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Published in:

Proceedings of the 2nd Association for Visual Pedagogy Conference

Publication date:

2017

Document Version

Publisher's PDF, also known as Version of record

[Link to publication from Aalborg University](#)

Citation for published version (APA):

Gnaur, D. (2017). Digital didactical designs in multimodal, hybrid learning environments. In K. Otrrel-Cass (Ed.), *Proceedings of the 2nd Association for Visual Pedagogy Conference* (1 ed., pp. 34-42). Dafolo Forlag A/S. http://www.avpc2017.aau.dk/digitalAssets/307/307703_f-0998-avpc-indmad_nypdf-1.pdf

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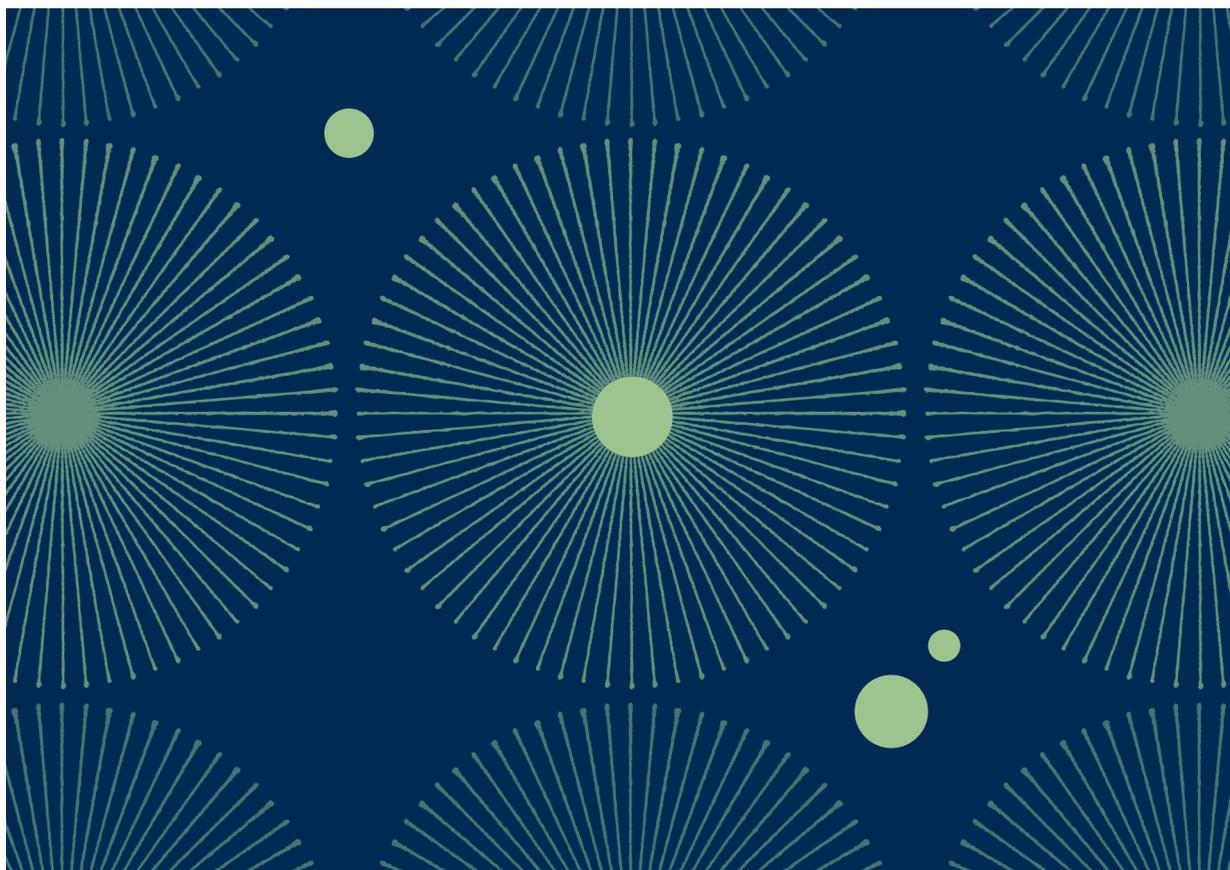
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UNDERVISNING OG LÆRING

Proceedings of
the 2nd Association for
Visual Pedagogy Conference



EDITED BY KATHRIN OTREL-CASS



Edited by Kathrin Otrell-Cass

Proceedings of
the 2nd Association for
Visual Pedagogy Conference

Kathrin Otrell-Cass (red.)

