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Leisure Is Hard Work: Digital Practices and Future Competencies

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Media Materials

This volume has provided numerous examples of the often innovative ways in which children and young people explore who they are by using new, digital media. We have also seen that adults tend to react to these explorations in rather normative ways, either by celebrating how creative, innovative and media savvy young users are or by ignoring their output as unimportant or trivial, not to mention the many parents, policy makers, and teachers who deplore the results as inferior in cultural quality or who focus on the perceived risks involved in going online or communicating on the go.

But what about adults' reactions in a more collected fashion? How can, and could, schools as well as public and private corporations handle young people's digital identity processes? Do they matter for these institutions? Should they matter? This chapter will attempt to answer these questions by focusing on education. The reason for this focus is simple: in many parts of the world, the impact of digital media on education has been one of the key issues in public debate and policymaking over the last two decades. Much has been made of the "information superhighway," of the wiring of classrooms, and of the technical training of teachers and pupils. Much less has been made of the challenges posed to education by the more varied and often more advanced communicative skills and creative media practices developed by young people in their leisure time—through texting and blogging; through the editing of visuals, graphics, and sound; through gaming; and through the circulation of images and text via cell phones.

Given the enormous expansion of these leisure activities, it seems timely that we begin to ask ourselves whether they should impact on educational priorities, and, if so, what these impacts and their implications might be. Let me state from the outset that I think they should, and the reason is this: young people's digital practices promote the formation of competencies that are absolutely vital to their future, in an economic, social, and cultural sense. Adults need to recognize the validity of these practices in the spirit of democratic participation, and acknowledge young people's right to have a voice and to be heard. However, societies also need to recognize and systematically develop these practices, because they are key to children's chances of survival in this century which is already now marked by intensified global, and often mediatized, interaction and mutual dependence—both with people with whom we agree and with people with whom we may disagree. School is still a key site for joint competence formation, and so this is another reason for discussing the challenges posed to education by these new digital practices.

In order to ground the discussion, I will describe a particular instance of youthful media production selected not for its spectacular results, but for its entirely mundane qualities that are repeated on a daily basis and through different means in children's bedrooms, in cyber cafés, and in youth clubs across the globe. The main difference is that this particular production process was documented and analyzed as part of an ongoing project on digital creativities where I was part of the research team.[1] I draw on this description and on the growing body of literature on digital expression, including chapters in the present volume, to discuss in more detail the challenges that these processes arguably pose to educational systems in many parts of the world. How do young people's experiences with digital media in their leisure-time impact on their attitudes to learning and to educational practices? How may they handle existing learning materials, and do these have to be modified? What about the social networks of learning, the distribution of roles, and power relations in schools? Last but not least, why should schools rise to these challenges and what are the dilemmas they face in doing so?

Obviously, children and young people who engage in digital practices in their leisure time rarely define their activities in terms of learning, in fact quite the opposite: when they are out of school, they want to do something different from the routines found when they are at school, and media are an obvious and popular choice. So, when I speak about learning processes in out-of-school contexts in this chapter, I inevitably apply an adult and not a youthful perspective. The point of departure for my deliberations is a belief that what seems least relevant for current school practice may, in fact, be highly relevant for the future of educational and social developments.

"Where do we want to go with this?" Digital Production and Joint Learning Processes

In the Danish provincial town of Viborg, known for its innovative policymaking on children's culture, two classes disbanded ordinary teaching in order to participate in a two-week digital animation project at a local media workshop. The young participants were aged twelve to thirteen and fifteen to sixteen, respectively. Facilitated by two professional animators and with little or no prior knowledge of the software applied, pupils and teachers met for what turned out to be a very intensive work process. All that was fixed beforehand was the pupils' group size (five or six) and composition; an agreement that for each class the workshop should result in four final productions to be shown to the entire school, including parents; and that the theme for these productions should be "mirrors." So, most of the pupils' work process was a matter of open-ended negotiation and social collaboration over their narratives, while at the same time learning how to use the software.

The teachers rapidly assumed a rather marginal role as managers of conflict and practical problems, while the professional animators, who did not know the children beforehand, took center stage as facilitators of learning, particularly in a technical sense. However, many technical challenges and most narrative choices were resolved by the young people themselves. Apparently without too much discussion, hierarchies of proficiency were established among the children, and bits of expertise readily exchanged. Although the four teams clearly competed to produce the best result in both a technical and a narrative sense, knowledge was shared and the often fierce conflicts over content and form were largely resolved within or between the groups, with girls often playing a mediating role. A few of the teachers clearly had difficulties in giving up their usual roles as directors of events, but most seemed to enjoy a bit of time off from their regular duties, with only a math teacher offering to be tutored along with the pupils in using the rather complex software through which moving and still images, graphics, music, and text could be combined and edited.

Not surprisingly, the common theme of "mirrors" resulted in different narratives, each lasting between two and four minutes. But these also shared some interesting features. For example, all participants drew on their existing knowledge of what a "real" animation narrative looks and sounds like. The Disney Corporation's animated cartoons had a decisive impact on their understanding of the genre, and most wanted to mimic or play with these understandings, while acknowledging their own limited technical resources. Moreover, through this tongue-in-cheek playfulness the young participants to varying degrees demonstrated an intimate knowledge about mainstream conventions drawn from their use of music and magazines, film and television.

