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Blended Learning Promoting new Developments for Nordic Master Programs in Visual Studies and Art Education

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Abstract: This paper presents and discusses a blended course design in the international Nordic Visual Studies and Art Education (NoVA) master's program developed and conducted by four Nordic partners. We examine a particular course - *Visual cultures and aesthetics in digital communication and learning designs (VCAD)* - in which e-activities are targeted to enhance a learning cycle shaped by the practical design experience of ten students. The cycle also includes theoretical reflections (Buhl 2013), and particular emphasis is put on social media, aesthetics, and visual culture for learning purposes (Ejsing-Duun & Buhl forthcoming). The blended learning course VCAD involved a combination of face-to-face teaching with usage of location-based and mobile activities involving i-nigma, Instagram, and Pinterest, which comprised their learning materials and platforms. Furthermore, the course included online activities via the learning management system Moodle and the presentation and video conferencing system Adobe Connect. Studies on design-based research (DBR) approaches (Amiel & Reeves 2008, Dede 2004) inspired the principles for the research design, as teachers made interventions during the VCAD course. The research approach was also moulded by the specific discipline of art education, which is characterized by currents in contemporary art and visual culture, where image-making as the social negotiation of meaning-making and cultural interventions is practiced (Mitchell 2002, Mirzoeff 2000, O'Rourke 2013). Our research focus is how blended, distributed e-activities provide a new approach to the field of visual arts education, which is traditionally based on image-making associated with presence and individual forms of expression in which theory is taught separately. The educational design of the VCAD course is discussed throughout the article. This discussion is supported by the VCAD course evaluation and the ten students' design products and theoretical reports. We argue in favour of a theory-generating practice made operational through a functional learning approach comprising blended e-activities subordinate to the particular objectives of a specific discipline.

Keywords: theory-generating practices, functional learning approach, open resources, mobile learning, design-based research, visual arts education, blended learning

1. Introduction

In consequence of current developments in the contemporary art field, an interest in international collaboration in education, and the possibilities that have emerged from it and communication technology ICT, four Nordic countries decided to initiate a project with the purpose of creating NoVA, a new master's program, in 2011. The partner universities and departments in the NoVA project are the Department of Visual Arts Education at Konstfack University College of Arts, Crafts and Design (SE); Department of Art, Design and Drama at Oslo and Akershus University College of Applied Science (NO); Department of Art at Aalto University, School of Art, Design and Architecture (FI), and Department for Communication and Psychology at Aalborg University Copenhagen (DK).

The NoVA program aims to implement the currents of contemporary visual arts, cultures, and communication into learning practices. Teaching at NoVA also includes digital media as learning tools as well as for aesthetic production and communication, and thereby suggests a profile of visual studies and art education for professionals that promotes an expanded range of e-activities.

The authors of this paper represent the Danish partners of the collaboration. In this paper we discuss VCAD the first course of the NoVA program taught by one of the authors. In this particular course, the choice of the devices drew on visual art methods of image-making and visual culture theories. We examine the particular course design in which e-activities were targeted to enhance a learning cycle shaped by the practical design experience of students followed by theoretical reflections (Buhl 2013). Particular emphasis was put on social media, aesthetics, and visual culture for learning purposes (Ejsing-Duun & Buhl forthcoming).

[1] While this paper is written and presented by the authors, the NoVA program represents a research area of equal rights for each of the members of the consortium, from the partner universities. Exclusive rights for research and creative work associated with NoVA, including this manuscript, are shared equally and are acknowledged as a collaborative endeavor.

2. Methodology and theoretical framework

The VCAD course design draws on a DBR approach (Amiel & Reeves 2008) informed by: the currents in the domain of contemporary visual studies and art; the domain of IT educational design; and visual pedagogical research (Buhl & Flensborg 2011). DBR is a pragmatic research approach that combines iterative development of a design with research activities aimed at enhancing the design as well as developing theory. In DBR, a theoretical concept based on domain-specific knowledge forms the outset for forming design principles that are tested, reflected, and enhanced. Chris Dede (2004) problematizes the DBR idea of developing one concept that can be repeated to many learners in different situations. He argues that every pedagogical situation is a new situation to which one must be open and inquire about, which is emphasized in his question: "If Design-Based Research is the answer, what is the question?" (Dede 2004). Sharing Dede's reservations, we still think that the idea of inquiring through design iterations may provide a productive perspective on the development of a course involving both discipline-informed and e-learning activities.

