# Exhibiting, Disseminating, Teaching: Digital Literature in Danish Public Libraries

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## Introduction

Since 2010, a handful of Danish public libraries have been exhibiting, disseminating, and teaching digital literature [1]. In the course of six projects, which will be introduced below, these libraries have developed a significant body of practice-based knowledge and positioned the public libraries as the most experienced actors when it comes to exhibiting digital literature in Denmark. The projects represent a generative and longitudinal collaboration between practitioners and scholars; at Aarhus University, academic staff as well as the CAVI lab (Halskov) have continually participated in the projects, just as most of the projects have included participation in ELO conferences. The projects are furthermore impressive on an international scale, with multiple ambitious exhibitions, three best-practice booklets, two international prizes, one teaching platform, and not least the continued development of *The Poetry Machine*. These projects, which have involved a shifting collection of libraries, have hitherto not been presented collectively, and the wide range of knowledge has been scattered and mostly available in Danish. Accordingly, insight into these projects, their connectedness and accompanying practice-based knowledge has been largely unavailable to an international audience.

The point of this paper is threefold. Firstly, I present the six projects in question, thus communicating them to an international academic audience. Secondly, I show how, in the course of a decade, focus has gradually shifted from exhibiting digital literature *per se* to also including (informal) dissemination and (formal) teaching aimed at K-12 education. Thirdly, I discuss the importance of teaching digital literature in relation to the current focus on computational thinking in (Danish) K-12.

In viewing the six projects collectively, an astute continuity emerges. Indeed, the distributed efforts made across the projects are both ambitious and longitudinal in scope. The choice to view the six projects as a single case does of course limit the possibilities of in-depth inquiry into either one, and foregoes project-specific contexts, interesting dilemmas, and unique characteristics. However, my approach assembles a multitude of distributed perspectives to reflect on the last decade's worth of work and to suggest future trajectories. With this approach, I argue that public libraries can and should continue taking on a central role in educating children and youths about the cultural consequences of mass digitization – through digital literature.

# A Decade of Digital Literature

This paper will cover the following projects: *Open Work*, 2010 (Danish: 'Åbent Værk'); *Literature Takes Place*, 2011-2013 (Danish: 'Litteraturen finder sted'); *DigiSpace*, 2015-2016 (Danish: 'DigiRum'); *Turn on Literature*, 2016-2018 (Danish: 'Tænd litteraturen'); *Advisory Board for Digital Literature*, 2016-2018 (Danish: 'Advisory board for digital litteratur'); and *Literature in Digital Transformation*, 2019-2020 (Danish: 'Litteratur i digital transformation') [2]. The point here is not to give an exhaustive account of each project, but to provide an overview and show the general shift from only exhibiting to also disseminating and teaching. The latest project, Literature in Digital Transformation, included the development of a teaching platform for digital literature, which will be presented in some detail.

**Open Work** (2010) ("Netlitteratur") was a ripening project at Roskilde Libraries intended to seek out and establish a framework for incorporating digital literature in Danish public libraries. The term, *digital literature*, as it is used in the projects here explored, was defined as part of Open Work as: works that (a) are born digital (cf. Hayles); (b) consciously use a digital medium; (c) can change; (d) require reader interaction; and (e) possess literary quality (Campostrini). The definition is largely in line with the academic field (Hayles; Rettberg). Noticeably, aspects (b) through (d) are arguably already implied in aspect (a). The definition has been used flexibly in the projects (especially regarding the requirement for interaction), which does imply that having a fixed definition has not been instrumental to the exhibition-specific curatorial work. Still, having a stable, and somewhat elaborate, definition throughout all the projects has helped articulating the existence and general characteristics of digital literature to both librarians and the general public in Denmark.

Instead of focusing on web-based services, Open Work took to investigating how to exhibit digital literature in the *physical space* of libraries. The project evaluation highlights the (at the time theoretical) potential for public libraries to serve as spaces for creative exploration and reflection – through digital literature – on the cultural consequences of mass digitization (Pold, "Digital litteratur og bibliotekernes nye roller"). As the project's aim was to ripen a potential for further work, it stayed within the domain of concept development.

