INTRODUCTION:

This paper presents a sample of art education experiences that I have been privileged to explore over 40 years. This has involved developing rationales that were required to apply to the new technologies emerging in art education in 1985. My research in this area included media workshops in England, Europe and South America.

The new ‘cultures’ of communication and new technologies in 21st century continue to expand our understanding of both the universe and the diverse ecosystems on our planet. We live in the age of interdisciplinary practice, which provides new opportunities for artists to collaborate with scientists and mathematicians.

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Voyage of Discovery

2. Computers in Art Education

In 1990 the computers used in schools were Acorn Computers using art software Pro Artisan and Revelation. The animation was created with Iota's Complete Animator. The digital art (below) was produced by postgraduates.

Sequence of Eadweard Muybridge photographs digitised and animated into a short sequence. The images were also recoloured.

Innovation - The animation stills (above) shows a student expressing herself changing into a 'cubist portrait.' Below - The 'Found objects' sculpture has been cut and pasted using Pro Artisan into the front of the school.

Many pupils now have access to computer technology of some sort. Technology is increasingly moving into our everyday lives. Supermarkets, garages, hotels and even garden centres use IT in some form. We need to allow pupils more access to learning through IT as it is a medium which many pupils have a great interest.

Postgraduate Student - Self Images - Versions 1-2

In 1990 the computers used in schools were Acorn Computers using art software Pro Artisan and Revelation. The animation was created with Iota's Complete Animator. The digital art (below) was produced by postgraduates.

<table>
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<th>Workshops</th>
<th>Project Aims</th>
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<td><strong>Who do you think you are? Impressions - Brazil</strong></td>
<td>To consider personal identity contextualised, using different media, ICT, and personally significant items.</td>
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<tr>
<td><strong>Voyage of Discovery - Portugal</strong></td>
<td>Responding to the notion of a 'time capsule', groups investigated each other’s past and futures.</td>
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4. Curriculum Workshops – 2002
These practical and theoretical workshops were provided under my stewardship for specialist trainee teachers, at Birmingham School of Art, from 1990 to 2004. The rationale for this initiative was to extend subject knowledge, broaden the associated skill base and exemplify the critical/contextual component that engaged ideas and motivation in art education.

Professor Tom Davies

Multimedia Project - Vapaatila - Helsinki – 2002
Students in Helsinki started the project work by taking photos with disposable pocket cameras to record self-portraits and personal spaces. These images formed the stimulus for the project. This included Image manipulation, an Animation workshop, Video workshops, Observational drawing, a Performance and an installation exhibition.
5. The Electric Studio Archive – 1997 - 2004

At the core of these ICT workshops is a rationale based on the:
Primary Resource - this may be a drawing, painting, print, photograph or
found object.
ICT development - the workshops begin with a collective practical activity.
Extension - further research and development in two or three dimensions.

1997
1998
1999
2000
2001
2002
2003
2004

Electric Studio Images

Timeframe – Mother and daughter digital composition

Data -
1999 - Electric Studio workshops — published in Electric Studio, New Practice in
Between 1997 - 2004 - Electric Studio workshops generated 15,316 files in 1597
folders, produced by 581 postgraduate art and design students.

One project of the European Schoolnet was to introduce a Virtual online school for teachers to share online projects in a global context between 1999 and 2005. Jukka Orava was head of the Art department.

6ii. European Schoolnet - The Creative Use of Media – 2009

In 2009 the implementation of an online European Schoolnet winning course, titled 'The Creative use of Media', involved teachers from 27 member states.

1. Image Reading - Discussing images in Flickr

2. Image Manipulation
   Objective: To consider how images and video can be manipulated to create 'fake' news stories. This begins with teachers browsing through a list of Image manipulation websites, including Youtube, followed by a discussion with group members, using the online message boards.

3. This exercise was to create a web-based newspaper for 1st April 2009, the day on which the task was taking place. The participants were provided with links to CNN Europe, BBC Europe and the New York Times to source their news. The next stage was to design and publish their newspaper online.