Finally, particularly during the storyboarding phase, in which the narrative was decided upon and visualized graphically, their joint exploration and negotiation of aesthetic rules and conventions also made them more aware that such rules and conventions existed. It is evident that in order to break rules, one has to know the rules. As Thomas, aged fifteen, said: "This was when we began to ask questions: where do we want to go with this, and what do we mean by that, is there a 'how' and a 'why'?" The participants' individual and often unacknowledged abilities were illuminated as joint resources by being shared, and the young cultural producers moved from thinking in terms of what they wanted to tell to what audiences might want to know.

The animation project, although conducted mostly during school hours, was a time out from the ordinary division of the school day; it focused on themes that were not part of the regular curriculum, it took place in a professional media setting rather than in the classroom, and it facilitated other roles and different competencies from those normally nurtured between and amongst teachers and pupils. The animation project, like other creative media processes, therefore illuminates a number of features of learning that serve to question and challenge received notions of what knowledge formation is about in formal settings of education. What is knowledge in the first place? How does learning come about? Which means of learning are feasible, and in which contexts? And what are the roles, and the relations of power, between those who are in the know and those who want to learn? In discussing possible answers to these questions, we may begin to see how young people's self-directed, digital practices can help to highlight issues which are relevant for the future direction of education.

"You see things progress": Definitions of Knowledge

Few young producers of digital culture become interested in blogging, texting, or gaming because they are fascinated by the technology itself. Most enter the universe of digital production because they want to communicate on a simultaneous and ongoing basis with others, because they want to be entertained, or because they want to find out about things. Out-of-school media practices are therefore focused on processes and problems or interests, and not so much driven by systematic studies of particular facts or general issues.

The definition of school-based knowledge is different. Although teachers may use concrete examples and cases related to children's everyday experiences, a main goal of education is to develop conceptual knowledge. History lessons should train pupils to remember dates and events as mental props, so that they will acknowledge and recognize how these facts fit into larger, more general patterns of development and change. This means that pupils are trained to think about knowledge as discrete pieces of information that can be transmitted to them from their teacher or their textbook; and also as pieces that are compartmentalized into disciplines which, over time, may produce larger patterns, or concepts, that can be connected through abstract thinking. So, by grade ten, pupils should ideally recognize that revolutions in France and the United States could have had similar causes. Such an understanding of knowledge is clearly at odds with the interest-based and curiosity-driven approach to knowledge that digital forms of communication and production facilitate.

Moreover, young people's digital practices in out-of-school contexts are not only processual and problem-based, they are also based on immediate forms of communication and interaction. For example, one of the Danish animation groups worked with a stop-motion technique where clay figures and physical settings are constructed so that the camera can take single shots when participants move the figures. When re-playing little sequences of shots, the producers saw a very concrete, visual proof of their progress. As Katja, aged twelve, noted: "When we had worked for ten minutes, we could see that we had progressed, we could watch our progress." The here-and-now, hands-on character of the work process is rarely prioritized in ordinary school settings, where the ultimate proof of knowledge is a high score in a test or at an exam, not the immediate appreciation of the learning process itself.

In addition to being problem-based and tangible as a work process, leisure-time digital practices are also often focused on personal interests and experiences. As many popular and scholarly analyses have noted, the enormous expansion of today's media landscape in many parts of the world and the increase in personalized media technologies have meant that young people in particular have a more diversified, individualized use of media, that closely reflects their own priorities. This was also evident in the animation study. Most narrative themes revolved around personal issues that are of key importance to identity formation in (pre-)adolescence such as loneliness, romance, and appearance. Working on these themes gave the participants a chance not only to express problems of personal relevance, but also to do so in a symbolic form (sound, images, text) that could be communicated to others—both during the actual work process and in the results.

So, even if each participant contributed storylines that reflected their own interests, the themes found immediate resonance (if not always acceptance) with the others. This demonstrates the more general point that when we speak about individualization, including those forms that are spurred by digital technologies, we cannot define this concept as a simple process of personal choice; rather it is a social condition that is shared by people in many parts of the world, but which everyone has to tackle. "We seek biographical solutions to systemic contradictions," as the German sociologists Ulrich Beck and Elisabeth Gernsheim-Beck have cogently noted.[2] Like David Buckingham in the introduction to this volume, the Becks stress that individualization is a particular structural challenge of constructing identity in what they call late-modern risk societies, not an option that we can judge off-hand as either good and liberating or bad and repressive.

The forms of knowledge, then, that young people use and develop through their self-organized digital practices are clearly at odds with the definitions of knowledge on which most school curricula are based: they focus on the learning process rather than the resulting knowledge; they prioritize concrete issues over abstract concepts, experiences over facts and immediacy over delayed results. Also, they are motivated more by the sharing of personal problems than by the unraveling of wider social issues.

As long as both pupils and teachers accept the divide between school-based knowledge and leisure-based knowledge, these contradictions may not mean much. But if we begin to acknowledge that digital forms of communication nurture types of knowledge that are needed in forming future competencies, then these alternative types of knowledge do challenge prevalent ideals and curricular practices. Perhaps the most immediate question we need to answer is how these more processual and personalized forms of knowledge serve to restructure dominant educational thinking about knowledge—the view of knowledge as a set of discrete entities that may be handed down through the generations; that may be quantified, tested, and ranked; and whose validity exists beyond contextual boundaries and constraints.

Some of the most interesting debates on these issues can be found in the growing body of literature on science literacy. Spurred by young people's declining interest in many Western societies in taking up a science career, educationalists and scholars advocate a restructuring of science curricula to focus more on everyday cases and on the inductive explanations that may follow from these.[3] Still, advocates of these revisions are also aware of the possible losses in terms of conceptual reasoning and hard-science priorities. These attempts demonstrate the difficulties lying ahead as we begin to rethink dominant conceptions of knowledge and develop approaches that seek to balance the specific and the general, the personal and the principled, curiosity, and craft.

