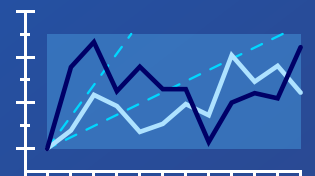
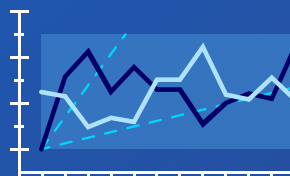
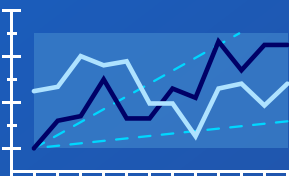


# 158 TIPS ON mLEARNING: FROM PLANNING TO IMPLEMENTATION



THE E-LEARNING  
**GUILD**



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# Introduction

Dear Colleagues,

It's been almost a year since *The eLearning Guild* published its last mLearning eBook, ***61 Tips on Making Learning Mobile***. Since then, it seems like everything has changed in the mobile world: Smartphone and tablet adoption has skyrocketed, users have discovered unexpected ways of using their mobile devices, and many organizations have moved from thinking about mLearning to actual development and implementation. Last year, the big question was "Should we do mLearning?" This year, the question is "*How should we do mLearning?*"

In the process of developing and implementing mLearning, many learning professionals have discovered what works and what doesn't. The good news is that many of the skills necessary for creating excellent eLearning have also proven valuable for creating excellent mLearning, but there are new skills we need to develop, too.

We've captured some of the most current knowledge on mLearning by asking 23 practitioners and experts to share what they've learned in their various mLearning journeys. They responded with the 158 tips you'll find in this eBook. We've grouped these tips into 11 categories, each looking at a different angle of mLearning. They are: Selling mLearning to stakeholders, managing mLearning projects, analyzing learners' mLearning needs and preferences, designing for mobile, selecting and using mLearning tools and platforms, working with mLearning media, migrating and managing mLearning content, using mobile for performance support, delivering mLearning, measuring mLearning success, and prospering in a multi-device world.

I hope you find some valuable nuggets of information in this eBook, and are able to use many of these tips to help you create great mLearning!

Sincerely,

Chris Benz

*Director of Online Events, The eLearning Guild*

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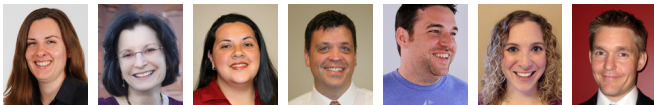
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- Don't Build an App, Create an Experience—Mobile Training that Really Works
- Show Me How mLearning Is Done: Nine Case Studies
- From Principle to Pragmatics: mLearning Success by Design
- Mobile and Performance Support: A Perfect Match?
- Building mLearning for the Competency-based Learning Experience
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## Twelve Tips for Selling mLearning to Stakeholders

If your stakeholders aren't on board, your program is missing its business foundation. Are they skeptical about mobile? Do you have a review system planned that will allow your stakeholders to try the material? And have you actually identified all the possible stakeholders? Our experts offer their tips on getting stakeholder buy-in.

---

Stakeholders evaluate business initiatives by separating long-term, tangible components from operational activities. They call long-term, tangible elements “capital investments” or “capital costs” whereas short-term elements are “operational expenses.” Recognizing the difference will help you better position your mLearning/eLearning initiatives for business evaluation by stakeholders. For mLearning/eLearning, stakeholders must be able to differentiate the long-term elements from operational learning expenses.

For any mLearning/eLearning initiative, capital investments are typically technology, equipment, infrastructure, and possibly long-term support and/or development requirements. Management considers these elements “capitalized” because they contribute to the organization's long-term growth. This is a good thing, since it helps alleviate the burden of the initial large cash outlay and spreads it out over many years (called “amortization”). In the short term, this allows you to accurately reflect the actual worth of the mLearning/eLearning initiative. Work closely with your leadership and internal financial professionals to determine the capital elements of your mLearning/eLearning initiative to reflect the true business value it contributes to the organization over the long term and demonstrate the real short-term viability. Contact me and I will provide you with Excel tools that will help you apply these tools to your learning efforts.

*Ajay M. Pangarkar*

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Make sure you identify *all* of your stakeholders and get their buy-in as early as possible.