Literature Takes Place (2011-2013)("Litteraturen finder sted"; "Netlitteratur") was a collaboration between Roskilde Libraries, Aarhus Libraries, and Litteratursiden.dk [3]. The project included two appearances at a Poetry Hall at Roskilde Festival, in 2011 and 2012, as well as participation in the 2013 and 2014 ELO conferences, and situated the first major exhibitions of digital literature in a physical space in Denmark. Furthermore, the project group developed and produced *The Poetry* 



The **Poetry Wall**, in the Poetry Hall, at Roskilde Festival. Photo credit: Literature Takes Place.

*Machine* (a.k.a. *Accidentally, the Screen Turns to Ink*) and *Poetry Wall*, both in close collaboration with CAVI at Aarhus University. *Poetry Wall* was an event-specific interactive and combinatory installation, where passers-by collectively created sentences — or poetry — on a wall. *The Poetry Machine* is an interactive literary installation that produces combinatory poems in a collaboration between user/reader, a published author, and the machine's agency — it is well documented elsewhere ("About The Poetry Machine").

The exhibition consisted mostly of works in Danish, including *The Poetry Machine*, *Poetry Wall*, an exhibit by artist Thomas Seest, and a set of reading/listening stations for multi-modal literature. The project published a best-practice booklet – or 'idea catalog' – in Danish (Pedersen & Juel).

In almost direct continuation of Literature Takes Place, *The Poetry Machine* was re-designed into five (identical) transportable exhibitions of digital literature, finished in 2016. Each transportable exhibition could be booked by any Danish public library and included in them four works of digital literature (one being *The Poetry Machine* itself). The transportable *Poetry Machines* made exhibitions of digital literature feasible to a wider network of Danish public libraries which would otherwise be *de facto* unable to curate and maintain such an exhibition. They have been, and still are, in more or less constant circulation among Danish libraries.

**DigiSpace** (2015-2016)("DIGIRUM") was a collaboration between Aarhus Libraries, Herning Libraries, and Silkeborg Libraries, and included participation in the 2015 ELO conference. The project curated two exhibitions of digital literature, each of which was exhibited in two of the participating libraries, and published a best-practice booklet - or 'toolbox' - in Danish (Andersen et al.). The project was the first to present thematically curated exhibitions of digital literature in Denmark – i.e. not simply themed as being



David 'Jahve' Johnston's **Reboot The Universe Now** at the Climate Fiction exhibition at Åby Library (part of Aarhus Libraries). Photo credit: DigiSpace.

'digital', but also thematically related to a broader reality. The project partnered with two art museums, HEART in Herning and Aros in Aarhus, and found some inspiration in museum-esque curation, while also stressing that libraries are not, and should not be, art museums. The themes of the exhibitions are reflected in their names; 'Digital Literature: Climate Fiction' and 'Literature without Cover: Sms-stories, Twitterature, App-literature' (my translations from Danish).

DigiSpace enacted the first major shift towards disseminating digital literature, as the project had an accompanying focus on (informal) dissemination in relation to the exhibitions – and furthermore fostered continuing experimentation with formally teaching digital literature at the partner libraries – though the dissemination focused more on either digital literature *per se* or the themes *per se* than on the connection between the themes, the works exhibited, and the context of mass digitization (Pold, "Digital literatur som digital dannelse"). The exhibitions featured works by Roderick Coover & Scott Rettberg, David 'Jhave' Johnston, Shelley Jackson, Samantha Gorman & Danny Cannizzaro, Sissel-Jo Gazan, and Jennifer Egan.

**Turn on Literature** (2016-2018) ("Turn on Literature") was co-funded by EU's *Creative Europe Programme* and was a collaboration between three European libraries: Roskilde Libraries, Denmark; Bergen Library, Norway; and Râmnicu Vâlcea Library, Romania. The project included participation in the 2017 ELO conference. The project curated three digital literature exhibitions across three countries with three different languages, and published a best-practice booklet in English (Marinoiu et al.). Furthermore, the project included three graphic and textual re-designs of *The Poetry Machine* – one for

each partner library. In each partner library, the corresponding new version of *The Poetry Machine* was centerpiece for an exhibition of digital literature. Furthermore, the project awarded the Turn on Literature Prize to *ABRA* by Amaranth Borsuk, Kate Durbin, and Ian Hatcher.

Though DigiSpace more explicitly focused on disseminating digital literature, Turn on Literature also enacted the shift from exhibiting to disseminating digital literature, mainly as guided tours of the exhibitions which were eagerly attended by higher levels of K-12 education. The Danish exhibition alone featured twenty Danish and international works; an overview is available in English on the project website ("Turn on Literature").