"I found it so chaotic": Means of Learning

If the very concept of knowledge is challenged by digital forms of identity performance, so is the learning process itself. Recent learning theories rightly stress that we learn on an individual basis, but that the learning process needs others in order to materialize. These sociocultural contexts are in unusual flux when it comes to creative digital production—with people milling around, with seemingly endless discussions alternating with spells of concentrated silence, and with testing out narrative and technical options only to ditch them because of disagreement or contraints of time and technical competence. Karen and Julie, both aged sixteen, found the preproduction of their group's animated narrative rather frustrating:

Karen: I just couldn't see why we needed so much storyboarding and in such detail.

Julie: Yes, I found it so chaotic, too.

Karen: I had thought perhaps it would be just one piece of paper, and you would quickly scribble a few drawings and stuff on it—just so that we knew where we were. And so when they started drawing everything in detail, with text and everything, and pasting it on the wall, I just thought: let's stop it here, right.

Even if not all everyday practices of gaming, texting, and speaking on the cell phone are creative processes in quite the same extensive manner as the animation project, they still to varying degrees display some of the same features of inconclusiveness, of making things up as you go along, and of taking decisions not knowing which options are the right ones. These are radical learning processes because they challenge everyday routines and taken-for-granted assumptions. As such, they can be frustrating to the point of anxiety, and they are often carried through only because the participants' personal investment, their curiosity, and drive overrule the obvious setbacks, the quarrels, and the disappointments also encountered along the way.

What is more, these processes develop the participants' ability to collect, select, and combine a wide variety of sound, image, graphics, and textual elements. This "collage creativity" is facilitated by the large array of mediatized symbols that are readily available to many children and young people; indeed, these symbols are offered by commercial enterprises as readymade packages to, for example, bloggers who want to spice up their sites on MySpace. Children playing around with these options clearly demonstrate an often-intimate knowledge of these symbolic repertoires—for example, the young animation producers knew and could argue for the "right" types of music that go with particular genres, and bloggers are very aware of the way in which particular visual styles promote their self-presentations, as Stern's chapter in this volume demonstrates.

Young people's recombinations of image, music, and text also nurture nonlinear forms of learning, where they move between rule acquisition and rule modification, between the familiar and the foreign—gaining knowledge about particular norms of communicative etiquette in a chat room or in responding to text messages on the mobile, acquiring insight about the technical and aesthetic elements that go into creating and managing a personal home page, and then being able to refashion and operate on those elements. Such forms of learning offer the young users immediate opportunities to reflect on the choices they make. This does not mean that they sit down and deliberate about these choices: rather, they intuitively modify their practices and often share good hints on best practice with their friends.

These self-styled digital practices are rather different from the processes of learning found in most classrooms. Here, learning is at best a result of teaching where pupils know what to learn, but not always why such knowledge matters. The teacher is in charge of creating the parameters for learning and of dividing the learning process into neatly defined steps that challenge the pupils, but hopefully not so much that they lose heart or interest. This so-called scaffolding of the learning process is most easily accomplished in a school environment in which activities and their outcomes can be planned and coordinated by the teacher. By contrast, anyone who has witnessed the intense interaction that goes on at a game session or during an Internet chat session will know that scaffolding is difficult, and, when it happens, peers are in charge of the process. Learning is perhaps never a linear process, but this becomes particularly evident at such instances. Through their engagements with digital media in their leisure time, young people experience the fact that learning can be different from being taught at school. It can be driven by curiosity, which serves to overcome set-backs and frustrations; it can be a playful process of training and breaking rules and conventions; and its results can be immediately shared and appreciated by peers.

Many proponents of innovation and of the so-called knowledge society emphasize some of the same elements, noting that they are fundamental to creative processes and to life-long learning. One need not embrace all of the underlying assumptions of these arguments in order to acknowledge that dynamic, globalized societies need people who can and will modify and develop existing competencies, who may think and act "outside the box," and who can do so in practice-based environments providing immediate feedback. These competencies apply most readily to the employment profile of the well educated, but in more general terms flexibility and reflexivity are needed by most people living in dynamic late-modern societies. A concept of learning as neatly compartmentalized bits of information that can be scaffolded and taught through intense and repeated training called "education" is clearly challenged by the demands made by these societies. Naturally, this prospect does not invalidate schools, but it does change the basis on which they may define their teaching and hence the learning obtained by their students. In this process of redefinition, considering the means of learning involved in young people's digital engagements offers an obvious route to follow.

"The expression is all that matters": Modes of Literacy

Equally challenging, of course, is the debate on *what* children should learn. This is not a new question; in fact it has existed since the origin of modern, dynamic societies and the "invention" of childhood. For in dynamic societies the demands made on people's competencies change over time, and children are a particular focus of adult concern, since adults are in a position of power to shape these competencies. Two hundred years ago, public debate on education often focused upon whether or not children should learn to calculate and read—and especially whether or not they should also learn to write (since writing is much more difficult to control). In Western societies, the book was the technology of literacy, and Arabic numerals were the basis of numeracy.