VCAD, the NoVA course discussed here, is the result of several iterations of similar course designs at our home university, in which the basic principles of a pedagogical concept involving different constellations of digital technologies and online activities were designed, tested, and renegotiated on the paradigmatic level, taking the situatedness of pedagogy into account. The evaluation of the VCAD course comprised an individual questionnaire as well as an oral group evaluation, which, together with the ten students' visual design products and written reports, forms the empirical data.

In the paper we discuss the content and a pedagogical model for promoting theory-generating practices (Buhl 2013) of the VCAD course design. The concept of theory-generating practices draws on the notion that theoretical knowledge generates from practical design experience succeeded by reflections. The notion draws on insights from theories on aesthetics rooted in German philosopher Baumgarten's concept of aesthetics as a mode of sensory cognition generating knowledge (Baumgarten 1968, 1992) and involves American pragmatist Dewey's ideas of art experience as cultural contextualized where learning stems from experience (Dewey 1980). Furthermore, the notion of theory-generating practices adds a social constructivist aspect in which the manipulation and design of artifacts promotes the reflective activity of negotiating meaning and theoretical thinking. The theory-generating practice has been studied empirically in different settings (Buhl & Flensborg 2011, Ejsing-Duun & Buhl forthcoming). We argue that this approach combined with blended and e-activities promotes new developments for art education on a master level as well as it suggesting a pedagogical model with relevance for other learning domains in the humanities. The DBR approach is used as a structure for the following paragraphs that present the *domain*, *design principles*, *implementation* and *reflections*.

3. Domain: The VCAD course in the master's program Nordic Visual Studies and Art Education (NoVA)

The initiative of NoVA aims at the present and future workforce, where project-oriented methods and content relevant to the field are combined with collaborative and problem-based working skills (Tavin & Kallio-Tavin 2015). This is done in recognition of challenges enhanced by globalization that leads to a growing need to understand and influence intercultural practice (UNESCO 2006, 2010).

The program, launched in fall 2014 explores the possibilities of developing the domain of art education in which discipline-informed activities traditionally are associated with painting, drawing, or sculpting and have a strong but separate relation to the theoretical developments in the field of art history. Furthermore, these activities focus on artistic expression as an individual endeavour. According to Elkins (2003), the individual focus in art education stems from a tradition where artistic activities are viewed as a matter between the inspired artist and the material. While many art programs seem to find it difficult to take in new art forms, contemporary arts are rather conceptual and societal and often produced in social and collaborative projects which gives rise to new opportunities for professional engagement in knowledge societies.

The VCAD course revolves around the practices and theories of visual cultures drawing on international developments (Elkins, 2003, Mirzoeff 2000, Mitchell 2002, Rogoff 1998), Danish visual culture pedagogy, and digital visual communication emphasizing the productive part of generating knowledge (Buhl & Flensborg 2011, Ejsing-Duun & Buhl forthcoming).

The concept of visual culture emerged from a discussion among scholars representing different disciplinary fields like art history, media studies, philosophy, literature, and sociology, arguing that academia lacked a sufficient framework to grasp contemporary visuality. As a consequence of the discussion an approach emerged claiming that the visual was culturally determined and that visuality must be comprehended in a broad field of perception and social practices. Furthermore, visual culture comprises a methodology to comprehend how individuals in late modernity interact and communicate. One methodological approach to visual culture revolves around the construction and positioning of the glance in the meaning of how we can understand what we see and how this glance comes about (Buhl & Flensborg 2011). The limited research of this particular pedagogical approach informs that attention to technology must be included when teaching visual cultures (Freedman, 2003). The approach is, however, supported by the suggestion that the visual aspect of social media is suggested a to be good fit for teaching visual culture as they are gaining ground among a growing number of users (Quinn & Papacharissi 2014) that form their own culture (Freedman et al 2013).

Thus, the VCAD course design is an articulation of this view on the research field visual culture and NoVA's conceptual framework *Sight/Site/Cite* which relates to the training of the *Sight;* the reference to the *Site*-specific geopolitical and pedagogical dimensions of space and place; and critical reflection of the *Citation* of existing texts, theories, and artworks (Tavin & Kallio-Tavin 2015). The VCAD course pedagogy is articulated in the following design principles: theory-generating practice and functional learning approaches.

