conduct, and way of being, so as to transform themselves in order to attain a certain state of happiness, purity, wisdom, perfection, or immortality. (Foucault, 1988, p. 18)

9 Again, this can be compared with Cruikshank and the empowerment of powerless citizens in The Will to Empower (Cruikshank, 1999).
Technologies of the self are intimately linked with *technologies of power*, “which determine the conduct of individuals and submit them to certain ends or domination, an objectivizing of the subject” (Foucault, 1988, p. 18). What appears especially relevant to the case of Boku and its potential impact on the power relations in the classroom, are the various techniques related to *askesis* as performed by the Stoics in ancient Greece. Askesis, in the philosophical sense (as employed by the Stoics), refers to techniques designed to prepare the subject, not for the afterlife, but for the reality of this world. It concerns “a set of practices by which one can acquire, assimilate, and transform truth into a permanent principle of action” (Foucault, 1988, p. 35). Interestingly, it seems to concern a set of principles handed down from the teacher to the pupil, to be internalized by the pupil and then subsequently to be employed at will whenever necessary. Once the principle has been spelled out it is really up to the individual pupil to see to it that it is being put to use sensibly. Ideally, then, the pupil is no longer in need of the presence of a teacher in order to remind him of the value of the principle. To put it briefly: “The subjectivization of truth is the aim of these techniques” (Foucault, 1988, p. 35).

Once a code of conduct has been successfully internalized, with any luck, the pupil should then be quite capable of acting out the role of the teacher as well as that of the pupil. Equipped with a set of useful principles and the ability to reason logically, the pupil should be able to anticipate and deal with most any obstacle – such as those presented by Boku for instance – without having to rely on a teacher to guide him safely through. Foucault explains the features of askesis accordingly:

They include exercises in which the subject puts himself into a situation in which he can verify whether he can confront events and use the discourse with which he is armed. It is a question of testing the preparation. Is this truth assimilated enough to become ethics so that we can behave as we must when an event presents itself? (Foucault, 1988, p. 35-36)

This is not to say that an enterprise such as Boku is automatically rendered useless in so far as disturbing or questioning the prevailing power structure in the classroom; but simply that the discussion concerning the power relation between teacher and pupil might really be much more complex than it is often made out to
be. Arguably, the power relation is not naturally equipped with any fixed roles or static positions. What is more, it may even seem pointless to think of these positions in dichotomized terms of good and bad, or powerful and powerless since they appear to interact and really seem to depend upon each other to function. At times, as with the example above, they may even seem to temporarily blend together and become one.

Furthermore, even as the boundaries of the classroom is most likely subject to some degree of renegotiation, it would seem that the practices designed to control the behavior of the individual pupil may not, in fact, be terribly affected by this at all. Arguably, the societies of control have simply managed to translate the disciplinary practices of the past into similar practices of control more attuned to the opened up spaces of modern day society. This, in turn, would seem to challenge the idea expressed by the main character of Lloyd Jones’s *Mister Pip* (Jones, 2007) – as quoted earlier – implying that by tearing down the actual building, we may also tear down the various power relations and the overarching rules used to govern pupils within that building. It seems, in fact, the building in a sense continue to live on within the pupil.
Empirical Study

Background
The setting of the empirical study was a classroom in a relatively small school – with 235 attending pupils, spanning from age 6 to 16 – in Malmö, Sweden. The participating group was made out of six pupils in 2nd grade and one teacher. Each of the participating pupils was given a consent form to return signed by their legal guardian. The pupils were each given access to a portable computer and an x-box controller by which they were able to communicate with, and maneuver, Boku. The six portable computers were set up on desks grouped together in two separate stations, thereby dividing the participants into two groups with three pupils in each group. The teacher was not given any specific instructions in as far as how to monitor the two groups. I decided to let the teacher decide about dividing the children into groups and also which pupil should belong to which group. I did this since I wanted her, as a teacher, to at least initially remain in control of the situation, rather than just assisting me in my project. Therefore, I decided to focus on documenting the test run and to participate as little as possible myself. In addition, I also let the teacher decide which pupils to include in the test group. Again, I did this because I wanted the teacher to stay in control of the preparatory phase.

Before the actual test run very few instructions were given to the members of the participating group. What little information they had access to prior to testing the program were given to them by their teacher. Before the participating pupils arrived I briefly informed the teacher about some of the main features of Boku. In short, the pupils were told that Boku would enable them to design games and that in order to figure out what it could actually do, they would have to try it out and see for themselves. They were also told that in case they needed any help, or if they got stuck, they should primarily turn to each other. Accordingly, they were told to collaborate as much as they needed and/or wanted to and to turn to their teacher.
only as a last resort. The test run was scheduled to last for an hour and a half with no intermediate breaks.