*Imogen Casebourne*

Help your stakeholders realize that they *are* using mobile devices to make themselves more effective. Then you have a basis to shift their perception to understanding that mobile opportunities exist to benefit the business.

*Clark Quinn*

It's much easier to sell stakeholders on the effectiveness of mLearning if your target population uses a similar smartphone platform, or a similar tablet platform. If users employ a variety of devices, you'll have higher costs of design and higher costs of support.

*Dick Carlson*

When developing an app, ensure you have catered for stakeholder reviews. With heavy restrictions on app installation, it's essential to have a clear review-and-testing strategy that enables clients to access the app.

*Imogen Casebourne*

For most barriers you may consider, there are likely existing solutions.

*Clark Quinn*

For every business (even nonprofit ones) the appropriate allocation of limited financial resources is constantly on the minds of stakeholders. Even though you have an innovative mLearning/eLearning solution, how you convince stakeholders of its financial viability will ultimately decide its fate. There are two rules to follow:

- *Think* like your stakeholders. Stop defending the costs for your learning initiatives. Rather, build a case to show how your mLearning/eLearning initiative will contribute to financial benefits for a business objective. This is how stakeholders evaluate many financial investments for key business decisions and it's no different for mLearning/eLearning initiatives.
- *Address* the real "ROI" for learning and "treatment" of mLearning/eLearning. The training ROI methodology is fraught with misinformation, is ineffective, and is not used to evaluate expenses (like training) and intangible outcomes.

Recognize that stakeholders see any learning effort as a component of a larger business initiative. So, incorporate the same financial evaluation tools used by stakeholders and internal financial professionals (such as contribution-margin

analysis and net present value) to validate the mLearning/eLearning initiative within the context of the larger business investment. Contact me and I will provide you with Excel tools that will help you apply these tools to your learning efforts.

*Ajay M. Pangarkar*

Be clear on why you believe launching a mobile initiative will improve performance.

*Imogen Casebourne*

Don't sell cost savings; instead, sell improved outcomes.

*Clark Quinn*

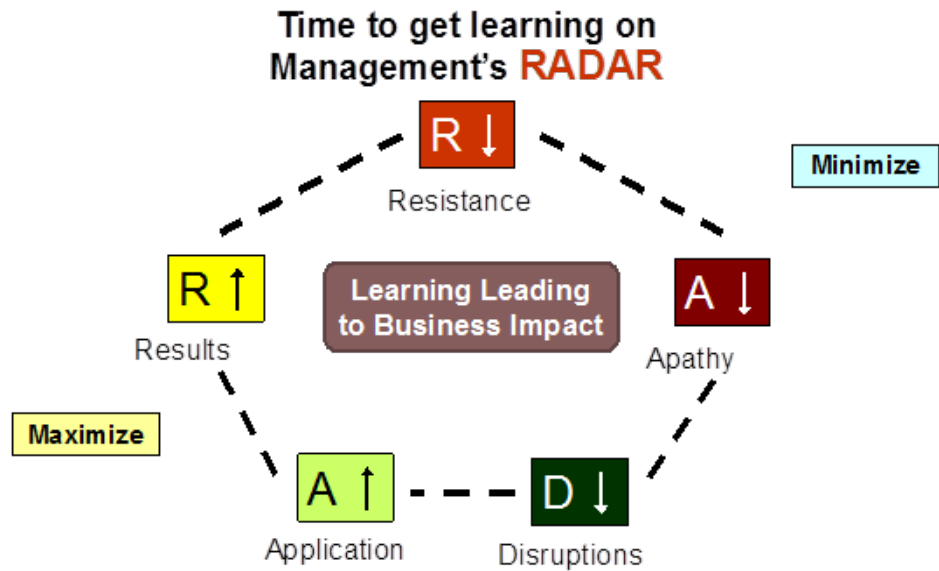
Get on management's RADAR! The challenge: Get leadership to recognize the relevance of mLearning/eLearning initiatives. Through this tip, you need to get on management's R-A-D-A-R. First, minimize the following:

- **R—RESISTANCE:** Provide what management and participants expect, not what you believe they need. Focus on what every level of stakeholder requires apart from the skills. For example, senior management wants performance improvement, business unit managers want quick results and immediate application, and employees expect some tangible value to their job.
- **A—APATHY:** Over the years, workplace learning has not delivered tangible business results and people often perceive it as a waste of time. Your biggest challenge is to demonstrate that mLearning and eLearning initiatives are worth the investment and can deliver on expectations.
- **D—DISRUPTIONS:** This is simple to prove with mLearning and eLearning initiatives. All levels of stakeholders recognize that the promise of delivering learning through mobile and electronic mediums will minimize work disruption and downtime.

