

# Applications



**Tim Klapdor**  
Innovation Technology Officer  
& mLearn Project Manager  
Strategic Learning &  
Teaching Innovation  
Charles Sturt University

## Standing on the shoulders of giants: Improving existing systems with HTML5

The transition from desktop to mobile is moving at a startling pace and offers an insight into the multi-screen universe we are rapidly heading towards. HTML5 is the platform to prepare for this future and improve our current systems to allow us to make use of existing infrastructure, resources, content and services to reduce costs and turnaround time. Taking systems built for desktop to mobile requires more than a few tweaks and provides an opportunity to rethink and improve the user experience.

This presentation will investigate how Charles Sturt University, through their mLearn Project, has been working on designing and developing key systems for mobile access via HTML5. It will reflect on this learning experience that has CSU a chance to reboot existing applications and develop new designs for interaction, navigation, access and usability.



**Neil Martin and  
Dr Helen Farley**  
Australian Digital Futures  
Institute, University of  
Southern Queensland

## HTML5: New opportunities, old threats

HTML5 is an evolving web technology that offers new opportunities in the creation of interactive learning experiences through web applications, mobile apps and eBooks. Emerging standards such as Canvas, SVG, JavaScript, and CSS3 can offer truly immersive experiences including mobile audio and video, educational gaming, touch interface and interactive animations and charts.

This presentation will review these possibilities, with reference to poor user interface design in the late 1990s and early 2000s. Since then, some great work has taken place within the web development community to adopt web standards and follow good practice in both accessibility and usability.

As with any new tool there is a temptation for developers of educational content to employ these tools because “they look cool” rather than think about both the learning context and user experience. In the mobile paradigm where screen “real estate” is limited, this is particularly pertinent. This presentation recommends that designers of educational resources, who wish to use HTML5, follow examples of good practice in user experience design to avoid some of the mistakes made in the past.



**John Zornig**  
Senior Architect  
Centre for Educational  
Innovation and Technology  
The University of Queensland

## HTML5 video in the eLearning context

Video Capture of Practice (VCoP) is an ongoing project at the Centre for Educational Innovation and Technology at the University of Queensland. The premise of VCoP is that video in eLearning may originate from both the teaching staff and the students and can be used for both instruction, practice and assessment. To do this it must be easily uploadable, viewable cross-platform and on mobile devices, and should be annotatable and able to be easily cross-linked.

The VCoP system processes video into the standards required for cross-platform HTML5 display. Teaching staff select videos to highlight and add timecode sequenced annotations. The website allows for easy navigation of annotated videos including the ability to link within an annotation directly to a specific timecode within another video. It does this by using in-browser javascript to facilitate navigation within and between videos. This system has been used extensively in the electronic Clinical Assessment of Practical Skills program in Medicine and Human Movement Studies, where students create video of themselves demonstrating the skills they are expected to master.



<header>  
<h1> Exploring New Dimensions: HTML5 in Higher Education </h1>  
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USQ Toowoomba Campus | R Block Room 113 | University of Southern Queensland

Monday, 19 November 2012

TIME	ACTIVITY
From 5pm	Registration
5.30pm	Drinks and nibbles
6.30pm	Welcome and housekeeping
6.45pm—7.30pm	1st Keynote address/demonstration: Phil Whitehouse DT Digital

Tuesday, 20 November 2012

TIME	ACTIVITY
8.30am	Tea/Coffee arrival
8.45am	Housekeeping and overview of the days proceedings
9.00am	2nd Keynote address/demonstration: Francis Kneebone
10.00am	Morning tea
10.30am	Session 1: HTML5 mobile
12.00pm	Lunch
12.45pm	Session 2: HTML5 practical applications
2.45pm	Afternoon tea
3.00pm	Facilitated concluding activity (The way forward)
4.00pm	Close

Program

Hosted by

USQ Office of the Pro Vice-Chancellor (Learning, Teaching & Quality)

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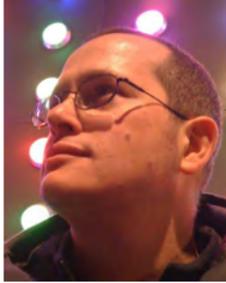


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## Keynote



**Phil Whitehouse**  
General Manager, DR  
Digital, Sydney

### The bigger context

We live in interesting times! Never before has so much power been placed in the hands of so many people with such low barriers to participation and distribution. And, thanks to the emergence of new technologies such as HTML5, the potential for doing good is increasing.

But while embracing HTML5 presents many exciting opportunities, there are also pitfalls to avoid. As digital practitioners, we have a responsibility to our end users, to make sure their needs and goals are put at the heart of a collaborative design process.

With 15 years experience creating digital experiences, Phil will bring this design process to life by illustrating how it works at some of the largest and most creative organisations in the world. The takeaway will be a series of techniques and lessons learned that can be applied straight away, to ensure that the use of HTML5 always takes account of the bigger context - helping students to learn.



