Getting in Synch

Synote is a web-based application that allows users to create synchronised bookmarks or 'Synmarks' that can contain notes and tags synchronised with audio or video recordings and can be used to find and replay parts of the recordings.

Dr Mike Wald, University of Southampton, explains its development and potential uses.
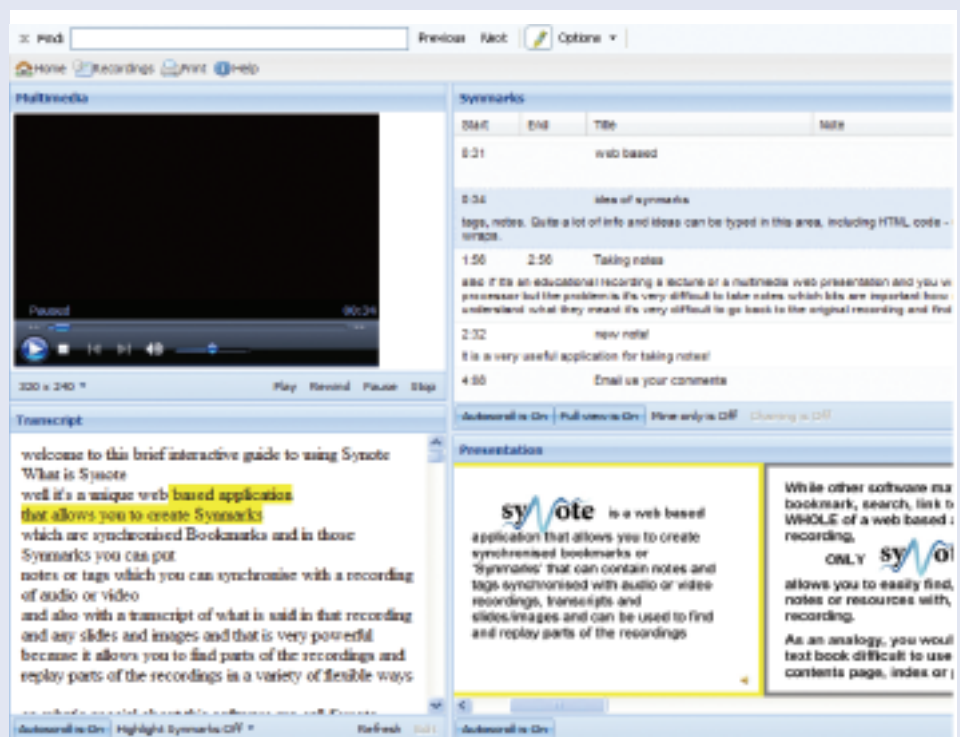
Multimedia for educational use has become technically easier to create (e.g. recording lectures) but while users can easily bookmark, search, tag or link to the whole of a podcast or video, they cannot easily find or associate their notes or resources with *part* of that recording.

This article describes the development of Synote (www.synote.org), a freely available web-based application that makes multimedia web resources available easier to access, search, manage, and exploit. This is true for learners, teachers as well as other users through the creation of notes, bookmarks, tags, links, images and text captions, all of which can be synchronised to any part of the recording. As an analogy, users would clearly find a textbook difficult to use without a contents page, or an index or page numbers. The provision of synchronised text captions and images with audio and video enables all their communication qualities and strengths to be available as required.

Text can reduce the memory demands of spoken language and speech can better express subtle emotions, while images can communicate moods, relationships and complex information holistically. Learners who are hard-of-hearing as well non-native speakers may also be particularly disadvantaged if speech is not captioned. The synchronised bookmarks, containing notes tags and links are called 'Synmarks' and Synchronised Annotations called 'Synnotations'. Synote has been developed with the support of JISC (http://tinyurl.com/2uyxra) and trialed with the support of Net4Voice (http://tinyurl.com/kma8ht).

User studies have established the importance of synchronised text transcripts for searching and reading and the value of being able to personally annotate the recordings and search these annotations. Synote enables learners or teachers to:

- read and search text transcripts and slides and replay recordings and slides

Synote Replay Interface.

to support learning style preference, deafness, disability or English as a second language
- bookmark, tag and highlight sections of recordings/transcripts for indexing, revision, clarification or feedback
- collaboratively annotate recordings with notes and URLs of related resources
- link to or from sections of multimedia

Manual captioning is time consuming and costly and work with IBM and the Liberated Learning Consortium over the past ten years to develop technologies such as *ViaScribe* (http://tinyurl.com/mz72dc) has shown that speech recognition (SR) can automatically create accessible text captions and transcripts synchronised with audio and video that can help enhance both teaching and learning.