Proceedings of the 2nd Association for Visual Pedagogy Conference

1. udgave, 1. oplag, 2017

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Serie: Undervisning og læring

ISSN 2246-3259

ISBN 978-87-7160-659-1

Digital didactical designs in multimodal, hybrid learning environments

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Abstract

The three components in digital didactic design bring three specialties together. Syntactically speaking, the word design is the main constituent, which is articulated at two levels: [digital*(didactic)]. Didactic design can be viewed as process design for learning. Design reaches beyond routine planning and has a larger creative potential for configuring didactic settings, which further deep learning. When didactic design is digitally enhanced, the didactic possibilities are extensively enlarged towards new forms of innovative pedagogic thinking. Arguably, the digital modalities are not only attributes to the didactic design, but they have a deeper impact on the learning processes involved. Digital didactic design covers the creative processes and reflections that focus on digitally mediated designs for learning. Digital didactic design can thus be regarded as a new paradigm in teaching and learning. Based on a concrete case regarding the development of a digital didactic educational design, I look at new affordances for learning that take form in an extended, hybrid learning and action space characterized by multiple digital modalities. A hybrid learning design emerges as the principles for didactic design are displayed against the creative possibilities for digitally enhanced content and collaborative processes and social relationships across multiple learning and action spaces. The educational design referred to in this paper, outlines a hybrid learning environment that contains activities in three learning spaces, where physically and digitally mediated resources and interactions co-exist and supplement one another in both physical and virtual environments ensuring continuity, actuality and presence. The didactics change from being teacher and institution centered to becoming life and learning centered.

Introduction: A need for renewal

We live in a time where we expect information to be freely accessible and knowledge easy to acquire through a multitude of vivid, online digital modalities. New socio-cultural practices arise based on countless social, mobile and creative technologies and online networks. This will arguably revolutionize the

role of educational institutions, as we know them today, and the way formal education is organized, towards increasingly decentralized, digitally mediated, dynamic learning environments (Horizon Report, 2016). Traditional teacher roles, as knowledge providers, are out of pace with this development, which is calling for radical pedagogical innovations in order to provide adequate learning conditions in the fast changing, technologically advanced, hyper-complex modern societies. Not surprisingly, these trends are subject to a growing research field, which brings digitalization, teaching and learning as well as design practices together in an attempt to systematize new exploits within learning designs in a multimodal, digital world.

In this paper, I discuss the notion of digital didactic design as the particular exercise of developing a hybrid learning environment that exploits multimodal and particularly visual modalities in designing for learning in cross-action spaces (Jahnke, 2016). This exercise was undertaken by a teaching development team, including a teacher, a technology professional and a pedagogical specialist (myself), in search of new pedagogical approaches to enhance learning among in-service professionals engaged in continuing vocational training. More precisely, the design concerned a 10-ECTS course in Process Consultancy through Co-creation, as part of a graduate program in Leadership at a Danish University College. The need for a new type of learning design arose out of a critical gap in terms of learning transfer with regard to the course learning objectives, which emphasized co-creation competencies, which again implied learning through co-creating in practice. There was a need to bridge several learning and action spaces, including formal and informal learning and various working and networking settings, and this was met by designing for learning in hybrid, cross-action spaces that would be digitally enhanced to mimic learning in real life work situations. The course is now fully designed and expected to run this Autumn.

Hybrid learning is not only a mixed classroom and online interaction model, also known as blended learning. Rather it is a way to expand the range of teaching and learning opportunities to include out-of-classroom experiences in contextualized, authentic settings. The target group in our case would be provided with flexible access to enriched digital learning materials online that support in-depth delivery and analysis of knowledge (Young, 2002), as well as the opportunity to train new skills during scheduled workshop days with teachers and peers. Meanwhile, the learning space is substantially expanded to include the participants' respective work settings as the contexts of reflection, application and analysis of the provided knowledge and tools, as well as on- and offline peer collaboration to critically assess the validity of knowledge

in action (Jahnke, 2016; Vasudevan 2010). The multimodal, visual digital tools play a significant role in this as they present affordances to activate knowledge on demand as well as documenting and exchanging examples of using this knowledge in practice, promoting individual and group reflections and a-/ synchronous interaction and feedback among peers and with teachers. The question when considering hybrid learning is how to make informed didactic choices when designing for learning in enriched, digitally mediated multiple space environments.