Today, public debate in many societies displays similar concerns about children's future competencies—only now the debate has become even more complex, because the book is surrounded by live and still images, by sound and graphics, and by intricate, and often mediatized, mixtures of all of these. Clearly, print literacy is not an adequate term to cover all of these modes of expression, and so we see an upsurge of hyphenated forms of literacy, mostly defined in relation to particular technologies, such as media literacy, information literacy, visual literacy, teleliteracy, metamedia literacy, computer literacy, digital literacy, internet literacy, and so on.[4] Information, computer, and Internet literacy were prevalent terms through the 1990s when the personal computer and Internet communication were taken up in a big way in most Western societies. Currently, no single term seems predominant, perhaps because no single technology may be seen as the most prevalent; rather, it is the often complex constellations of old and new media, and the combinations of text and sound, live and still images that stand out as the main trend in today's media culture.

Based on this current trend, some scholars speak about multimodal literacies, others prefer multimedia literacy, while still others offer the concept of multimodal interactions.[5] Whatever the terms, this volume testifies to the fact that young people avidly engage with most or all of these new media forms, and with their recombinations—they take and send pictures with their mobiles, they produce websites and personal blogs, they use camcorders for filmmaking and go on the net for gaming, they edit music and refashion avatars downloaded from the net. All these activities implicitly require and develop new competencies or new forms of "literacy."

The "collage creativity" that I mentioned above surfaces with particular clarity when young cultural producers manipulate images, sound, and text. In the animation project, one group made an animated narrative that was clearly inspired by *Help, I'm a Fish* (2000) and *Finding Nemo* (2003). The group had intense debates about whether to rip music from existing sound tracks, to remix and edit sound bites to suit the visuals, or to create their own music. In the end, time set the limits and provoked choices. Fifteen-year-old Jonah and sixteen-year-old Adam agreed that the most interesting part of the process was using the software program Flash to make the figures come alive—in quite concrete terms, to animate them (from the Latin *animus* = soul):

Jonah: I thought the best thing was making the movements—well, the figures and all.

Adam: What I liked the best was structuring the figures, because that's what brought it all to life.

Jonah: For example, when you make a fish, you give it an expression. If you think about an ordinary fish, it has no expressions, right.

Adam: No. But [in animation] the expression is all that matters.

When the group manipulated visuals, sound, and text through software, their identity work materialized in quite concrete ways. Speaking along similar lines, the British cultural theorist Stuart Hall defines cultural identity as a form of *symbolic articulation* that operates as a bridge between inner feelings and external surroundings.[6] We have no direct access to other people's thoughts and emotions, but symbols, such as words and text, image and sound, offer a means of expressing inner states so that they may be shared by others. Hall's term "articulation" encapsulates this important duality of expression (as in an articulate person) and connection (as in an articulated lorry) that is key to the way in which symbols operate in the formation of cultural identities. In performing identity work through digital practices, young people can gain a new perspective upon ordinary media products; as one of the pupils said during the animation project: "I watch TV commercials now in terms of Flash" (the software program her group was using). At the same time, they can get a new perspective upon themselves because they enter new cultural and social terrains.

Why are these multimodal articulations of identity relevant to learning and schooling, one may well ask. One answer is because such articulations are tangible and visible, and so they may be shared, critiqued, and possibly changed through interaction with others. This was exactly what happened during the animation project, when participants' ideas and products were up for discussion, evaluation, and appreciation or dismissal: issues that mattered to them could be tackled not as personal issues, but as aesthetic and technical issues. Such an approach has obvious advantages in educating young people to whom issues of identity are pertinent, but who rarely, and for very good reasons, lay themselves open to scrutiny in the classroom. For both pupils and teachers, it is much easier to handle issues of identity as differences of opinion about color grading or sound than it is to handle them as personal problems.

Of course, it may be debated whether the often complex digital practices performed by children and young people in their leisure time involve real competencies at all. What we may say with confidence at this stage is that these practices involve the use of important cultural resources that reflect back on formal schooling and, in doing so, point to limitations in the current emphasis on print and oral literacies as primary competencies. The tangible nature of many digital practices, mixing visuals, sound, and text, offer an important means to tackle matters of cultural identity, if only because they may be stored, shared, and reflected upon. Such reflections have obvious relevance for contemporary societies whose members need to be able to handle complexities across a range of sites and settings—being able to shape and refashion an often complex constellation of aspects of identity within structural parameters that are not up to individual selection. While this situation is not new, the constitutive role now played by media in this process makes it imperative that educators and policy makers begin to reorient their educational priorities and practices toward a broader understanding of literacy.

As Buckingham notes in the introduction to this volume, such a broader understanding immediately raises key questions about the aims of literacy. Should young people simply learn how to use media technologies, or do they also need to know about the social, cultural, and historical dimensions of those technologies? Do we define media as tools of information processing, which users need to apply effectively, or do we define media as social forms of communication, which users need to appropriate critically? So far, most educational debate and reform has focused upon introducing computers as information-processing tools, a focus that may be due to the novelty and the rapid, if uneven, take-up of the technology. Whatever the reasons, this functional focus fits more easily with the forms and organization of learning on which most schools are based than does a critical focus on media that emphasizes shifting contexts of use and evaluation of the social function of media. As the animation project and many similar studies demonstrate, young people harbor more diverse and advanced resources concerning the media than the merely functional approach suggests, and, importantly, these resources are key to their chances of developing relevant competencies for the future. But as is also evident from the examples given in this chapter, there are clear limits to the young cultural producers' ability to develop their skills of evaluation and reflection on their own. They were not helped in this by the professional animators, who explicitly prioritized training in production skills, and the insights gained from the project were not developed further by their regular teachers or integrated into the school curriculum. To do so would require a redefinition of literacy that Denmark and most other countries have not yet prioritized. It would also require a redefinition of what counts as legitimate learning resources.