Commercially available SR software (e.g. *Dragon, Microsoft*) is unsuitable for transcription of lecture speech as without the dictation of punctuation it produces a continuous unbroken stream of text that is very difficult to read or comprehend; in addition it does not make a synchronised transcript available to the user as the text and speech are only temporarily available in a proprietary synchronised format for correction purposes. Liberated Learning and IBM therefore developed *ViaScribe* as a SR application that automatically formats synchronised real-time text captions from speech with a visual indication of pauses. Detailed feedback from students and lecturers showed that this approach enhanced teaching and learning, if the text transcription was reasonably accurate.

Investigations of existing annotation software have shown the widespread recognition of the importance of annotations. However since no existing technology satisfied all the identified user requirements it was necessary to develop Synote to:
- work with web multimedia and store annotations separately
- synchronise captions, images, tags, links, notes and bookmarks
- enable users to add, and search for, annotations quickly and easily
- support private or shared annotations
- be accessible.

Synote adds to the synchronised multimedia captions, images, and slides demonstrated using *ViaScribe* the facility for users to also create shared tags, notes, bookmarks and links. The system design allows the future incorporation of other specific types of annotation such as audio, video, animations, drawing etc. although this can also be achieved with the current system through linking to external files or embedded videos (e.g. *YouTube*) or presentations (e.g. *SlideShare*).

A tool has also been developed to automatically create Synote synchronised presentations from narrated PowerPoint files and this also creates searchable Synmarks from the slide title, text, notes and timings and can create a synchronised transcript if

annotations and so millions of hours of recordings can be catered for.

The displayed size of the slides and the video can be altered by the user, as can the amount of the screen display used to display the transcript or the Synmarks. A Synmark can have a Title, a note that can contain valid HTML code, tags separated by spaces and an ID of the next Synmarked part of the recording to jump to if required. The start time is automatically entered and is the time in the recording corresponding to when the Synmark was created. If some text in the transcript is selected before creating a Synmark then the corresponding start and end times are entered automatically and the selected text can be highlighted if required. Any part of the Synmark can be sorted

… a user permissions system allows users to specify who can annotate their recordings and read their annotations

this is typed into the *PowerPoint* slide notes. Synote also has a manual editing system for creating synchronised transcriptions and slides when *ViaScribe* or *PowerPoint Narration* with transcription in slide notes is not available; this system allows for both accurate synchronisation by hand or approximate automatic synchronisation. Actual screen displays of Synote are shown below.

A user permissions system allows users to specify who can annotate their recordings and read their annotations. Synote can play most audio and video formats through the use of Media Player and JW Player and it works on both PC and Apple MAC computers and has been tested using Internet Explorer, Firefox, Google Chrome and Safari browsers.

When the recording is played the currently spoken words are shown highlighted in the transcript. Selecting a Synmark, transcript word or Slide/Image moves the recording to the corresponding time. The browser 'Find' facility can be used to search the transcript or Synmarks and more advanced searching of all the information stored on the database is available. Since the audio or video recordings are stored by users on their chosen web accessible space, the Synote server need only store the text

and displayed and users can edit or delete their own Synmarks. Information for the whole time period of the recording or only part of it can be printed and the user can choose to print information for the whole of the recording within this time period or only the Synmarked parts of it and select whose Synmarked parts. The user can also choose whether they want to print the transcript and/or the Presentation Slides/images and/or the Synmarks and select whose Synmarks and which information in the Synmarks.

Initial evaluations with students in classes using both recordings of actual classroom lectures and pre-recorded material have shown that students like using Synote, found the synchronised transcripts and note taking facility useful and want more recordings and lectures to be available in this way. Further planned developments of Synote include the ability to automatically incorporate notes taken in real time in lectures. You can follow the latest developments to Synote on the project blog at: http://blog.lsl.ecs.soton.ac.uk/synote/

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MOVING IMAGE GATEWAY

This section features websites selected from the Moving Image Gateway (www.bufvc.ac.uk/gateway). All sites are tested on an iMac OSX 10.3.9 with a 500 MHz processor, with 10Mbps online connection.