4. Design principles: Theory-generating practice and a functional approach

4.1 Theory-generating practice

The theory-generating practice approach places the learner's practical skills and competences at the centre of attention, making it the basis for generating new knowledge supported by theoretical reflections (Buhl 2013). Theory-generating practice draws on a multimodal approach where symbol systems as well as sensory-based experiences come into play. The theory-generating practice takes the bodily experience of visual practices into account, as they have academic value. This approach is inspired by Dewey's pragmatism (1980) and Baumgarten's concept of sensory cognition (1968).

Theory-generating practice operates within a learning cycle that interacts among production, reflection, and theoretical knowledge. Through production, bodily experiences are activated and reactivated when the students reflect on their own design. Theory-generating practice requires a learning design that supports the student's production and learning process—from planning the practical design to selecting and analysing the practical decisions, and finally conducting theoretical discussions on the basis of the material (Buhl 2003). In this process, the student is required to be observant of his/her own choices. Furthermore, the student must be prepared to attribute these experiences' importance as academic experiences, because they form the basis for achieving theoretical knowledge. This is achieved as the student plans interventions on the basis of theoretical knowledge and by conducting sessions of reflections. In this process ideas and drafts are conceptualized and discussed in theoretical terms with other students, and the teacher functions as moderator.

The learning cycle of practical design and theoretical reflections qualifies art practices as they promote an academic outcome in educational programs suggesting visual studies and art for mediating, communicating, and educating. The learning cycle suggests that practical experiences articulated into a product create an analytical distance to the student's own learning process and create a relation that promotes an enhanced comprehension of the theoretical implications of the reflections that follows.

Theory-generating practice determined the structure of the course, which started with a short overall introduction of the main concepts. The students were then led through a rapid learning cycle with a design assignment. The design assignment was to conduct a visual event in groups, to be planned, designed, produced, and presented to their peers in one day. After this rapid learning cycle experience, the groups were given the overall assignment of the course, which was to create an expanded version of the artistic visual event, through which a chosen landmark in their home city was augmented through the use of i-nigma. Together with other landmarks, this landmark made out a map of experiences across cities. The students manipulated the landmark by photographing it and merging the photo with another photo, which could facilitate augmented reality. This new image could be activated by scanning a quick response (QR) code by passersby. This overall assignment constituted the course exam. The assignment structured the course activities comprised by design; design

presentations in group sessions in which the students took different roles as presenters, opponents, and observers; as well as theoretical lectures given by the teacher. Through this course structure, the students knew what was expected of their performance from the very beginning.

This course design is workable in a contact teaching design, but it is especially workable for a blended course design, because it is organized in a way that makes the students the main actors in ensuring the progression of their learning.

4.2 Functional learning approach

Theory-generating practice is made operational through the functional learning approach. The design principles are first and foremost a result of the domain taught, the learning objectives, and the teaching method applied inspired by problem-based learning (PBL), in which the learner is at the centre of teaching emphasizing participant control (Glud et al, 2010).

From the perspective of visual arts education, social media merge former art methods and technical devices for visual production. For instance, Instagram merges former working sequences of image processing software (e.g. Photoshop) in a simpler way that is functional for types of visual practices of communication where the message is situated and rapid. From a contemporary approach of art pedagogy, Instagram can be used to explore visual cultures of a topic or theme (Ejsing-Duun & Buhl forthcoming). Another example is Pinterest, which serves another activity of art pedagogy in a contemporary perspective. Pinterest offers a tool for collecting pictures on a particular topic, which is a digitalized counterpart to material collages and image boards for sketch work. Pinterest supports the sketch work by being a platform for a huge digital resource of material for the image boards and by enhancing the possibility for students to share and collaborate in producing the boards (Ejsing-Duun & Buhl forthcoming). I-nigma provides the user with the possibility to work with practices and produce art in different physical locations. Using the possibilities for making links, i-nigma gives possibilities for providing art experiences in a landscape by adding a kind of augmented reality and by manipulating urban places, adding new spaces for experiences.