These innovative projects were designed and managed by Jukka Orava in Helsinki.
‘Individuals’ training to become practicing artists, designers or craft-workers have opportunities at undergraduate level to exchange the studio environment for a challenging alternative based on interests, concerns and possible future career destinations.

Professor Tom Davies

These innovative projects were managed and supported by Professor Tom Davies.

WORRALL, Peter. Perspectives on Art-Education as an interdisciplinary practice. PÓS:Revista do Programa de Pós-graduação em Artes da EBA/UFMG. v.10, n.20: nov.2020
Disponível em <https://doi.org/10.35699/2237-5864.2020.20724>
8. Interdisciplinary Futures - 2020

**Art + Science Now - Stephen Wilson**

Art + Science Now is a groundbreaking overview of the art being made at the cutting edge of scientific research. The first illustrated book in its field, it shows how some of the world’s most dynamic art is being produced not in museums, galleries, and studios but in the laboratory, where artists probe cultural, philosophical and social questions connected with scientific and technological advances. Featuring the work of around 250 artists from the UK, Germany, France, the Netherlands, the USA, Japan and elsewhere, it presents a broad range of projects, from body art to bioengineering of plants and insects, from music, dance, and computer-controlled video performances to large-scale visual and sound installations. This comprehensive guide to contemporary art inspired or driven by scientific innovation points to intriguing new directions for the visual arts and traces a key strand in 21st century aesthetics.

Published - 2012
Publication - Thames & Hudson

**Beyond the Image Machine - David Tomas**

Beyond the Image Machine is an eloquent Virtual things, it is often believed, are things that only have a simulated existence on a computer, and are therefore not real, like physical things, for an alternative history of scientific and technological imaging systems Drawing on a range of hitherto and marginalised examples from the world of visual representation and the work of key theorists and thinkers or philosophy that use this also to discovery new in astronomy or physic as a party of reality and deviant view of the relationship between archaic and new representations, imagining technologies and mass media induced this to have an a experience and to abandon the transcultural space or real life this liberal mode of nation-building as like a humiliating ... disintegrated, penetrated against the new tech, or abandoned – and are so traumatic and therefore unendurable.

Published - 2004
Publication - Continuum

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Disponível em <https://doi.org/10.35699/2237-5864.2020.20724>
The Last Whole Earth Catalog – Access to tools - Steward Brand
In 1968, Stewart Brand founded the Whole Earth Catalogue. Brand’s goals were to make a variety of tools accessible to newly dispersed counterculture communities, back-to-the-land households, and innovators in the fields of technology, design, and architecture, and to create a community meeting place in print. The catalogue quickly developed into a wide-ranging reference for new living spaces, sustainable design, and experimental media and community practices. After only a few years of publication it exploded in popularity, becoming a formidable cultural phenomenon. The 1968 catalogue divided itself into seven broad sections: - Understanding Whole Systems - Shelter and Land Use - Industry and Craft—Communications - Community - Nomadics - Learning
Published - 1971
Publication -

The Language of New Media - Lev Manovich
In this book Lev Manovich offers the first systematic and rigorous theory of new media. He places new media within the histories of visual and media cultures of the last few centuries. He discusses new media’s reliance on conventions of old media, such as the rectangular frame and mobile camera, and shows how new media works create the illusion of reality, address the viewer, and represent space. He also analyses categories and forms unique to new media, such as interface and database.
Manovich uses concepts from film theory, art history, literary theory, and computer science and also develops new theoretical constructs, such as cultural interface, spatial montage, and cinegratography. The theory and history of cinema play a particularly important role in the book. Among other topics, Manovich discusses parallels between the histories of cinema and of new media, digital cinema, screen and montage in cinema and in new media, and historical ties between avant-garde film and new media.
Published - 2001
Publication - MIT Press

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It’s a privilege to share so many projects.

Pete Worrall - Wholearthmedia