The opening of the Danish exhibition 'Litteratur i vilde former: fra a til 3D.' Still from video (Roskilde Bibliotekerne).

Advisory Board for Digital Literature (2016-2018) ("Advisory board for digital litteratur") was a collaboration between Helsingør Libraries, Albertslund Libraries, Roskilde Libraries, Herning Libraries, Aarhus Libraries, and Litteratursiden.dk. The project developed five concrete recommendations for the future sustainability of digital literature in Danish public libraries, in part based on participation in the 2017 ELO conference. The project did not exhibit digital literature in practice, but was an important factor in the continuing focus on digital literature in Danish public libraries.

The advisory board's recommendations were to: (1) increase the focus on digital literature in the online platform Litteratursiden.dk; (2) categorize and recommend digital literature through established library frameworks; (3) establish a yearly prize for digital literature; (4) develop a teaching platform for digital literature; and (5) continue the education of librarians in digital literature. Of particular interest is recommendation (4) which solidified in the latest project, introduced below.

**Literature in Digital Transformation** (2019-2020) ("Litteratur i digital transformation") was a collaboration between Roskilde Libraries, Aarhus Libraries, Helsingør Libraries, Herning Libraries, and Litteratursiden.dk. The project curated a new exhibition of digital literature, this time as an extension of the transportable *Poetry Machines*, expanding the transportable exhibitions to feature ten works of digital literature, either exhibited as interactive installation, on tablets, or as QR codes to be experienced on

visitors' own devices. The project awarded the first yearly Public Library Prize for Digital Literature – established as recommended by the Advisory Board for Digital Literature – to Amira Hanafi's *A Dictionary of the Revolution*.

The new version of the transportable **Poetry Machines**, still available to any Danish public library, is now also accompanied by a teaching platform, developed as part of the project, which can be offered to K-12 institutions by the local libraries. While this partly implies a drift from a general (public) audience to a specific (K-12) audience, the exhibition is still situated in the open library space, and is curated to be just as approachable to the general public as earlier exhibitions. The teaching platform, which is introduced below, engages directly with current guidelines for Danish K-12, in which multi-modal texts are required as content for K-12 teaching and examination, e.g. in the subject



The latest version of the transportable **Poetry Machines**, featuring the Literature in Digital Transformation exhibition.

Photo credit: Halsnæs Bibliotekerne.

Danish (Undervisningsministeriet, "Vejledning til..."; Undervisningsministeriet, "Dansk A...").

The exhibition features ten works by Amira Hanafi, Janson Nelson, Winnie Soon, Will Luers, Alan Bigelow, Simon Theis Hansen, Mez Breeze, Serge Bouchardon & Vincent Volckaert, Andreas Refsgaard, and Thomas Seest (in collaboration with Peter Højrup, Christina Hagen, Per Aage Brandt, & Kasper Hesselbjerg).

The teaching platform focuses on two (variable) works from the transportable exhibition. At the beginning of a session (of ninety minutes), the librarian gives a short introduction to the topic of digital literature, including a definition (cf. above) and a short introduction to the two works on which the specific session focuses. From here, the students engage directly with the two works, over the course of four semi-short group exercises (circa fifteen minutes per exercise). At the end of the session, the librarian facilitates a plenary discussion.

The teaching platform is intended to facilitate curious engagement with two works of digital literature, and includes reading, (co-)production/re-mix, and reflection. The (co-)production and re-mix is not just intended to make the teaching platform fun and engaging, but importantly reflects the highly experimental status of digital literature. In other words, the teaching platform views (co-)production and re-mix as *part of* reading digital literature – or at least as integral to the culture surrounding it (cf. Rettberg 46-48). The reflection-oriented exercises are more traditional, focusing on student dialogue, and encourage the students to reflect on the role and importance of the digital computer to the work at hand, hinting at four central theoretical concepts which are also provided in the teaching platform and introduced below.

The teaching platform provides four central concepts; *interactivity*, *modes of expression* (i.e. multi-modality), *literary quality*, and *technical quality*. With these concepts, the topic of digital literature is opened up to the students as they get a set of fairly theoretical concepts that can be applied in a variety of ways to the works at hand, staging a framework in which digital literature can be unpacked and analyzed while maintaining the possibility of substantial differences across the works in both form and content – and equally substantial differences in terms of readers and readings.