To support the design of the learning cycles of practical design and reflections, Moodle was chosen as it was implemented at two of the partner universities. It was used for the course syllabus, written assignments, and formal faculty information. The teachers planned to use Moodle to create a common platform, a nest for the NoVA identity, but found that most of the Moodle forums or activity resources were not suitable for the pedagogy of the course. It was not suitable as it did not support the exchange of visual materials due to low server capacity, its layout did not support visual material, and it lacked possibilities for sharing and pushing content and producing images. Instead, students used Instagram, Google, and Facebook to share NoVA experiences.

Online meetings were supported by Adobe Connect. Adobe Connect offers a combination of screen/speaker and a window for document presentation, which served the course's purpose as it allowed students to participate and present from their home universities. The students finalized the course by handing in a group report and making an oral presentation at the follow-up face-to-face symposium.

The overall assignment implied that the final design was placed in the home cities of the participating universities and was accessible to a public audience. The locations from each group constituted a map of NoVA locations on a shared Google map, which underlined the mutual aim of a local yet international artistic intervention. The mapping perspective addressed a contemporary art theme of mapping as a construction and societal intervention, drawing on the artistic and theoretical work by O'Rourke (2013) and Vertesi (2008).

5. Implementation: Findings from testing the course design

The empirical data for discussing the course design and its design principles are divided in two: students' group products (visual designs, process documents, and reports) and students' expressed experiences (evaluation). This paper focuses on findings addressing the main idea behind the course design's theory-generating practice.

5.1 Course objective and results from students' products

The data reveal that all the groups managed to develop, test for, and implement a design for a visual event in Helsinki, Copenhagen, and Oslo, respectively, following the instructions of the course design. The applied learning cycles, in which the students examine a topic firsthand through practice and then reflect theoretically on their choices, provided the students with experiences through which they were able to identify and elaborate on issues related to the theoretical course content in a detailed way. We saw that the impact of learning from reflecting on practical design drafts made a productive slowdown of the artistic process.

A second finding reveals that being organized in groups and the structured learning cycle helped the students practice negotiation of artistic ideas as well as pay attention to the potential audience. Contemporary art is characterized by social and relational meaning-making constituted by a concept that involves more stakeholders than an isolated individual performance (Bourriaud 2005). The students' reports reveal a focus on how to work with these aspects in relation to ideas for the design of the augmented reality experience, but also reflections on the implementation of the final design.

A third finding is that the descriptions of the implementation of the landmark found in students' reports showed a highly attentive perception of the surroundings where the landmark was placed. These perceptions were reflected in terms of aesthetic references like colours, architecture, place, space, perspective, and composition, and were related to course literature. The designed landmark experiences drew on references to images telling another story of the location e.g.: Virtual flowers were installed in a grey neighbourhood, the outer space was installed in a pond in a botanic garden, a narrative of giants was applied to a city skyline, and playful and colourful tiles were applied to a rush area near a main train station. These tiles can be traced back to contemporary street art, to which students were introduced in the beginning of the VCAD course.

A fourth finding reveals that the learning cycle challenged the students enrolled in the VCAD course in different ways. The students were a diverse group representing different nationalities and learning cultures. The diversity of student backgrounds meant that different parts of the learning cycle were a challenge. For instance, students with an artistic background were more challenged by keeping the focus on the audience for their design and less challenged by the aesthetics in the process of sketch work. Students with a communication background were more challenged by the art skills for image-making and less challenged by tests of designs with user groups.

All students were challenged by the demand for reflecting theoretically on the basis of practical hands-on experiences as an academic discipline, but the designs and reports show indications that they actually practiced it. Specific course titles were connected to the structure and intended to be read and discussed in the sessions along with the design process in order to qualify the theoretical discussions of the actual process. This activity was scarcely represented in the online sessions and process documents. This may be explained by the literature being too hard to read, the connection to reflections being too hard to make, or the students not having read the literature as instructed and postponing it to the final report, but this cannot be concluded from the data available.

5.2 Course objective and results from students' evaluation

The overall evaluation reveals a notable correspondence with the learning objectives of the course. The learning outcome is experienced as being a "practical 'hands on' methods and visual ways of thinking process." Concrete learning outcome included acknowledging the difference between the "seeing eye" and the "curious eye," which was a concept pair emerging from a title (Rogoff 1998) in course literature. Other students had a more overall take on what the outcome was emphasizing and found that the course had made it clear that visual culture is an independent field of study linked to e.g. art history and graphic design, which is about "how we use and relate to the visual in a cultural context."

