

The Electronic Prometheus and its Consequences for Art Education

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Abstract

This paper consists of three parts. First, a discussion of certain aspects of media art pedagogy, secondly, comments on computers from the view of art pedagogy, and finally, thoughts on a future art and media pedagogy.

Aspects of media art pedagogy

Luther's translation of the Bible as well as Gutenberg's invention of printing from moveable type paved the way for the major media event of modern times. (Figure 1) Lucas Cranach contributed illustrations and thus helped to implement the traditional image in this new medium – the printed book. One hundred thousand of these Bibles were sold, at that time an unprecedented number. Discussing technology and its effects on society and communication structures today, we often feel inclined to compare the invention of printing with that of the computer. And so we easily forget to take the particular social context into account, in which these different technologies need to be seen. From the pedagogical point of view, we should be very careful about how we perceive the phenomenon of computers in society and school.

One hundred thousand is the current number of monthly new registrations with Germany's largest Online Provider. In terms of the number of computers and Internet users, Germany has a good European average. Most German schools are equipped with some computers, but at the moment we lack a sufficient number of computer literate teachers who are able to give computer classes. Even more, we lack teachers who have appropriate hardware equipment and specific skills, and who are able to integrate computers in their particular discipline. Art teachers are especially reserved when it comes to placing a computer next to their easel. One could say that, whereas the classical Prometheus stole fire from heaven to give it to humans, it is computers that the electronic Prometheus has brought down to earth.

Many of today's media, especially computers, work with digitised data. As a result, data structure can be extensively modified and the process of modifying information, images, and more has become much easier. It is also interesting to note that when studying the outcome, modifications cannot be traced. [1] The media have a great impact on what we perceive or experience as reality. (Figures 2 & 3) Our idea of reality is strongly influenced by the products, or rather constructions



of the world wide media network. And this again leads us to question how real reality actually is. [2]

It is certain that the so-called New Media help adolescents to repeatedly perceive and digest breaks in their everyday life. Perception via the New Media has a great impact on adolescent ideas of identity. The corresponding aesthetic processes and their results cannot be exactly translated and interpreted into another symbol system, such as spoken or written language. The major differences between the visual arts and media-created forms of expression are:

- the media offer animated images combined with complex sounds;
- aesthetic media products are always available – they are omnipresent;
- on the Internet, there is an increasing number of interactive perception offers available. The user is invited to intervene and to make changes. However, these images have no representational equivalent outside this virtual reality, e.g., cyberspace.

Could we contrast visual gain with linguistic loss? Cultural transformation comprises knowledge of tradition and historic awareness. One of the major



functions of language is that it is the instrument of sophisticated communication. However, for some time now, we have been facing a considerable increase in pictorial symbol complexity. For the time being, the number of icons, as more and more comprehensible symbols, increase as fast as tumour cells divide. This goes hand in hand with linguistic changes, so that in this context, a sophisticated language style seems no longer of major importance.

Pedagogical and psychological research on changes in symbol communication and the corresponding mental abilities in connection with the New Media is still in its infancy. However, with reference to structuralism and in the framework of observations from a pedagogical point of view, the following theories can be cautiously suggested. The New Media change the meaning of communication:

- Within the linguistic code, audio-visual texts, i.e. spoken or printed texts accompanied by images and sound, gain in importance.

- This goes hand in hand with an increasing importance of the mathematical-logical code, since 'computer language' (as I want to call it) determines the design and the use of software.

- Within symbol communication the social gestures will change. It remains to be determined, what status they will have.

- Taking all these points into account, a progressive blending and an overlapping of different communication forms can already be predicted. Up to now, human perception and mental processes had to be seen in a social and historic context. But with the New Media they are exposed to a historic power so far unknown – concretising and abstraction. [3]

It is due to the development of graphic user interfaces that computers have been well-received by large numbers of users. The icon, for most part a pictograph, imparts a related conceptual idea with the help of visual characteristics. These symbols are so similar to word symbols that they

Far right:
 Figure 1
 Gutenberg's invention of printing

Above left:
 Figure 2
 The media have a great impact on what we perceive or experience as reality

Above right top:
 Figure 3
 The media have a great impact on what we perceive or experience as reality

Above right bottom:
 Figure 4
 Computers are a very diversified tool

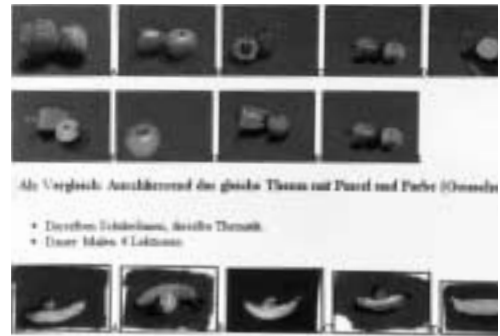
can be considered their substitute. In this context, aspects of a certain visual competence based on art pedagogy come to the surface. I am referring to visual literacy here, defined as an ability that can be developed. Visual literacy requires, with regard to the New Media, the skill to exactly interpret visual messages as well as personally create them. [4] A major pre-requisite for successful communication in visual literacy, especially when it comes to working with technologically sophisticated devices, is based on visualisation.