The teaching platform, with its focus on two different works of digital literature, an experimental style of reading, and the incorporation of four central concepts, is a fairly comprehensive introduction to digital literature. The platform is not intended to give the students in-depth understanding of all these aspects, but serves as an introduction to the topic, for teachers and students alike. After the visit to the library, teachers can find inspiration online for further work with digital literature in-class, as well as a selection of works to include in teaching and/or the examination.

The evaluations of the teaching platform show that the involved librarians, teachers, and students almost unanimously welcome the idea of a teaching platform for digital literature, as they feel unable to approach the field independently. One teacher noted that the requirement for including multi-modal texts in K-12 is as of now (in Denmark) mostly fulfilled using graphic novels and/or film — but that these genres miss the interactive aspect offered by digital literature. Furthermore, one might add, neither graphic novels nor film would inform as strong a creative and critical understanding of digitization as digital literature arguably can — this will be developed further in the following section. There were also

points for further development in the evaluations, mostly relating to the technical stability of the works included as well as problems with cross-platform compatibility. Moreover, when we presented the platform at the 2019 yearly national convention of high school Danish teachers, it was made clear that (especially high school) teachers desired more specific guidelines and inspirations for how to include digital literature in teaching and examination beyond the visit to the library included in the teaching platform. Taking these points into consideration moving forward, we also take this as an expression of interest and a recognition of the importance of teaching digital literature in K-12.

With their expertise in terms of exhibiting, disseminating and teaching digital literature, the public libraries have established themselves as the most experienced and competent actors to develop and maintain such a teaching platform in Denmark. Though not (yet) part of the national curriculum, this first iteration of a widely available teaching platform represents a major step in the direction of formally teaching digital literature in Danish K-12, a trajectory which is set to continue, with new iterations of the teaching platform – and more teaching platforms altogether – under way.

## What do we Teach when we Teach Digital Literature?

In my account of digital literature in Danish public libraries, I have not sought completeness or exhaustion, but focused on the aspects of the projects relating to exhibition, dissemination, and/or teaching. In doing so, I have shown a general shift in focus from being only concerned with the possibility and practice of exhibiting (Open Work & Literature Takes Place) to being increasingly focused on informal dissemination (DigiSpace & Turn on Literature) and formal teaching (Advisory Board for Digital Literature & Literature in Digital Transformation). While the early project Literature Takes Place did indeed facilitate visitor reflection, partly prompted by the curatorial framing, the practice of dissemination (in addition to the framing of the exhibition) was not central to the project's goals.

The shift in focus is, however, not a shift away from the practice of exhibiting, as the projects continue to curate and present public exhibitions in order to facilitate the more recent pedagogic focuses. Still, collaborations between public libraries and the educational (K-12) system have gradually become central to the Danish public libraries' engagements with digital literature.

One question that arises is, then, with what such a practice of teaching digital literature contributes, and how to articulate its importance. This question is not new: teaching digital literature has for some time

been recognized as an optimal way to teach multi-modal texts – teaching multi-modal texts is, in turn, an optimal way to sustain skills related to *digital literacy* and/or  $21^{st}$  *century skills*, in particular the ability to navigate born-digital textual landscapes (Coscarelli & Ribeiro). This perspective is in fact already present in the approach taken by Danish public libraries, where they specifically build on the concept of *multi-literacies* as their vantage point for articulating the importance of teaching multi-modal digital literature (Langdahl).

I nonetheless speculate whether it is possible to go further – to more directly articulate digital literature as cultural computation, and to thus situate it as part of the current push towards *computational thinking* in K-12. Computational thinking refers to a set of competences enabling the computational thinker to approach complex problems through mental application of computational concepts (Wing). It was initially almost exclusively based on principles from computer science (cf. Wing). However, the concept is increasingly being coupled with an awareness of the important critical aspects of computation. Accordingly, the approach to teaching computational thinking in Denmark, *Technology Comprehension*, which is a new K-12 subject inspired by maker culture and participatory design, explicitly highlights the importance of "societal reflection, meaning the critical reflection of the societal impact of technology" (Tuhkala et al. 57).

Teaching digital literature is *in itself* a way to teach computation and sustain critical reflection from a cultural – or rather techno-cultural – perspective. Indeed, digital literature can (and arguably should) be read just as 'technically' as 'culturally' – whether it be as a form of medium-reflexive exploration (Portela), a way of revealing the hidden mess behind so-called 'intuitive' interfaces (Emerson), or as inquiry into techno-ideological *tendencies* (Andersen & Pold). These exemplary readings (and many others) testify to the inseparability of 'technical' from 'cultural' concerns, in digital literature and beyond.