The students' experience from the course activities shows diverse opinions of the course design which to some extent may be ascribed to their backgrounds. The diversity of students' backgrounds does not only show from knowledge, skills, and competences prior to the course, but also from their expectations, thereby biasing their experiences of the course. Art education courses were traditionally divided into image-making or theoretical courses (c.f. Elkins 2003). According to Freedman (2003) art educations seem undertheorized, which results in a curriculum comprising a succession of isolated, skill-based activities and lacking rich conceptual frameworks.

The direct combination of both image-making and theory in one course, where theory is represented by visual culture, is rarer as represented in the course design. One finding is that the students experienced this very differently in the VCAD course evaluation: One student emphasized that there was a good balance between theory and practice and that making the design log helped in this process. Another student found that designing first and then "trying to glue the theory in it" was not an ideal approach, as it seemed "fake." The latter statement indicates no experienced relation between practical experience, reflection, and theoretical knowledge.

With regard to findings of the organization in group work enhancing collaboration and the collective image-making process, one student experienced the VCAD course as being: "[...] far more artistic and design based than I'm used to." Along those lines another student highlighted that the—in this student's experience—rather large freedom given led to different results and did not hinder creativity. The students have experienced what was a very structured process as being free, which indicates that the design of a structured process without a predefined outcome promotes the possibilities of creative thinking. Regarding the collaborative working, a few students noted that they would prefer more individual work. The wish for individual work is a critique that is to be expected in a course with reference to a tradition of individual image-making.

The online chat was derided as being confusing, but students acknowledged that it was necessary due to the program's international scope. Our findings suggest that issues of code of conduct were raised by some of the students. The students took different stands on the role of the chat room in Adobe Connect as either being a productive subtext or a disturbance. The role of chat gives rise to further investigations of how many voices can be present in a synchronous learning space and which positions the voices should take in the learning discussions. The discussion touches the paradigm of teacher-student roles, which needs to be addressed when a multimodal platform like Adobe Connect defines the learning space.

5.3 Theory-generating practice in art education? Advantages and difficulties

The course design aims to combine a conceptual approach to contemporary art with a pedagogical model of theory-generating practice utilizing digital devices and platforms for supporting collaborative practices of image-making. The endeavor of this approach to teaching art education is challenged by ideas of what art is, what art education is, and how art pedagogy should be performed. First of all, the scope of education of art educators and professionals is in many institutions still very traditionally attached to painting, sculpture, and architecture even though contemporary art is developing toward societal collaborative and conceptual projects. According to Elkins (2003), this may be explained by the power of existing research institutions of art history, which may see a threat from interdisciplinary and cross-disciplinary activities, which are in line with currents in society as well as the performing arts. The performing art field moves from personal expressions toward social negotiation involving different stakeholders.

The field of visual cultures is an attempt to address the theoretical and methodological implications of this development. The students of the VCAD course represented different variations of these experiences, which also formed their expectations for the program. They were introduced to several renewing attempts in course content as well as in course organization. Combining the development of arts with as many challenges from implementing blended e-activities in university pedagogy and integrating students expected experiences as users of social media in one course design may be ambitious and confront diverse expectations. Still, the students express enthusiasm for being part of a program they consider a new and exciting university education. The VCAD course content will be further elaborated for the next phase of the program development, but the main structuring and theory-generating practice as the common thread will remain as representing one contemporary current of visual studies and art education where the conceptual, the practice of negotiating meaning-making, and the collaborative organizing are relevant professional competencies.

6. Reflections: Concluding remarks based on findings

The discussion of blended learning promoting art education is based on the pedagogical model drawing on the notion of theory-generating practices in combination with adequate digital devices, platforms, and e-activities. The implementation of the VCAD course design constitutes paradigmatic as well as organizational issues in university pedagogy:

- Obstacle 1: The approach is up against traditional university pedagogy in which the teacher gives theoretical lectures in a lecture theater and the students write assignments and produce a final test. Moderating the

students' academic progression by scaffolding them as the main responsible of a practical design based on a functional approach to theories and e-activities is turning a well-established dramaturgy upside-down.