Computers from the view of art pedagogy

As soon as computers are actively integrated in teaching, it will be necessary to adapt present teaching methods to this new instrument and allowance will have to be made for students' different levels of computing skills. However, there may even be students who are more at ease with computers than their teachers! Using computers requires a certain competence and at the same time, a combination of the skills of various individuals. Technical devices, such as scanners, digital cameras, printers, or recordable CDs need to be shared. At school, computers are mostly connected by a network and from many of these computers one can have access to the Internet. Thus, a wide variety of communication possibilities open the door to new ways of learning.

It has always been the responsibility of schools to promote social competence by helping students develop key qualifications, such as the ability to communicate and to work in teams. Computer-aided telecommunication networks support learning methods which require teamwork when it comes to coping with problems and maximising benefits. [5] Computer networks can put students in the roles of information producers, recipients, and critics. Furthermore, computer networks make an asynchronous and reasonable communication with both visual and textual elements possible. Learning with the help of computer networks leads to students working more independently. [6]

With regard to the discipline of visual arts, computers turn out to be a very diversified tool:



collages, alienation, transformation of images taken from every day life or the arts – everything is possible. (Figure 4) Already low price software which, for the most part, is easy to use, provides different sorts of pens, paintbrushes, chalk or pastel. Additionally, there is the choice between cardboard and canvas. However, there are still a lot of unanswered questions regarding the artistic process when using a computer. From the research that has been done in this field, no tenable conclusions can yet be drawn.

Digital images

Modifying images by help of computers means creating reality in new images. (Figure 5) More than ever before, the adolescent's world is created by the media. Product aesthetics, music, TV, transmission of information in an entertaining way, new teaching media, computer games etc., cleverly pave the way and lead into an empire of visual realities. It is the media that set the standard. In the everyday life of an adolescent, the difference between empirical and virtual realities loses importance, contrary to pedagogical claims.

Usually, adolescents don't think about all this, they just dive into these virtual worlds. Thus, as long as attempts to explain this phenomenon are based merely upon critical reflection, they can only be partly fruitful. [7]

It is the responsibility of schools, and especially art education, to make students sensitive to this life between the worlds so to speak, the real world

and cyberspace, although there is no clear dividing line between the two. The method of letting students independently discover it as a sort of computer-aided aesthetic experience sounds promising. Transforming images can be an element of analysis because changing the usual perception of an object helps to make students sensitive to the special artistic features of a work – above all to the visual aspects-text elements.

Besides computer games, word processing is the most common usage by students. But beyond this typewriter function, today's word processing software with its wide variety of options, challenges the user to design layout. This ranges from merely arranging an objective text from a functional point of view, to visual poetry. However, with the help of desktop publishing programmes, school computer results can come close to professional graphics design. (Figure 6)

Hyper structures

Within the discipline of visual arts, there is an obvious opportunity to introduce hypertext work in small groups. For example, in small groups, students can work out an interpretation of, or collect material about, a particular work of art. These texts are then fed into a computer, where, in order to optimise them, students carry on working on them, making editorial changes, etc.. Finally, these texts can be connected to a whole network. It is important to emphasize that such a system offers the possibility of continuation from every single angle. For this reason, there is no linear structure as we know it from traditional texts. Production and reception of hyper structures are based on adolescents' encoded patterns of perception which are subject to various influences. For example, the perception pattern of computer fans is very likely to be influenced by adventure games. Hypertexts offer the opportunity to have different texts simultaneously available and to use them as a means of interpretation. It is only a small step from hypertexts to a hyper modality, which means that images and sound are added to the texts. From the view of



cognitive psychology, this procedure helps to develop key skills such as learning, acquiring new knowledge and digesting information.

Animated images

Animation – and there is a certain longing for animated images, widely provoked by music clips – becomes possible with the help of appropriate software. The digital video cut comes close to a video clip as a manipulated and animated image which fascinates adolescents. (Figure 7) Personal or other video recordings, images and sounds from various sources can be blended. Simulating production sharpens the recipient's view. With the right software, it is even possible to create multimedia presentations, combining images, animated sequences and sounds. The network-like structure of hypertext is fed by several media elements. These can range from photographs to reproductions of various works of art, to textual elements such as comments for better understanding, and, where suitable, music.

Far right:
Figure 5
Modifying images
by help of computers

Above right top:
Figure 6
Desktop publishing
programmes

Above right bottom:
Figure 7
A digital video cut
comes close to a
video clip which
fascinates adolescents

However, a high degree of planning and co-ordination skills are needed when creating multimedia sequences. This can lead to Web publishing which need not be limited to a mere presentation of, for example, the school as such, but offer an interactive project on the Net where all are free to participate or give feedback.