ANIMATION LIBRARY
www.animationlibrary.com/
The site features about 13,748 free animations grouped in eighteen categories for use in presentations or other web media. The site also has a little one-page section on animation tutorials. The one negative was the non-functioning search bar.
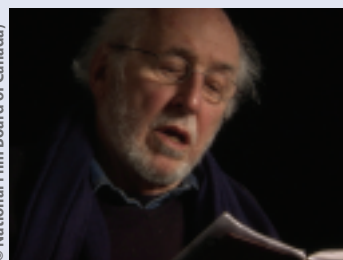
AUDIOBOO
http://audioboo.fm/
Site for the iPhone audio blogging application. Audio recordings with photos attached can be uploaded to the website and linked to webpages and Facebook. Further developments are in development including links to Twitter. Non i-Phone users can post to AudioBoo from any phone by using: http://phoneboo.audioboo.fm

CAPTURING REALITY
http://tinyurl.com/6zdkc2

This highly detailed and impressively well-designed website from the National Film Board of Canada brings together interviews with dozens of filmmakers to discuss the art of the documentary, including such major figures as Nick Broomfield, Malcolm Clarke, Werner Herzog and Kim Longinotto. It can be searched by personality or by subject category (such as editing, sound, genre etc). A model of its kind.

(© National Film Board of Canada)

Still from CAPTURING REALITY: THE ART OF DOCUMENTARY (2008).

EUROPEANA
www.europeana.eu/portal/aboutus.html
Prototype of a website that will launch fully in 2010, providing links to over ten million digital objects (images, texts, sound recordings and videos) from museums, archives, libraries and audio-visual collections throughout the European Unions twenty-seven member states. Europeana is a thematic network, funded by the European Commission under the eContentplus programme, as part of the i2010 policy. The European Commission's goal for Europeana is to enable users to search the digitised collections of Europe's libraries online via this portal. There is a facility to tag items and save searches.

ONLINE CLASSROOM CRIME AND DEVIANCE CHANNEL
http://tinyurl.com/mmk8er
The Crime and Deviance Channel, produced by Online Classroom, has been designed to offer a range of teaching tools (based around four major categories: Text, PowerPoint, Video and Audio resources) that can be integrated into both classroom and VLE-based schemes of work. For an annual subscription of £25 (+VAT) teachers gain access to a wide range of resources designed to bring the topic to life in lively and informative ways. At launch at the beginning of 2009, the Channel contained over one hour of audio and video material tailored to the A2 Specification - with more materials to be added shortly.

TEACHER TRAINING VIDEOS
www.teachertrainingvideos.com/
A collection of over thirty freely available videos produced by Russell Stannard of the University of Westminster with the aim of encouraging and helping teachers and lecturers to use Web 2.0 technologies in their teaching. A range of video productions on ELT teaching are grouped separately, and a linked site (www.multimediatrainingvideos.com) consists of a series of free learning videos giving instruction in how to use more complex multimedia programs like Flash, Director and Photoshop.

A VISION OF BRITAIN THROUGH TIME
http://vision.port.ac.uk/
The Vision of Britain Through Time website, an initiative of the Great Britain Historical GIS (GBH-GIS), is based at the University of Portsmouth. It gives e-access to over two centuries' worth of facts, figures, surveys, maps, election results and travel writing showing how 15,000 UK places have changed. It includes new-to-view historic boundary maps, a land use survey that helped to defeat Hitler, unemployment and wage records, farm surveys from 1866, the biggest e-library of historic British travel writing and the results of every Parliamentary election since 1833. Funded by JISC as part of a programme to offer a wider audience free access to academic research and resources.

ONLINE CATALOGUES

This section features catalogues selected from HERMES (www.bufvc.ac.uk/hermes).

ALPHA FILMS
www.alphafilms.co.uk
Producer of programmes on social issues, made in conjunction with the experts in their field – the Emergency Services, The Home Office, Drug Action Teams, Learning Skill Councils, Charities and Local Education Authorities. Videos are then piloted and the contents, structure and support material adapted to ensure that they are effective. Many of the programmes were originally available on VHS and have recently been combined with other programmes on similar topics and made available for sale as DVD compilations. Topics covered include stress, social and community issues, drug and alcohol problems relating to young people; equality/diversity case studies; learning disabilities; mental health. Preview or sale.

BLAQ OUT
http://tinyurl.com/me6nqm
Blaq Out is a French company publishing and distributing over 1,200 arthouse films on DVD. These include rare and specialised films and classics, both from France and around the world, and cover documentaries, animated features, art DVDs, music videos as well as features. The 'boutique' was established in 2005 for mail order sale of DVDs.