I documented the test running of Boku using a digital video camera in order to be able to analyze the spatiotemporal relation between pupil, teacher, computer, and classroom, after having concluded the study. I have, to the best of my ability, tried to disregard aspects of gender, ethnicity, social class etc., in order to focus on the spatiotemporal aspects and the power relations alone. In a more extensive study any or all of the above mentioned categories should of course be dealt with – or at least briefly addressed.

What follows is a brief discussion summing up some of the more pertinent results of the study while disregarding certain aspects deemed to be of minor interest to this particular thesis. I have, as indicated earlier, primarily focused on the relation between the disciplinary space of the classroom and the other classroom – represented in this case by Boku. In doing this, I have been paying close attention to the various features of the power relations that were acted out in accordance with the various spatiotemporal rules of the classroom. Given the limited size and scope of the study the results are obviously very tentative. Still, even though the study is somewhat limited, I believe it may serve to illustrate how the power relations in the classroom may come to be affected by a program such as Boku. After all, the aim of the empirical study is to raise questions rather than to provide answers.

Regrettably, since Boku is a program currently in development, the group was not able to participate in any online activities, sharing and discussing the results with other Boku programmers. This, however, is something I hope to be able to do as soon as a platform specifically designed for presenting and sharing Boku projects is made available online. It will, no doubt, offer yet another valuable aspect to the discussion concerning the different spaces of learning and the power relation that goes on within, and between, these different spaces. Consequently, I can only hope that this thesis opens up for a more extensive empirical study to be carried out sometime in the near future.

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10 The teacher was not introduced to Boku before any of the children were, i.e. she did not possess any kind of special knowledge about the program that the children were lacking.
Discussion
The pupils got started almost immediately after having each been assigned a computer and a place to sit. In order to save some time I had set up Boku on their computers prior to their arrival. I had also decided to skip the introductory screen and gone ahead and set up a blank screen for them to start working on. I did this because the introductory screen presented the option of playing already made levels in addition to making new ones and I wanted them to at least try to design a level on their own before getting started on a level that was already playable. Interestingly, a pupil in one of the groups soon found out that by going back to the introductory screen they could play the game rather than designing it, making my preparatory efforts appear somewhat redundant. This brings us to the first point of discussion:

- Playing the game or designing the game?

Before having been made acquainted with the environment of Boku some of the participating pupils seemed to find the lack of structure a bit unnerving. The fact that no immediate task was laid out before them confused some of them, leading one to remark that it “seemed pointless.” In a sense, the open environment of Boku, lacking any clearly designated place from where to instigate the actual design, appeared to overwhelm a couple of the pupils in particular.

Not long after the test run was commenced, the group with the pupil who navigated back to the introductory screen started playing already made Boku levels rather than attempting to design their own games. This group was initially very pleased with their group member’s find and skipped from level to level eagerly telling each other about all the different features of the particular level they were playing at the moment. The other group kept more to themselves, and while they also tried out some of the already made levels eventually, they soon returned to designing their own Boku environments.

Two different approaches seemed to stand out. On the one hand, the children who seemed to be more noticeably disturbed by the lack of structure found in the gaming design aspect of Boku appeared to find relief in being able to play games that already contained a fixed basic structure or narrative. After a while, however,
the kids got increasingly bored with playing the already made levels and decided to give their own game designs another try. But since they had given up on designing their own level once before, this seemed to render them less patient the second time around and they proved less inclined to actually persist with the design of their own making. On the other hand, the children who stuck with the designing aspect of Boku initially seemed to develop a certain skill for basic visual programming that, even though they eventually tried to play some of the already made levels as well, still made them decide to continue designing their own game environments in the end. Obviously, these are fairly tentative trends and by no means two clear cut approaches, but it still appears interesting to consider the different need for a ready made structure exhibited by the different pupils in the classroom.

Another interesting aspect of the study puts more focus on the role of the teacher and on the relationship between teacher and pupil in particular.

- Asking the teacher or helping each other?

Again, I believe it is possible to distinguish two rough trends concerning what the kids chose to do when they decided they needed outside help in order to overcome certain obstacles presented by Boku. On the one hand, the kids who got more involved with the programming rather than the gaming seemed more inclined to turn to each other for help. Accordingly, the kids who did not seem to be able to crack the code of programming, so to speak, but were perhaps mislead by the lack of structure, turned instead to their teacher for help. Ironically, the teacher, in this case, was very much in the dark since she had not had the chance to try out Boku for herself.