My personal experience with the Internet and its integration in art education suggests that asking students to find out about certain artists or architects can challenge them to use the Internet as a source of information. (Figure 8) Compared to books as traditional text sources, information found in the Internet might be less comprehensive. However, images can be printed out and can serve as material in class. Libraries can also be used as a source of information. Unfortunately, libraries still fall back on their catalogues for the most part. There are only a few texts available on the Net.

New and different views of art are developing, and art criticism is playing a major role here. Current exhibitions, recent Net Art, and other events in the arts scene can be easily followed via the Internet, far away from the actual locations. (Figure 9) Net art is broadening the definition of art as such. Art as part of a cross cultural tendency almost requires communicative structures and active recipients. Being active recipients simultaneously promotes motivation. It is certain that a 'Piazza virtualen', as the Italians might call it, goes hand in hand with the development of new forms of mediation within the field of art education. However, virtual experience of this kind can by no means replace looking at original works of art.

All these points are intended to make clear that computers can help to create artificial worlds which open new ways of learning and gaining experience. It would be much more difficult to achieve the same results without these technical tools.

A future art and media pedagogy

Art pedagogy, based for the most part on reality, has to be aware of the immense influence of the New Media and the uncountable doors it opens. In contrast to the metaphorical aspect in the arts,



art pedagogy should capture the immediate character of the New Media. In this context, it becomes possible to see and experience differences. For example, the term 'notebook' nowadays exclusively refers to the small, portable laptop computer as a symbol of the technological avant-garde. In 1992, Claes Oldenburg, an Op-Art artist, created several variations of a torn notebook. (Figure 10) It is different, it is strange, it is an object which stimulates reflection on such term-related concepts. It is the 'irritation' that makes us stop for a moment and reflect, and which finally enables us to open up towards a wider view, a multiperspective. At the same time, it is a source of reflection on techniques of remembering, and the act of writing something down as a traditional technique (of note taking) which is almost considered atavistic.

Art, strongly influenced by the media

As a natural reaction to the progressive technological advance and the increasing influence exerted



by the media on visual worlds, representational painting has regained importance during the past few years. Objects are (re)appearing on canvas as a reply to virtual images. Regarding, this tendency, it will be the responsibility of art pedagogy to put students in a position to experience aesthetic objects, in terms of aesthetic, cognitive and sensuous experiences. However, this experience cannot be restricted to either media images or conventional paintings but needs to integrate the two. [8] Objects, paintings, images, or installations which promise enlightening experience are not so easy to find in the jungle of contemporary art, since there is a tendency towards uniformity.

Uniformity is a consequence of disappearing cultural features. This again is a result of the increasing influence of the media as well as uniform graphics software such as Adobe, Corel, Microsoft, and others. The graphics and image culture focuses exclusively on the global market, whereas national and regional features are hardly taken into account. In a state of mass media dominance, we have to be aware that art as such risks being swallowed by the new media-based aesthetics of communication. Furthermore, we have to be aware of the risk that originality, uniqueness, and the ability to intensively grasp things disappear with these 'oh-so-wonderful' images of the great new computer world. [9] (Figure 11)



Teaching visual competence

By providing the opportunity to view works of art in class, art educators encourage students to develop the ability to express their thoughts and to think critically. Even more so, art education counteracts the effects of trans-national multimedia systems and the tendency to 'cut loose from culture'. There are voices claiming a disappearing bond between art and history as such, but given the immense range of paintings which in terms of content and structure oppose the virtual no man's land of the media, this claim is not valid. The more the New Media create a so-called 'surface aesthetic', the more works of art are challenged to counteract fleetingness and instead reply with intensity and a certain 'slowing down'. It is important to confront this common tendency to triviality in culture with quality standards and the capacity to 'be different' in historic and contemporary art. Media education from the view of art pedagogy should therefore not be restricted to teaching students how to use all the range of

Far right top:
Figure 8
The Internet as a source of information

Far right bottom:
Figure 9
Net art is arriving in the art field: Mark Napier 'Digital Landfill', Screenshot from the home page

Above left top:
Figure 10
Claes Oldenburg
'Torn notebook', 1992

Above right top:
Figure 11
Dieter Huber's 'Klones'

Above right bottom:
Figure 12
Media-created reality makes it necessary to confront students with the real world

technical devices. What is much more important is to teach them how to handle media aesthetics, and this goes hand in hand with the development of valid criteria which will finally enable them to judge critically.

The existence of a second, media-created reality, makes it increasingly necessary to confront students with the real world. (Figure 12) In the Internet, time and space have lost importance. In the real world, however, a certain orientation and stability can only be given in the here-and-now. Viewing originals can serve this purpose to a considerable degree. Art pedagogy processes consciously encourage production and active reception, and in so doing, they oppose a mere passive consumption. In addition, these processes are based upon conceptual ideas, and are not restricted to questions of material and technique, but are expanded and opened to questions of content, interpretation and criticism.

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9. The Austrian photographer, Dieter Huber titles his works 'Klones', referring to the idea of cloning. With help of a computer he blends images. The outcome is bizarre works which resemble shots taken in a genetic laboratory.