Methodologically, the teaching development team leaned against educational design research (McKenney and Reeves, 2012), which emphasizes the reciprocal interaction between theory development and design development acknowledging "the role of theory in informing design and the role of design testing and refining theory" (s.11). Similarly, new teacher roles are being developed as a result of teachers engaging with technology within an emerging "teacher-as-designer" culture in education (Mor and Craft, 2012). Combining subject matter knowledge with pedagogical expertise and technological assistance offers a suitable framework for capitalizing on the digital affordances in teaching and learning (<http://tpack.org>). Of particular interest when advocating hybrid pedagogies, are the means of connecting learners to the fields of knowledge and to their co-learners and teachers, as well as rendering the world of practice visible to educators and applying technology to mediate the creative aspects of knowledge in action. The concept of multimodality helps engender various forms of configuring new media technologies and means of expression (Jewitt, 2005). It also helps engaging participants in negotiating meaning across multiple learning and action landscapes. Multimodal composing (Vasudevan, DeJayner & Schmier, 2010) infers more than just a combination of several modes of expression, i.e. via text, image and sound. Rather, it widens the range of possibilities in terms of what types of meaning is conveyed (Jewitt & Cress, 2003) and how it makes sense across the technologically mediated hybrid spaces that learning practitioners inhabit and traverse during their learning journeys. Mobile technologies and all-around wireless connectivity enable instant access to digitally mediated knowledge that can be displayed and activated in its context of use, and at the same time allowing for multiple ways to record, reflect upon and discuss what happens when putting knowledge into practice, as well as composing practice informed topics.

The case for digital didactic design

This paper takes a didactic perspective on designing for learning, the main point being that multimodal, digital representations and mobile technologies provide increased teaching and learning affordances that alter the way people learn. It is argued that this has the potential to enhance the learning process and the learning outcomes provided the learning design be subject to thoughtful pedagogic and didactic thinking. By affordances, I refer to the preconditions for learning in terms of the relationship between the objective qualities in the learning environment and the participants' subjective capacity to activate them (Dohn, 2015). This line of thought implies that affordances can be further enhanced through design, seen as "the human capacity to shape and make our environment in ways without precedence in nature, to serve our means and give meaning to our lives" (Heskett in: Dohn, 2016: 52). One avenue for shaping the affordances for learning with technology is the design-for-learning approach (Goodyear and Dimitriadis, 2012), which keeps the learning process at the core of the design process. Subsequently, the role of the teacher becomes that of designer for learning (Laurillard, 2012). Meanwhile, we need clearly defined objectives and learning needs, else "educational design becomes mere exposition" (Laurillard, 2002).

In our case, the focus is on developing co-creation competencies, with a strong emphasis on action. Co-creation refers to a new paradigm in the public sector, where relevant stakeholders, including the recipients of welfare, i.e. the citizens, partake of the creation process of new welfare solutions, across sectorial-administrative and professional divides (Sørensen and Torfing, 2011). The process consultants are expected to attain competencies to identify, mobilize and facilitate potential co-creation constellations. Co-creation has been referred to as entering a learning partnership with the relevant parties. A partnership is in itself a hybrid construction as it does not as such require a predetermined outcome, but rather a mutual commitment to explore potentiality and be part of a creative relationship over time (Andersen, 2012). The participants are thus expected to identify, analyze and facilitate processes related to co-creation within an action research approach to promote methodologically informed and knowledge based decisions. These particular learning needs echo socially situated, participatory, constructivist but also hybrid pedagogies that can mediate learning and action across various contexts as well as collaboration with peers.

These requirements need to be accommodated at the didactic level. We support the notion of digital didactic design (Dohn, 2016) to reflect a form of "conditional creative forming" (p. 49, my translation). The design concept in-

dicates the iterative nature of creative decision making processes, which are rendered even more complex when considering the myriads of possible digital configurations. Jahnke (2016) defines didactic design as “process design for learning”, which can be digitally mediated in order to help students seize learning opportunities in various contexts. The learning process follows the learner and teaching shifts from being teacher- and institution-centred to be learner- and life-centred.