BOULTON-HAWKER
www.boultonhawker.co.uk/cat/about.php
Online catalogue of videos and DVDs for use in teaching at GCSE level and above. Particularly strong in science-based subjects which the company used to produce themselves, but now source from the USA, Canada and Australasia. Catalogue is divided into the subjects areas of: Biology, Careers, Chemistry, Design and Technology, English, Geography, Health Education, Home Economics, ICT, Maths, Media Studies, PE, Sport Studies, Physics and PSHE. Sale and preview.

CHANNEL 4 LEARNING: WEBSHOP
www.4learningshop.co.uk/C4Shop/
Online catalogues giving details of DVDs, CD-ROMs and online resources produced to support subjects across the curriculum in primary and secondary schools. Most of the programmes have been broadcast in the schools slots on Channel 4. Catalogues are also downloadable in PDF format. Sale.

ILLUMINATIONS
http://tinyurl.com/ldwy2c
Illuminations publishes a wide range of DVDs about the arts, including THE EYE (a series of interview-based profiles of contemporary artists working in Britain) and programmes made alongside major exhibitions and with major institutions such as the Tate and the National Portrait Gallery.

The 2008 catalogue is twenty-four pages long and is available in print and as in PDF format and features STATE OF THE ART, a series of six 50-minute documentaries about the visual arts in the 1980s. Originally broadcast on Channel 4 and internationally, the series is complemented on the DVD with a specially filmed interview with the writer of the series, Sandy Nairne. Two further new series are ARCHITECTURES and ART LIVES. Illuminations has also recently taken on DVD distribution of titles from ARTE and ARTHAUS MUSIK. Sale.

THE MERIDIAN TRUST
www.meridian-trust.org
A collection of 200 titles on video and DVD on all aspects of Buddhism and the Tibetan situation, including teachings, documentaries and films. You can order online, by post, fax or telephone. The catalogue is divided into sections on: Broadcast Films; Buddhist Teachings; Documentaries; Interviews; Politics; Public Talks; Tibetan Culture; Western Buddhism. Sale.
N.B. Meridian also has an archive of films footage on Tibetan Buddhism and culture containing thousands of hours of footage.

PLANETARIUM, ARMAGH
www.astrosales.biz/
DVDs, videos, slides sets and other educational materials on the earth, space and astronomy, including material from NASA. Sale only.

ONLINE SUBJECT NEWS

Online Subject News is a round-up of new online material selected from HERMES (www.bufvc.ac.uk/hermes) for its potential value and use in Higher and Further Education).

ARCHITECTURE

THOUGHTS ON THE DESIGN OF CITIES AND BUILDINGS

Video recording of the 2008 RSA Bossom Lecture on architecture given by Richard Rogers. (50 minutes)
Available free online.
Streamed / Download from:
http://www.thersa.org/events/vision/vision-videos/richard-rogers Requires: WMP.
RSA

BIOLOGY

IS HUMAN EVOLUTION OVER?

Steve Jones argues that, given what we know about the Darwinian processes of natural selection and random change in our own species, adaptive evolution is – for the time being, and at least in the developed world – more or less over. (63 minutes)
Available free online.
Streamed / Download from:
http://tinyurl.com/adsnb
University of Cambridge, Darwin College

BUSINESS STUDIES

BRAND ENGAGEMENT STUDY

This study examines the role of the internet in generating brand engagement. The research concentrated on five advertising campaigns from the supermini car sector - Renault Clio, Toyota Aygo, Nissan Micra, Ford Fiesta and Mini - and looked into the effectiveness of online against other media. (6 minutes)
Available free online.
Streamed from:
http://tinyurl.com/m6n4m4
Requires: Flash.
Internet Advertising Bureau

EVOLUTIONARY FORCES IN 21ST-CENTURY PUBLISHING

Audio recording of a talk given by Alison Jones, Director of Digital Development at Palgrave Macmillan, in February 2009 subtitled, 'mutation, migration and natural selection'. Can publishers evolve to survive in the new information landscape, and what challenges and opportunities do they face?
Available free online.
Streamed Download from:
http://tinyurl.com/nsqsua
Requires: Flash / MP3.
Oxford Brookes University,
Ah! Podcasts

ECONOMICS

MEN AND MONEY

Financial man is laid bare in this series from 1964 exploring how the City of London's great institutions operated in the days before the markets went global.
Available free online.
Streamed from:
www.bbc.co.uk/archive/menandmoney/
Requires: Flash.
BBC Archive

ENVIRONMENTAL SCIENCE

WASTE MANAGEMENT

This album considers the policy and legislation that is driving waste management processes across the EU. By modelling the overall environmental impacts of solid waste disposal methods, the UK government has now created a hierarchy of waste and local management strategies.