Interestingly, even though the kids were told explicitly to turn to each other for help, and even though their teacher could not offer any help but would instead refer them to other classmates who perhaps could, the kids who turned to the teacher for help kept doing this repeatedly, regardless of the poor result. In short, they could not seem to bring themselves to overrule the teacher's expertise but relied on her time and again to refer them to whoever could actually help them rather than instigating that kind of communication themselves.
Also, they seemed less inclined to get up out of their seats and find out how their classmates were solving their problems than the kids who got into programming. As a result, half the group, roughly, collaborated actively and walked to and from each others desks in order to find out what their classmates were doing, while the other half stayed in their seats and waited for their teacher to come and help them out – or as was the case on more than one occasion, to tell them to go check out what the others were up to. Thus, while some pupils very quickly started cooperating without involving the teacher, some seemed much more hesitant about transgressing their role as a pupil and to take on some of the teacher's former tasks. This seemed to present two different approaches to the space of learning.

- Staying in your seat without a clue or getting up and getting what you need?

Discouraged by the teacher's apparent inability to help, one of the pupils decided – about half way through the study – to abort the test run and to resort to reading an assigned book instead. It appeared that the lack of any explicitly formulated assignment in Boku had led the pupil to take control of the situation and to apply some well known structure to the threatened space of learning; i.e. the pupil abandoned the computer and turned instead to a book. This brings us to the fourth point of the discussion, namely:

- Keeping at it or giving up?

Interestingly, the pupil who decided to withdraw from the test run seemed annoyed to find that no one else from the group chose to follow her example. The pupil turned to a classmate sitting across from her – one who had also complained about the lack of structure – and asked her if she was not also going to abandon the study? When her classmate told her that she did not wish to give up just yet, she frowned and turned to her book. After another ten minutes or so, however, the pupil reading the book seemed to have a hard time concentrating on reading and appeared to be more focused on trying to follow what her friend was up to using Boku. After another few minutes she had abandoned her book altogether and turned once more to the computer. This time, however, she seemed much more inclined to collaborate with her classmate and expressed a stronger wish to
understand how Boku worked. Apparently, the idea of being left out of the group seemed more threatening to her than operating in an environment with no apparent or recognizable structure. What, then, were the kids actually up to?

- “What are you doing?” “I don’t know.”

The last point of the discussion deals with the teacher’s attempts to test or evaluate the knowledge of the pupils in this – at least partly – altered space of learning. When the teacher was not called upon by the pupils, there was no obvious reason for her to monitor what they were doing and despite this she seemed predisposed to check up on them on a fairly regular basis. While the children who had obvious problems getting started repeatedly called out for the teacher’s attention, the children who were working away seemed less likely to attract the attention of the teacher. Despite this, the teacher knelt down beside them asking them what they were doing with some regularity. To this they often replied something to the effect that they did not quite know and then kept on working as concentrated as ever. This type of reply appeared dissatisfaction since it seemed to warrant a comment like: “Ok, but at least try to explain to me what it is you’re doing.” When the pupil insisted that he did not know, the teacher gave up only to return moments later to rephrase the same question again. Again, it does not seem very reasonable to draw any substantial conclusions from these few observations since the study is in fact much too limited in scope. Nevertheless, I believe it to be quite noteworthy that regardless of what type of knowledge was being produced while the pupil was working with Boku, it did not seem to be enough for the teacher to just conclude that the pupil was actually working hard, but that she seemed determined to find out more about the specific nature of the knowledge. So much so that she decides to interrupt the busy pupil in order to find out.

Finally, I believe the time aspect of the study is also worth elaborating somewhat. It seemed, when asked about it after the actual study, that the children who felt they had developed a deeper understanding for Boku thought the study was too brief whilst the children who didn’t feel like they quite understood what they were expected to do felt it was a bit drawn out at times. This may appear perfectly natural, but it still seems valid to point out that the children who got confused by
the seeming lack of structure called for a more solid time frame while the children who appeared to take advantage of the lack of structure, on the other hand, simply wanted to keep going regardless of what their time table said.
Conclusion

I have attempted to briefly trace the genealogy of the classroom, moving from the disciplinary societies of the past to the societies of control, and while focusing on a supposed crisis in the postmodern experience of space and time I have made an effort to describe a potentially new space of learning, very much conflicted by the traces left by the disciplinary space of the past. Using a computer program in development – Boku – as an example, I have ventured to suggest that it may in fact provide a potential gateway to a new space of learning: a heterotopian version of the conventional classroom, if you will. The tangible effects on space and time – made visible through the use of a virtual classroom – may even indicate a possible successor to the classroom as traditionally laid out in accordance with the various rules of the disciplinary space of the past.