- Obstacle 2: The field of art has reservations toward the concept of visual culture growing out of the field itself. The conceptual difficulty of understanding the construction of the gaze as the main perpetuator of meeting visual phenomena as well as the unbounded field of visual phenomena may be the strength of the scope, but it provides a weakness toward settling in university institutions comprising well-established and empowered departments. Placing image-making as knowledge-generating activities in a predominantly verbal and written discipline requires a change of focus on what visual literacy is.
- Obstacle 3: The lack of flexibility of digital solutions in universities to suit multimodal teaching and learning processes has a strong impact on what is possible to practice in an educational program. The market of resources is in itself an impactful factor as well. However, the latter is not new; the tools for picture production have always determined the artistic expression and exploring that is a part of art. The same goes for technology. To implement digital solutions that embrace the implications of multimodal learning practices requires an organization that acknowledges it.

But why revitalize art education? Because, we have to teach students for the reality in which they are partakers and the future they form.

References

Amiel, T. & Reeves, T. (2008) "Design-based research and educational technology: Rethinking technology and the research agenda", Educational Technology and Society, vol 11.

Baumgarten, A. (1968/1735) *Filosofiske betragtninger over digtet*, Arena, Copenhagen.

Baumgarten, A. (1992/1750) *Aesthetica*, Agora, Aarhus.

Bourriaud (2005) *Relationel æstetik*, The Royal Danish Academy of Arts, Copenhagen.

Buhl, M. (2013) Video as a means for the academic improvement of a profession. Herbert, A. & Kraus, A. (eds.) *Praxeology as a Challenge in Pedagogy*. Waxmann Verlag, Münster: pp. 109-125

Buhl, M. (2003) Lærerstuderendes praktik starter på seminariet, In: Buhl, M.; Meisner Christensen, K.; Skov, K (eds.) *Praktik*, Zahle Seminarium, Copenhagen

Buhl, M. & Flensborg, I. (2011) *Visuel kulturpædagogik*, Hans Reitzels Forlag, Copenhagen.

Dede, C. (2004) "If DBR is the answer, what is the question? A Commentary", The Journal of Learning Sciences, vol.13 No. 1, pp. 105-114.

Ejsing-Duun, S. & Buhl, M. (forthcoming) "Social aesthetics: Systems of interaction as structures for negotiation and development of aesthetics", Leonardo Electronic Almanac.

Elkins, J. (2003) *Visual Studies. A sceptical introduction*. Routledge, New York.

Freedman, K. (2003) *Teaching visual culture: Curriculum, aesthetics, and the social life of art*. Teachers College Press.

Freedman, K.; Heijnen, E.; Kallio-Tavin, M.; Kárpáti, A.; Papp, L. (2013) Visual culture learning communities: How and what students come to know in informal art groups. National Art Education Association Studies in Art Education: A Journal of Issues and Research, 54(2), pp.103-115

Glud, L. N., Buus, L., Ryberg, T., Georgsen, M., & Davidsen, J. (2010) *Contributing to a Learning Methodology for Web 2.0 Learning – Identifying Central Tensions in Educational Use of web 2.0 Technologies*. In L. Dirckinck-Holmfeld, V. Hodgson, C. Jones, M. de Laat, D. McConnell, & T. Ryberg (Eds.), Proceedings of the Seventh International Conference on Networked Learning,pp. 934-942

Mitchell, W.J.T. (2002) "Showing seeing", Journal of Visual Culture vol.1No.2, pp.165-181.

Mirzoeff, N. (2000) *An Introduction to Visual Culture*, Routledge, New York.

O'Rourke, K. (2013) *Walking and Mapping*, MIT Press, Cambridge.

Quinn, K., & Papacharissi, Z. (2014) "Social Media and Sociality", Media and Social Life, vol. 189.

Tavin, K. & Kallio-Tavin, M. (2015) The Educational Frameworks of NoVA: Collaborative master studies/master programme, Nordic Visual Studies and Art Education. Education Changing Institutions. Draft Catalogue. Oslo and Akerhus University College.

UNESCO (2006) Road map for arts education. Building creative capacities for the 21st century [Online], http://portal.unesco.org/culture/en/ev.phpURL_ID=30335&URL_DO=DO_TOPIC&URL_SECTION=201.html.

UNESCO (2010) Seoul agenda: Goals for the development of art education [Online], http://www.unesco.org/new/fileadmin/MULTIMEDIA/HQ/CLT/CLT/pdf/Seoul_Agenda_EN.pdf.

Vertesi, J. (2008) "Mind the Gap: London Underground Map and Users' Representations of Urban Space" Social Studies of Science, vol. 38, pp.7-32.