Website to App: learning in your pocket
Site para App: aprendizagem em seu bolso

Scott Heath
Instructional Design Coordinator
Transfusion Medicine Education Program
scott_heath@bonfils.org

Daniel Ambruso, MD
Medical Director for Research and Education
Bonfils Blood Center
United States
daniel_ambruso@bonfils.org

Abstract: In addition to new structures and elements within web pages, HTML5 offers the potential to create free-standing apps that run on smart phones or tablets (iPod, iPhone, Android devices). Instructional Designers are always challenged to find ways to engage learners in their chosen domain. The mobile web is one path that HTML5 is opening to non-technical individuals. Using only the skills needed to create a website, educators can now create web pages with enhanced interactivity, personalization, and convenience, which can also be made into apps (portable programs) that run on a learner’s smart phone or tablet. A hypertext presentation of clinical case-based scenarios serves as the example web-based instructional simulation for this exploration of the new HTML5 features and the potential for the mobile web in education.

INTRODUCTION

The term “Mobile Web” refers to web-based material that can be accessed from devices considered to be mobile, such as smart phones or tablets. Since a web browser is part of any such product, any website developed for instructional purposes can be easily adapted to run as an app on such a mobile device. This paper explores the reasons and methods for doing this, as well as the tools and complications of the process.

BACKGROUND

An instructional environment that can provide interaction with subject matter can provide the mechanisms of active learning, leading to more effective instructional interactions (JOBE, n.d.-a). The set of additions and enhancements that have recently become part of HTML are ideal for the creation of such web-based environments (JOBE, 2011-b).

As new capabilities are added to the web-page palette, designers can use any of several tools to check on which browsers can support which of these new features (DEVERIA, n.d.).
Since 1990, Bonfils Blood Center in Denver, Colorado has been implementing hypertext-based instructional simulations covering topics in Transfusion Medicine (Heath, Higgs, & Ambruso, 2008). Since 2000, these have been translated into HTML and offered from our website (www.bonfils.org/courseware/).

Currently, one of the four existing modules has been edited into XHTML form, and HTML5 features are being incorporated wherever possible.
In the field of Medical Education, growing interest has been shown in both constructivist approaches and distance learning (WALSH et al., 2011). Comparisons of various forms of computer-mediated instructional presentations have shown the utility of these approaches, especially in ill-defined, complex domains (CHARLIN & VAN DER VLEUTEN, 2004).

ENTER HTML5

Several capabilities have been added to the programming language that provides the appearance and behavior of web pages. These added capabilities have been labeled ‘HTML5’.

Although 5.0 is not an official designation, it has been so long since HTML 4.1 became an official standard that everything to come along since has been unofficially dubbed HTML5 (LAWSON & SHARP, 2012).

INSTRUCTIONAL DESIGN AND THE MOBILE WEB

A clearly marked path now exists for instructional materials designers to develop material for the web as well as for use in mobile devices (NIXON, 2011). The mobile device environment, however, includes a host of constraints and complications that the designer must deal with (MAXWELL et al., 2011)
THE APPMOBI FRAMEWORK

Several commercial-level application development and deployment systems have become available just in the last few months. One is being made available at no charge under the name appMobi XDK (appMobi, 2011). The XDK stands for Cross-platform Development Kit, with support for iOS and Android for now, although Blackberry and Windows have come up in their forums.

Figure 3: Mobile App design constraints

Figure 4: The AppMobi XDK editor.
MINIMAL FRAMEWORKS: GOOGLE ECLIPSE AND APPLE XCODE

The dominant programming environments for mobile devices are Apple’s iOS (iPod, iPhone, and iPad) and Google’s Android. These two require their own development environments: Apple’s Xcode and Google’s Android SDK.

CONCLUSIONS

New capabilities added to HTML support longstanding instructional design approaches, and many current mobile devices can use HTML5 websites. Support systems are becoming available that can allow nonprofessionals to create mobile-device stand-alone apps. Designing those websites for use on mobile devices requires some design modification, both in terms of physical limits (screen size, interface options, etc.) and situational (in noisy rooms, outdoors, etc.).
REFERENCES


DEVEREA, A. (n.d.). When can I use... Support tables for HTML5, CSS3, etc. Retrieved from http://www.caniuse.com