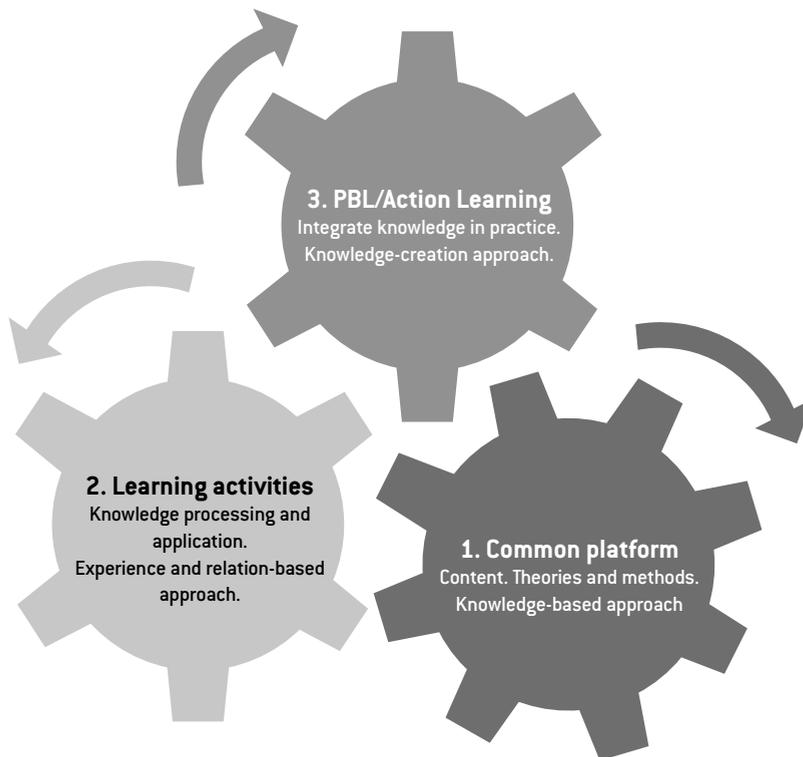


Fig.1: Hybrid interaction model

In our case, the digital didactic design consists of a hybrid learning environment based in digitally mediated social interaction at three levels of interaction in order to ensure fluid reciprocal connections between conceptual, processual and creative types of knowledge in relation to participants’ respective contexts of practice. The hybrid interaction model that we developed (Fig.1) shows how the three domains of learning are mutually interrelated involving hybrid spaces and digital modalities. 1. The communication of knowledge, where the learner interacts directly with digitally mediated content knowledge. 2. The processing of knowledge, where learners train, apply and reflect on their experiences with

putting knowledge into practice in their respective contexts – here learners avail of face-to-face training opportunities and mediated process descriptions, as well as various multimedia tools for recording, sharing and critically reflecting upon their experiences together with peers and teachers. 3. At the third level of interaction, participants are advised to identify a co-creation project in order to produce practice-based knowledge through problem-based learning (PBL). Participants work individually or in groups. However, this exercise involves explicitly the creative use of multimedia for collecting ‘reality case stories’ from the field and documenting their approach to co-creation in the form of multimodal compositions. The knowledge creation is thus problem and project based. The course ends with a knowledge-festival day, where participants are invited to present their projects and what they have learned, preferably with digital samples from their respective projects.

Multimodal, visual pedagogies

When learning thus moves beyond the formal institutional context and into real work and life settings, teachers need to design in a responsive manner, i.e. making use of vivid, rich modalities that favor human presence (Pacansky-Brock, 2013) to reflect real life situations, enable social relations and promote creative contributions that mimic real-life participation. From the field of human-computer interaction research, we learn that online environments that use color, pictures, shapes, video and photographs, have an emotional appeal among users. Although usability criteria remain important, it is equally important that online interfaces contain faces, i.e. human images and a sense of social engagement and of involvement (Cyr, 2014). The incorporation of human presence in the form of human faces in online environments promotes a sense of community among users (Donath, 2001). Furthermore, perceived social presence online is subject to the feeling of psychological connection and human contact, and thus relative to “the extent to which a medium allows users to experience others as being psychologically present” (Gefen and Straub, in: Cyr, 2014).

The imagery of human presence and psychological connection can be easily associated to the video format and the rendering of real life content. In a study on using video in the professional development of teachers, Woodard and Machado (2017) argue that video has the potential to record and document richer and far more detailed information from complex events and situations, than any other modality. They identify three categories of video use in relation to professional development (p. 56): 1. consuming videos, i.e., engaging critically

with video mediated content knowledge; 2. connecting through videos, i.e., collaborating in a number of ways based on real life recordings and through video mediated personal and group reflections and discussions; 3. creating videos, i.e., composing and sharing videos to document knowledge in practice. These categories correspond to the three levels of digitally mediated interaction that was identified in the hybrid learning model for competence development in our case, which adds to the evidence on the efficacy of video and visual communication in teaching and learning.

There are however a number of impediments to the full integration of visual pedagogies into digital didactic design. Our experiences confirm Woodard and Machados identified barriers to harnessing the full potential of this powerful tool, namely participants' hesitation to perform visually online. These challenges need to be considered when designing for learning in hybrid digital environments in order to scaffold learner experience by gradual and meaningful initiation to video enhanced learning.

Conclusion

Portable technologies can access increasing loads of digital content through faster and more stable connections. In this way, we stay connected most of the time. Education needs to make a firm move in being part of the hybrid, online and offline spaces that learners traverse in their daily activities. It is not an easy transition as it demands designing for learning expeditions in ever changing complex settings with due regard to capitalizing on learning affordances in various environments. Digital technologies and multimodal possibilities for framing and mediating designs for learning can no doubt inspire teachers' didactic fantasy. However, a move in this direction requires organizational support in terms of philosophies of change, on the one hand, and the due capacity development and practical support, on the other. In this way, educational institutions can prepare to receive future generations students that will now doubt bring along radically different conceptions of communication and learning in an increasingly hybrid living environment.

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