The twelve video tracks in this album offer an in depth look at each of these processes, concentrating on waste collection, recycling, composting, energy recovery and landfill.
(T308 Environmental Monitoring, Modelling and Control course)
Available free online.
Streamed / Download from:
http://tinyurl.com/nlbu4o
Requires: Flash.
Open University on iTunesU

GEOGRAPHY

TOWARDS LEFEBVRIAN SOCIO-NATURE?

An online article by James Evans and Phil Jones. The film is presented with discussion led by different talking heads, shots from a variety of locations and rhythmic diagrams that are used to emphasise the points that are made in the article.

The text represents the shooting script for a film that explores Lefebvre's notion of rhythmanalysis in the context of socio-natural rhythms. The video accompanying it questions the nature of scientific representation and whether the notion of rhythmanalysis can be stretched to explore rhythms beyond the human.
Available free online.
Streamed from:
http://tinyurl.com/mad6vv
Requires: Flash.
Blackwell Compass

HISTORY

THE MINERS' STRIKE: TWENTY YEARS ON

The Miners' Strike arouses debate like few other contemporary political events. The anniversary re-opened old divisions, with arguments still raging around the miners' leadership, the motives of the Conservative government and the position adopted by Neil Kinnock's Labour Party. Those taking part were: Dr Hywel Francis MP; Professor David Howell, York University; David Hencke, The Guardian; Tyrone O'Sullivan, Tower Colliery; Michael Crick, BBC Newsnight (Chair).
(Thinking on Thursday series)
Available online
Streaming from:
www.ippr.org/events/?id=3439
Requires: QuickTime.
Institute for Public Policy Research

INFORMATION TECHNOLOGY

GREEN ICT FOR FURTHER AND HIGHER EDUCATION

In this podcast Rebecca O'Brien from JISC talks with Peter James, Professor of Environmental Management at the University of Bradford and head of the JISC-funded SusteIT project, about the recently published Green ICT report. In the interview Prof Peter James talks through how further and higher education institutions can make small changes to save money and reduce their carbon footprint. (8 minutes)
Available free online.
Streamed from:
http://tinyurl.com/ktryt7x
Requires: MP3.
JISC

LAW

INTERNET: PIRATES UNDER ATTACK

A television debate on the controversial French Creation and Content Bill to disconnect people caught downloading content illegally. Broadcast on France 24 on 10 March 2009, the day before it went before the National Assembly for the first time. The bill, which was supported by President Sarkozy as well as the film and record industries, proposed a three-stage system under which a new state agency would first send illegal file-sharers a warning e-mail, then a letter, and finally cut off their connection for a year if they were caught a third time.

Available free online.
Streamed from:
http://tinyurl.com/lagde7
Requires: Flash.
France 24

MATHEMATICS

PROOF-READING

Video recording of Mark Haddon discussing the art/science interface with Marcus du Sautoy. They discuss: How does doing mathematics and writing stories compare? What role is mathematics playing when it is used in literature? Are stories important to understanding mathematics? Do writers have eureka moments?
Available free online.
Streamed from:
http://tinyurl.com/5mavfr
Requires: WMP / Real.
Royal Society

MEDIA STUDIES

BOB VIDEO FOR CEMP

A 3-minute video, produced within the Centre for Excellence in Media Practice at Bournemouth University, on the use of BoB (Box of Broadcasts) for making and archiving digital recordings of television programmes for use in teaching and research.

bob box of broadcasts

Available free online.
Streamed from:
www.youtube.com/watch?v=5rmfWkx06bU
Requires: Flash.
YouTube

PHYSICS

THE PHYSICS OF THE IMPOSSIBLE

Video recording of a lecture on the physics of the impossible given by Michio Kaku at the RSA on 28 May 2009, based on his book of the same title. In it he explores the possibility of phenomena such as death rays, force fields, teleportation and invisibility cloaks—revealing to what extent such technologies might be achievable decades or millennia in the future. (23 minutes)
Available free online.
Streamed / Download from:
http://tinyurl.com/nk6enr
Requires: WMP.