Such an effort to sustain a techno-cultural perspective through digital literature could set the stage for a development of what we might call a *post-digital literacy*. The post-digital condition, or, "the messy state of media, arts and design *after* their digitization" (Cramer 17, original emphasis) calls for approaches to literacy that engage directly with the messiness of the post-digital, and with the entanglement of the techno-cultural. The *post-digital economy* in which we find ourselves requires a poetics that resists computational capitalism's tight grip on processes of digitization through "a reaction against a platform's intended function" (Heckman & O'Sullivan 105), manifested in works of digital

literature that are "aligned with the forces they seek to disrupt ... while nonetheless being disruptive" (Heckman & O'Sullivan 101). In this post-digital economy, it is crucial to sustain children and youths' ability to *read* and *comprehend* such a poetics of disruptive resistance. The need for a post-digital literacy is actualized when we all too often find ourselves in the kind of predicament described by Davin Heckman and James O'Sullivan: "We could not find the code. We could only find its consequences" (107). Thus, sustaining a post-digital literacy is closely related to teaching digital literature as a form of computation(al thinking), insisting on the inseparability of the technical from the cultural.

Consider for instance Andreas Refsgaard's *Poems About Things*. The work is featured in the exhibition curated as part of Literature in Digital Transformation, where visitors can experience the work on their personal devices. *Poems* **About Things** utilizes a machine vision model to perform object recognition from a phone's camera, and then generates little poems about said objects based on the Google Suggest API's attempts to finish generic search queries that contain the object's name. Or, rather, queries containing the word that the machine vision model returns; though sometimes accurate, the software often gives surprising and seemingly arbitrary results, especially in a crowded library space. The work, then, is not so much about objects – or 'things' – surrounding the phone as it is about machine vision and Google: it troubles and poeticizes the very proprietary software platforms which increasingly



Andreas Refsgaard's **Poems About Things**. *Image courtesy of the artist.* 

order the world. Poems About Google – or Googles About Machine Vision.

Using the four central concepts from the teaching platform, students are enabled to unpack the work by focusing on the relation between *interaction* (pointing the camera) and the work's *literary quality* (the resulting poems), or between the different *modes of expression* (e.g. text vs. image), while constantly considering the work's *technical quality* – or lack of same, depending on the reading. Note that none of these aspects can be fully attested to either culture or technology, but can only be unpacked

by considering the work from a techno-cultural perspective, invoking a post-digital literacy. It is not necessarily the goal that the students reach sophisticated critique in K-12 – though perhaps it should be – but for now to spark a puzzlement and curiosity about the "messy state" (Cramer 17) of technology, culture, and the literary.

Teaching digital literature *as* a kind of computational thinking – in dialogue with current initiatives in programming and design – could constitute a critical, creative, and not least literary way to engage with the material and conceptual conditions of the digital computer and digitization at large. It would contribute greatly to children and youths' ability to approach computation and digitization with a strong techno-cultural sensibility – a post-digital literacy.

This is not all speculation; the last decade's efforts have brought multiple insights into the actuality of these claims. It has both been experienced by librarians first-hand and regularly pointed out in the academic evaluations of the projects, e.g. in the evaluation of Turn on Literature, where it is highlighted how the Danish exhibition had informed sophisticated reflection on the impact of mass digitization to language, as revealed in interviews with visiting K-12 students (Pold, "Literature Machines"). In my efforts to more clearly position the practice of teaching digital literature in relation to post-digital literacy, and thus in relation to computational thinking, I have (at the time of writing) conducted two pilot workshops using digital literature for pedagogic ends, relating it specifically to shared cultural conceptions of artificial intelligence and machine learning, and have gotten promising response; more workshops, more rigorous study of these, will follow.

#### **Notes**

- [1] I use the term *digital literature* (completely synonymously with *electronic literature*) in order to remain consistent with the Danish public libraries where that is the preferred term.
- [2] I participated in three of the projects myself. In Literature Takes Place, I was part of the CAVI production team; in Turn on Literature, I was student interaction designer at CAVI; in Literature in Digital Transformation, I was part of Roskilde Libraries' project group for three months as research intern.
- [3] Literature Takes Place also focused on performance literature; this paper will only include aspects of the project regarding digital literature.

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