Today, textbooks combined with oral presentations are still the main teaching materials in most schools in Western societies, while in other parts of the world even textbooks are sought-after commodities. Children who grow up with a plethora of multimedia forms, and who in many cases create their own digital productions and interactions, are developing aesthetic sensibilities and insights that few ordinary schoolbooks can match. If it is true that one of the main challenges facing traditional schooling is to retain and develop children's curiosity and craving to learn, then this challenge is certainly even more pronounced when children encounter teaching materials in schools that rarely meet their expectations in terms of multimodal presentation, selection, and interaction. The current mismatch between teaching materials found at school and the often highly sophisticated digital expressions found at home makes it very difficult for teachers to systematically develop the cultural resources that children bring from their out-of-school contexts. A key challenge in developing multimodal literacies at school is therefore to create and use multimodal teaching materials to underpin those learning processes.

"Like a roller coaster": Learning as a Social Practice

Identity performances are clearly involved in most of the leisure-time engagements that children and young people have with digital media. To the uninformed adult eye, teenagers blogging in their bedrooms or playing online games may, indeed, appear engaged, but these also seem to be individual, even lonely, activities. However, as this volume has amply demonstrated, these engagements are fundamentally social in nature. Since many of the recent media technologies afford and demand interaction and dialogue, young users are collaboratively developing their abilities in personal expression and dialogue, in handling disagreement and questioning decisions. They get used to operating in relation to teams and through open-ended processes of negotiation.

Such processes are not always easy to sustain, let alone to master. Anne, aged twelve, described her participation in one of the Danish animation groups as a painstaking process, where she moved between elation and exhaustion: "I felt like a roller coaster, going up and down." Anne was often unsure about what would happen next, and how she could position herself within the shifting working relationships. Even for participants who clearly thrived on being "let loose" to engage in ad hoc networking, the continuous dialogues and negotiations demanded extra efforts, which were accepted if not always liked. In one group, for example, the young producers agreed that each of them should have one theme or idea included in their joint narrative. Following well-known gender preferences, girls tended to argue in favor of girl-meets-boy ideas, while boys preferred more action-based elements. The result was a mainly romantic plot into which a red "joy car" (a car used in funfairs and tivolis) raced into the final scene—the boys' humorous send-up of a happy ending.

Digital practices offer children and young people experiences of learning that are malleable and collaborative, and where nearly everything can be questioned and debated. Through these processes, the young participants learn how to tackle rather complex issues and to find workable, if not perfect, solutions. Most participants take responsibility for their actions and they invest all, or at least most, of themselves. This inclusiveness is part of the thrill but also a potential pitfall, because critique may be taken to reveal personal flaws. This duality is evident when Anne speaks about herself as being on an emotional roller coaster, but it is also seen when young people go online with their own homepages or blogs; as Stern's chapter indicates, they perform various forms of self-presentation, but they also lay themselves open to comments from unknown audiences. In a similar vein, boyd in this volume notes how teenagers use their social networking sites to develop an outsider's view of themselves while at the same time seeking acceptance within the group.

Prevalent notions of learning in schools are clearly challenged by digital forms of learning—they are joint sites of action which train participants in handling complexity, and whose success depends upon the young users investing most of themselves and being validated accordingly. By contrast, in many societies, educational policy favors individual training for explicit ends, which are often particular tests or exams. Here, learning is less open-ended, less dialogic and team-based, and, in the short term, less risky for pupils' self-perceptions, because their learning processes seem to have few implications for their everyday lives and personal priorities.

Recent educational theories have begun to question these prevalent policies. For example, Jean Lave and Etienne Wenger speak about learning as a process that is situated within "communities of practice."[7] Their account draws on the learning processes found in traditions of apprenticeship, where the gradual acquisition of skills learned by emulating the masters was the entry point to social acceptance at the center of the professional group. Scholars have seen parallels to these learning routes in current game communities, and, indeed, computer games have been offered as one of the main alternatives to standard forms of learning, precisely because gaming is perceived to be in tune with future demands of collaboration, strategic thinking, and hit-and-run decision making.[8]

While this promotion is understandable in terms of the tremendous impact of the games industry on contemporary media output, much less is made of the fact that gaming remains the most gendered media practice amongst young people.[9] Some researchers have claimed that girls' relative lack of interest in gaming can be overcome by designing different types of games that fit girls' genre preferences for relationships over action and construction over combat.[10] However, this claim contradicts contextualized studies of media uses which demonstrate that girls often prioritize being with friends rather than doing things with friends (like gaming) and hence play computer games more on an individual basis as diversion and less as a collective pursuit. As Karen Vered states: "Contrary to dominant research trends which emphasize the narrative analysis of computer games, I suggest that girls and boys approach computer play differently, irrespective of the software content, including genre and specific elements of narrative such as character and setting."[11] Given the complexity of contemporary media culture and the potential diversities of youthful uses, we should be careful not to single out specific genres or media as particularly relevant for innovative learning. Rather, the important challenge seems to be to develop inclusive contexts of learning at school, contexts that balance dialogue and monologue, security and risk, communal and individual aspects of learning.

Children's digital engagements outside school not only nurture other learning processes and learning contexts; they also help develop different notions of *time* involved in such processes. Much popular and academic literature has focused on the so-called heavy users of digital media. Gamers in particular have been subject to critical scrutiny on the grounds of their "excessive" time-use, in a manner that mirrors earlier concerns over magazine-reading, film-going, and TV-viewing.[12] Less has been made of the ways in which many digital practices engage their young users so intensively that they refashion their usual sense of time. In fact, this refashioning resembles what is known from more professional working practices in areas such as art and science—only here the sheer abandonment and self-absorption is seen as a sure sign that something original is brewing. Whatever the verdict, it seems as if intensive creative engagements go together with at least a certain reorganization of one's sense of time. So, in the Danish animation project, teachers had to urge the young participants to leave the premises at particularly intensive work periods, while the participants would fill up slacker work spells with texting or gaming on their mobiles and had little incentive to stay around after school hours.