**Francis Kneebone**  
Partner, Consultant and  
Trainer,  
V2Training, Brisbane

### Mobile First: Are you responsive?

'HTML5' is not just an alternative technology to 'Flash' but is a family of new and emerging standards including HTML5, CSS3, SVG and other technologies that bring exciting new possibilities but also a fork in the road for many education providers. This presentation will explain the unique benefits to the education sector that the *Semantics, Interoperability* and *Power* of HTML5 brings. The presentation will begin by explaining, for the new comer, the big picture of HTML5 and its history, evolution and future direction.

Francis will then demonstrate an approach to online education that embraces the principles of *Mobile First, Responsive Design, Progressive Enhancement* and Interoperability for multi-device environments. As well as freely available templates and design tools participants will learn techniques for adapting existing content for HTML5 standards including the use of CSS @media queries, SVG and CSS3 element design and adding semantic structure to HTML.

There are many challenges to organisations transitioning to the new HTML5 standards including keeping in line with Web Accessibility standards, providing fallback code and techniques for 'legacy' browsers and changing from a computer-lab to a bring your own device (BYOD) mentality to E-learning design and development. Taking your E-learning forward while maintaining broad access to your programs takes some creativity, patience and certainly an understanding of what HTML5 brings to the table.

## Mobile



**Julian Davis**  
Educational Designer  
Innovation and Technology  
Enhanced Learning unit  
TAFE NSW South Western  
Sydney Institute (SWSI)

### Developing native apps using HTML5 and Phone Gap

In 2011, TAFE NSW South Western Sydney Institute (SWSI) developed a concept to build an application for maintaining relationships between TAFE and Industry. The project originally involved a simple website. After consultation we were able to extend the capabilities of the project beyond a website, taking the application to mobile devices, both natively and browser all based in HTML5.

Employing PhoneGap with HTML5, CSS3 and JQueryMobile, I developed an app that ran on both iPhones and iPads, all without any knowledge of the complicated Objective-C language.

The presentation will cover how the application was designed, an overview of PhoneGap working in Xcode for iOS with HTML5, CSS3 and JQueryMobile and some of the issues you will need to watch out for including complying with the extensive Apple Development Guidelines!

## Mobile

### Moving away from Flash: Responding to new eLearning environments with HTML5 and jQuery

eLearning developers have traditionally relied on Adobe's Flash player to deliver interactive learning activities and content. However this dependence is slowly changing as learners are increasingly moving towards mobile devices that largely do not support the Flash player. HTML5, CSS3 and jQuery have played a key role in this transition to mobile. More and more developers are now using these tools instead of Flash to deliver interactive content across multiple platforms such as desktop computers, mobile phones and tablets.

This presentation will showcase a learning resource developed for the Queensland Centre of Mental Health Learning, which uses HTML5, CSS3 and jQuery to ensure compatibility with mobile devices. The learning resource is a component of an on-line course that addresses compliance requirements of the Queensland Mental Health Act 2000.



**Sarah Bock**  
Senior developer at  
eLearn Australia

### HTML5: The future of mobile app development?

HTML5 has long been taunted as the future for cross-platform mobile app development. Even today, it is still seen as the *eventual* solution to the 'write once, run anywhere' goal. Unfortunately it seems that the future is not now, when it comes to HTML5 and mobile app development.

In this presentation we look at different frameworks that are pushing the envelope and discuss where they need to go to gain the upper hand. We'll look primarily at technical issues such as virtualisation and support for multiple resolutions, but won't neglect the commercial issues at stake.

We also present the CSC8420 Mobile Systems course that is taught at USQ as an ongoing experiment in teaching state-of-the-art technologies without having to re-develop all aspects of the course every year. We'll showcase some promising apps that have been developed by students this past semester.



**A/Prof Stijn Dekeyser**  
Maths & Computing, Faculty  
of Sciences, University of  
Southern Queensland  
Vice chair QSITE Toowoomba

## Applications

### Enlivening teaching material with JavaScript 'Jollies'

For many years JavaScript has been used to animate real-time simulations, such as the plotting of graphs. One of the more significant recent developments has been the introduction of the 'Canvas' object in HTML5. Previously it was necessary to embed an applet in the web page, to be used as a 'whiteboard' on which graphs could be plotted. But now, with Scalable Vector Graphics (SVG) it is possible to rotate and skew images and indeed to reconstruct them on the fly.

A further advance in HTML5 is the availability of an 'event' at the end of playing an audio file. This opens the way to presenting narrated pages, much in the style of PowerPoint and Impress, but with minimal file sizes and rendering engines. Thus simulations such as robot arms and articulated mechanisms can easily be added to the repertoire. 'Canvas' is still far from perfect; nevertheless the potential is enormous for exploiting all these advances to make teaching material excitingly interactive.



**Prof John Billingsley**  
Faculty of Engineering and  
Surveying  
University of Southern  
Queensland