Furthermore, I have focused on the power relation between teacher and pupil in order to discuss how certain features of this particular social setting may not be as affected by the altered perception of space and time as one might otherwise be led to believe. I have suggested that the while the teacher may not be physically present to the same extent as before, the role of the teacher is then perhaps – at some levels at least – gradually taken on by the pupil through what Foucault refers to as technologies of the self.

As seen in the empirical study, for example, one of the participating pupils actually attempted to recreate the partially dismantled disciplinary space herself. After having first been confronted with the less structured space of learning in the form of Boku she turned to a more well known space of learning as represented by a physical book more strongly connected perhaps to the physical classroom. Only when she found that she was quite alone in her attempt to reorganize the space of learning did she allow herself to venture back into the as of yet unknown world of Boku once more.

Outlining the general characteristics of what I have been referring to as a potentially new classroom, I have found that a new classroom does not necessarily entail an automatic improvement or a great change of any sort. Certain
prerequisites may change, granted, but some of the key functions seem to remain the same regardless. Arguably, some practices have simply shifted agents and are now performed by the pupil rather than the teacher.

Again, turning to the empirical study, some of the kids partaking in the project were somewhat reluctant to instigate the designing of a game since they did not have an explicit assignment to guide them along the way. They complained that it seems to lack meaning and decided instead to do something that they were already quite familiar with – playing an already designed game. Even though the results at this point are very tentative I would still argue that since they had not been able to successfully internalize a code of conduct applicable to the environment of Boku, they backtracked into a more familiar environment using what could arguably be called technologies of the self. Lacking a teacher to correct their behavior in this new environment they used past experiences to correct themselves.

I therefore believe it is reasonable to conclude that Boku does not automatically offer a safe passage into a new – more attuned – mode of learning, but that it does, perhaps, offer a space where learning has to adjust to a new set of spatiotemporal rules. Seeing as the disciplinary space is inherently unfamiliar with these new rules, a modification of practices utilized in this space may even be called for. As argued, there is no tangible cause and effect relation between the discursive shift that is renegotiating some of the properties of the classroom and the power relations within that very classroom. Even though new rules are replacing old ones in the perpetual struggle over who gets to determine or fill the available gaps of knowledge – in this case the space of learning – this is not to say that certain key practices will not remain the same even though the practitioners may have been exchanged.

In essence, while technically apt researches such as Peppler and Kafai (Peppler & Kafai, 2008a; Peppler & Kafai, 2008b), for instance, seem to advocate a more extensive use of this new technology in educational settings on the grounds that it is equipped with certain democratic properties while at the same time being able to tap into a natural stream of creativity inherent in children, I would say rather that computer programs such as Boku – or platforms like Scratch for that matter – are not in themselves capable of challenging the mode of learning as developed
during the disciplinary societies, but that they may come to represent possible gateways into a space that certainly may come to challenge the disciplinary space of the classroom.

What Boku actually does, I would argue, is it challenges the traditional role of the teacher as an agent in complete control of all of the available sources of knowledge. It does this partly since it does not appear to provide a neatly carved out space reserved exclusively for the subject position of the teacher. Instead, it offers a space specifically designed to accommodate the dual role of the teacher-pupil as discussed earlier. In this sense, Boku seems to call for a renegotiation of the subject positions as established according to the rules of the disciplinary space.

Interestingly, when turning to the results of the empirical study, I find it intriguing that even while it was quite clear that the teacher had lost some of her former authority with some pupils, others would still insist on her acting out the traditional role of a teacher in complete control of all available sources of information. While some found potential teachers in their classmates, others would persistently call upon the teacher who, in turn, would steer them towards their classmates for help.

Also, the fact that the teacher repeatedly attempted to check up on the pupils who, quite obviously, were in no need of assistance – at least not from her – appears to be something of a tell tale sign of the disturbed power relation. Evidently, it may seem quite confusing to be positioned as a teacher when it is suddenly not so clear what a teacher is expected to do or how a teacher is expected to behave. Again, much like some of the pupils the teacher seemed to backtrack momentarily and acted according to a more familiar pattern rather than trying to orientate herself in a new environment without a map.

In itself, however, this does not seem to provide a great many clues in as far as what kind of change it will bring to the actual mode of learning. This appears important to note, seeing as new technology is sometimes – and often for no apparent reason – equated with a new mode of learning. What seems all the more important, then, is to trace some of the practices that are visible in different stages of history, and that appear to remain visible even to this day, in order to begin to
understand some of the forces at work here. Focusing on the history of these individual practices, rather than on the technical advances made, may provide a background through which we may then more fully understand the relation between learning and space and time.

A more extensive empirical study will of course also influence the result of any future project. It may even allow for more consistent conclusions in as far as what kind of impact a program such as Boku may have on different aspects of learning in an enclosed classroom setting.