What we see in many Western societies today is a generation of children whose digital leisure activities entail learning through negotiations in online and offline networks; who expect to be heard and to listen with respect to other views; and who often have extensive experiences with restructuring time according to their personal investments in particular projects or issues. If schools want to elaborate on and develop those resources, they need to create new contexts of learning that facilitate both spatial and temporal flexibilities, for example by extending sites of learning to include virtual spaces and the local community and by modifying existing time slots called lessons. But in doing so they also need to heed other lessons learned from studies of digital practices. Some children, such as Anne in the Danish animation group, find the open-ended character of learning and its personal investments very provoking or too scary, and so they opt out or disengage themselves from the ongoing activities. These children need added, professional scaffolding in order to develop a sense of security about the process and trust in the other participants. Among other things, this means scrutinizing the position of teachers in relation to pupils.

"We all made decisions": Social Roles and Rules of Power

As we noted earlier, mobile texting, online gaming, and blogging as well as digital editing of visuals and sound are all embedded within youthful communities of practice. Even when these practices seem to be individual affairs, they are surrounded by social envelopes of peer learning—which may include the sharing of basic "know how," such as tips on how to get cheap ring tones, tricks on little-known links, and warnings about useless, or risky, characters online. Both online and offline networks operate through intricate processes of social inclusion and exclusion, but the hierarchies spurred by digital practices are often different from the ones found at school since they adopt different markers of success. An experienced gamer may not score very highly in the hierarchy of schooling, just as successful pupils can be ranked very near the bottom in their digital networks.

In the animation project, most of these reorganizations of roles and status were conducted by the young participants themselves as part of their work process. Conflicts were managed through discussions that often seemed endless from an adult perspective, but whose merit according to some participants was that "instead of one person making the decisions, we all did," as thirteen-year-old Chris put it. In some cases, new alliances were formed. For example, a girl and a boy who constantly disagreed during lessons found themselves working together in the editing phase of the animation project, not because they agreed to do so, but because their competencies turned out to be complementary—the boy was an expert on rap music, which was to be used in the narrative, while the girl had experience with graphic design.

Likewise, the young participants in the animation project mainly turned to one another for help during the production process—a clear sign that they defined their work in relation to out-of-school contexts rather than school contexts. Only on a few occasions did they approach their teachers, and then it was mainly to get help to solve a conflict or for practical questions which they assumed the teachers could answer. The teachers, on their side, fit the part in that they rarely intervened in the creative process—this was left to the professional animators. They became facilitators of the pupils' work, a role that they mostly limited to resolving technical and narrative issues. Several of the young participants were very clear about what they considered to be appropriate limits of facilitation. Jonah and Adam, who were part of the group focusing upon a humorous plot about a fish, described the different approaches of the professional animators in this way:

Jonah: Well, Michael he wanted to change everything.

Adam: Yeah, adding spots to our fish and what not.

Jonah: Yeah, spots all of a sudden.

Adam: And so he changed our fish from a funny fish into a plaice [laughs].

Jonah: But with Jim it was different. One of the things I noticed was that, even if many wanted him to come, he finished what he was doing first. He did not disappear in the middle of everything, and I liked that.

The animation project offers just one example of the numerous ways in which children's digital practices challenge received roles in education. In most classrooms, both pupils and teachers know and perform their respective roles, and these are distributed along well-established hierarchies, with the teacher at the pinnacle. Even if pupils challenge these hierarchies, and this is an integral part of schooling, this is done from a knowledge of their existence. The forms of communication that the teacher instigates are mainly monologues, with the teacher in charge of distributing the right to ask and answer questions. Teaching is based on focusing upon one issue at a time, and this is a main reason why teachers find pupils' unwarranted interactions so disturbing. The teacher authorizes and monitors which media and materials should be used for learning, and in doing so certain types of information are also selected and deemed relevant before they are used for teaching.

If we compare these forms of classroom interaction with what goes on when young people engage with digital media, the differences stand out. Users will often perform several tasks at a time, they do not focus on one particular issue, and they mix media and modes of expression. These modes are shaped, selected, and assembled while they are being used. What is more, the social relations involved in these activities are often as important, or more important, than the tasks or technologies at hand. For example, boys will spend a long time debating the "proper" rules of conduct before playing a computer game, or they will interrupt the game in order to discuss different interpretations of such rules.

If schools begin to build on and integrate some of these unacknowledged learning processes, will that make teachers superfluous? Quite the opposite, I would say. Teachers will be as necessary for learning as ever, but their roles will have to be modified from information authorities into knowledge facilitators. Moreover, their roles of authority will become more complex. Insights based on textbook sources may be challenged by pupils gathering the latest information on gene modification or cultural conflicts from wikis or net portals, and so teachers will have to constantly prove their authority in concrete action, rather than assuming a given status. Even so, teachers will also need to act as gatekeepers of information, for example in teaching which sources and content to trust on the Internet. In performing these roles, teachers will not only be facilitators of social networks, but, just as importantly, they will be facilitators of knowledge validation and acceptance. Just as we saw how digital production processes afford and demand a constant movement between expression and reflection, so teachers will have to master such dynamic movements if digital media are to be incorporated more extensively into existing frameworks of education.

From Resources to Competencies

It may well be argued that identity work and media have always gone together. Indeed, since the advent of mass literacy, children and young people have been some of the first to take up and explore new media, and through much of the previous century youth cultures in Western societies have centrally been articulated in relation to music, film, and television—being a Clara Bow fan, an Elvis enthusiast, a Trekkie. What is new are the implications following from those processes in terms of learning and the formation of competencies.

As I have argued in this chapter, one of the key global challenges of the twenty-first century is to develop the human capacities that are needed to deal with increasing complexities of an economic, political, and cultural nature. And, as we have seen, children's self-styled digital practices can particularly promote their handling of complexity. The often intricate interlacings of mass-mediated and interpersonal forms of communication, of reception and production, global and local interactions, operate as symbolic and social meeting grounds between the familiar and the foreign, inviting and demanding young people to position themselves in relation to new experiences and expressions. Children and young people have different resources for tackling such complexities, and they react in different ways—avoidance, negation, inclusion, and reflection are some of the reactions that we found in our animation study. Irrespective of their reactions, young people's digital practices are now one of the key areas of identity performance and creative learning. However, they are primarily exercised in out-of-school contexts and hence left open to individual differences of development rather than necessarily being characterized by equality of opportunities.

Viewed from this perspective, the dispersion of relevant learning sites and resources represents a key challenge for education. I have proposed that schools need to take on board in more systematic ways the insights gained from such out-of-school practices because they are vital to future competence formation. This does not mean that schools should abandon their existing strengths and forms of operation; indeed, any such proposal would be rather naive, given the fundamental role still played by education as a means of social selection and a definer of what is deemed proper knowledge. Nor do my suggestions imply that we embrace all digital practices performed by the young; indeed, I think we need to avoid easy oppositions between what is sometimes termed "informal" and "formal" learning. This is because such oppositions often operate on dichotomies that tend to obscure the complexities involved in school reform: school/leisure, hierarchical/democratic, teacher-centered/child-centered, monologue/dialogue, analysis/expression, serious/playful, emulative/innovative, dated/novel, and so on. Within this binary logic there is an imperceptible sliding toward a normative conclusion that schooling is bad because it is strictly based on rationalist forms of analytical inculcation as opposed to child-centered, autonomous, and playful leisure activities, which are good because they gear young people to the right future.

In addressing the implications of children's digital media practices for learning, concerted efforts should be made to heed results offered in the present volume as well as in empirical studies from school settings, all of which provide a depth of evidence about the complexities involved in working with digital media.[13] As we have seen, these results demonstrate how young media producers draw on existing genre conventions and stylistic repertoires culled from their experiences as media audiences, how analysis and expressiveness go together in production processes, and how self-propelled collaboration coexists with professional coaching. Rather than defining identity work per se as oppositional, and set informal leisure practices against mundane school routines, questions need to be asked about which forms generated by those engagements are relevant for education and may be developed into the kinds of competencies children will need as they grow up in more dispersed learning environments and more complex societies.

For it is evident that the digital practices carried out in out-of-school contexts do not automatically develop into competencies in and of themselves. To do so, young people need systematic training and development, so that insights gained from one particular experience or problem may be transferred and applied to other issues and situations. These forms of joint training can only be performed through formal education. This is because school is the central social institution in which individuals come together with the specific purpose and possibility of pursuing sustained, joint learning processes. Also, schooling affords and demands learning processes that develop concrete forms of knowledge into more conceptual forms of knowledge. These forms of knowledge are needed in order to make abstractions—a key competence that is required to handle complexities and that is therefore in great demand in late-modern societies. Abstractions are also at the core of critique, which is to do with making connections between different problems and with drawing conclusions across seemingly different discourses and practices. Finally, competencies ultimately need to be subject to some form of institutional selection, evaluation, and approval. We need to map more systematically the scale and scope of children's self-defined media practices, and we need to determine which of these practices are relevant resources for their future and thus merit educational attention.

In doing so, there are some key oppositions that we need to acknowledge and tackle. As I have mentioned, the education system in all known societies operates as one of the main mechanisms of social selection. How can this function be balanced against the obvious resources for democratic participation and involvement that today's generation of children develop through their digital engagements? Schools traditionally privilege abstract and discrete forms of knowledge. How can these forms be mixed with the more problem- and context-based skills that young people develop through their out-of-school digital practices? Moreover, schools are social institutions that serve to select and organize disparate bits of information into coherent bodies of approved knowledge. How can this function be combined with the dynamic changes in knowledge formation that are brought about by Internet and mobile communication, and which are appropriated by many youngsters as second nature? How can schools in the future train pupils in trusting some forms of knowledge over others and in acknowledging the validity of knowledge whose usefulness cannot be determined on the spot? Similarly, schools are hierarchical organizations operating on continuity rather than change. How can schools build on these continuities to scaffold pupils' learning processes without forfeiting their opportunities to think and work "outside the box"?

Last, but not least, we need to discuss our definition of schooling in view of the digitization of learning. For example, in 1999 poor children in one of New Delhi's slum areas with little or no access to formal education were provided with computers in public spaces to be used with minimal adult intervention, as part of the so-called hole in the wall project. According to the project director, Sugata Mitra, the results demonstrated that users intuitively developed computer skills.[14] Such experiments invite debate about whether educational interventions are needed in order to develop literacies at all—and if so, of what kind. In Western societies, discussions of literacy and competence formation focus on equity of access and use in formalized educational settings, which are set against individualized, domestic uses that tend to reinforce existing differences across boundaries of age, gender, and ethnicity. How do these notions play out under widely different circumstances? Is it possible to conceive of other ways of gaining systematic training and other forms of validation of the outcomes?

Different societies offer different answers to these questions, which are partly dependent upon their educational traditions. For example, Singapore is currently reforming its school system to allow for more differentiated and creative work processes, while in Northern Europe and the United States, the pendulum is swinging in the opposite direction: here policy makers put increasing emphasis on national tests and on evidence-based learning along well-defined lines, in order to counter what are perceived as the unduly permissive tendencies of the past.

Whatever the educational policies favored, it seems clear that in their leisure time many children and young people are already busily rehearsing for a future in which the handling of mediatized complexities is key. Such processes involve identity performances that are more diverse and wide ranging than the specific training in technological skills that is emphasized within most schools in Western societies. If these educational priorities remain unchanged, the obvious result will be a widening not only of social, ethnic and gender divides within particular societies, but also a widening of divides between societies. This process is typically referred to as a matter of "digital divides," which reflects the fact that media in general, and digital technologies in particular, are constitutive elements of contemporary societies, of social positionings, political power, and cultural practices. However, as the Spanish sociologist Manuel Castells emphasizes, digital divides are basically *social* divides, and education plays a key role both in the formation and in the potential dissolution of these divides.[15] For it is through education that some learn to handle mediatized symbols in both work and leisure, and others do not. In debating and attempting to tackle the challenges to education posed by digital practices, it is vital that we keep these wider perspectives in mind.

Conclusion: Unity in Diversity?

Several conclusions may be drawn from the present chapter, in terms of both future policy and research. Most importantly for educational policy, our results and discussions demonstrate that formalized schooling is vital for the formation of digital competencies. This is because in school, pupils' individual resources are harnessed for joint processes of learning that push the boundaries of these resources in ways that leisure-time and ad hoc communities of practice cannot do, at least without similar levels of societal legitimation. And while education involves, and will continue to involve, organized selection through evaluation, it is equally one of the few social institutions in which both learners and teachers can and must interact beyond themselves and their own choices: it is a joint meeting ground for encounters with others—with what seems strange, difficult to comprehend, and accept. Hence, education is also the place in which very real divisions of access to and use of digital resources may be minimized.

In training pupils to handle the complexities of a heavily mediatized world, and the forms of identity work that it entails, educators will need to draw on children's out-of-school experiences, which increasingly involve complex negotiations between self and others. They will also inevitably be doing so within school settings that are still characterized by diversity and divergence. There are important questions here about how educational policy makers and practitioners will define and handle such encounters with "otherness." One way forward is to follow a route of cosmopolitanism, where mutual tolerance and dialogue are seen as leading to consensus and where such processes are perceived as individual choices that can be followed at will.[16] Another option is to follow a route of critique, in which mutual respect and dialogue are defined as joint conditions of living together in one world, including with people whose outlook on life may not be shared, but without whom no life is feasible.

We may also ask questions about the organization of various educational institutions. The dispersal of learning sites and the key importance of young people's digital practices potentially reframe the relations between statutory and voluntary sectors in advancing digital learning. Here, the chapter has pointed to prevalent oppositions between formal and informal learning that seem to constrain cooperation—an issue which needs to be more directly addressed in future policy developments. Such issues of organization are also related to issues of substance—should digital media practices be for all or should they be relegated to specific "creative" sectors, subjects, or individuals? Should digital, or multimodal, literacy be defined as a functional tool or as a critical resource?

In terms of research, this chapter raises core issues about the future organization of media studies relating to children and young people. As we have seen, young people live in an increasingly complex media culture, and one of the key challenges for scholars is to match this empirical complexity with the requisite theoretical and methodological complexity. One of the best ways forward is to develop comparative studies, across several dimensions. First, it is obvious that to analyze and understand an interlaced media culture, researchers need to address not single media, but entire media ensembles. Second, these media are embedded in a range of settings, and so studies need to cross boundaries, for example, of home and school, or online and offline practices. Third, young people in many parts of the world interlace processes of production and reception in unprecedented ways, and these interlacings may be investigated in their own right as means of handling complexity. Finally, the crossing of boundaries in terms of media, genres, settings, and appropriations takes place not in one, but multiple, locations around the world. The increasingly global reach of contemporary media technologies makes it imperative to conduct multidisciplinary, cross-national studies in order to address the selective take-up, the divergent uses, and the resulting divides that are bound to set the conditions for future learning and literacy.

Notes

1. The study formed part of a larger project carried out in 2005–2006, which also involved storytelling, drama, and digital museum productions in addition to the animation workshop described in this chapter. The project was funded by the Danish Ministry of Culture and the animation project was studied by a research team from the University of Southern Denmark. The research team undertook observation of the production process, individual, and focus-group interviews with pupils, teachers, and animators,

and analyses of the final products. Thanks are due to my coresearchers, assistant professor Lotte Nyboe, and research assistant Heidi Jørgensen.

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10. See e.g., Kaveri Subrahmanyam and Patricia Marks Greenfield, Computer Games for Girls: What Makes Them Play? in *From Barbie to Mortal Combat: Gender and Computer Games,* eds. Justine Cassell and Henry Jenkins (Cambridge, MA: MIT Press, 1998); and discussion in Jo Bryce and Jason Rutter, Digital Games and Gender, in Jason Rutter and Jo Bryce, *Understanding Digital Games* (London: Sage, 2006), 186–204.

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12. Kirsten Drotner, Dangerous Media? Panic Discourses and Dilemmas of Modernity, *Paedagogica Historica*, 35, no. 3 (1999): 593–619.

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