Next, maximize:

- **A—APPLICATION:** mLearning and eLearning tools allow for more interactive learning. Ensure that users are able to apply what they've learned leveraging the power of mLearning/eLearning technology.
- **R—RESULTS:** Prove results. Use mLearning and eLearning technologies to develop focused data analytics. Demonstrate metrics around actual skills application (level three) tied to actual business metrics (level four).





Use this diagram to help you retain the RADAR concept.

*Ajay M. Pangarkar*

Put your faith in research. If literature points to success, express and emulate that success. When properly presented, mLearning sells itself. Some of the most strident stakeholders will come around when you build a proper foundation on research.

*Alexander R. Corris*

First, tie your project to a business metric.

*Clark Quinn*

## Six Tips for Managing mLearning Projects

Keeping a tight hand on the reins of an mLearning project can prevent myriad problems, including missed deadlines, budget overruns, and poor deliverables. Our experts offer six points to help you successfully manage any mLearning project.

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Incorporate safety nets when devising your plan. It's not about being perfect, but rather about being strategic and thoughtful. Remember, the best learning opportunities may come in the form of mistakes and hindsight.

*Megan McKee*

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Keep the team small and agile, especially for a first project. Nothing attracts a crowd like a crowd, or a hot new device. You shouldn't invite sightseers who have no financial stake in the project. They can always partake in the post-launch use or even assist in post-launch measurement or assessment, but the inclusion of more project personnel only inflates the visibility on the project's budget and encourages analysis paralysis.

*Chad Udell*

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Always, always run a pilot before deploying. Ensure your pilot audience is as close to the real thing as possible. Ask them to provide as much feedback as possible. This is vital to a successful go-live.

*Megan McKee*

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Start lean and iterate. You don't need to launch a perfect app for your first version. Start with a minimum viable product and go from there. Get user feedback, and grow your feature set based on the response you get from people actively using your experience. Combine this with analytics and you have a powerful one-two punch in understanding what people expect from you. The most important thing you can do is ship your software. Don't let unnecessary features hold up launch dates.

*Chad Udell*

Recognize that mobile is a platform, and plan accordingly.

Clark Quinn

Ensure your IT folks are in the loop with your mobile learning interventions. There may be many back-end needs that are out of your hands. It's also nice to have a contact when you're in a pinch!

Megan McKee



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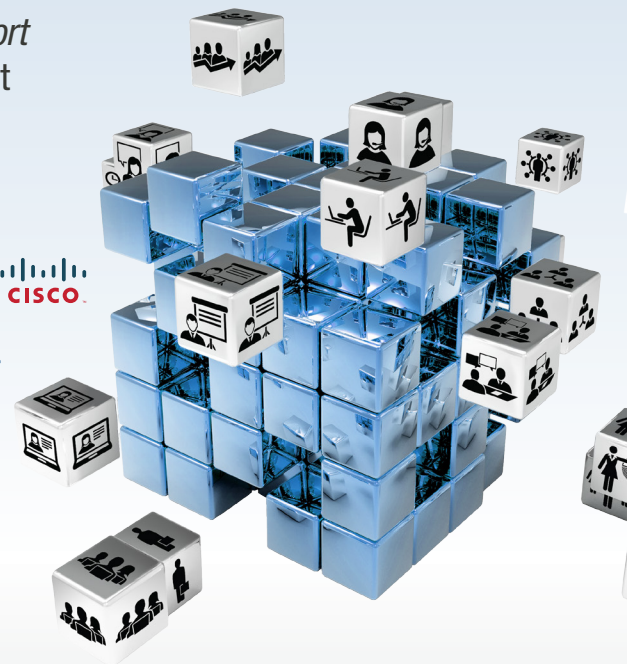
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## Fifteen Tips for Analyzing Learners' mLearning Needs and Preferences

Put yourself in your learners' shoes: Are they already using mobile devices? How will they use them with your project? Will their environment allow them to use a touchscreen or hear instructions? To increase your mLearning project's chances of success, determine what your learners need and how they want it, then design accordingly.

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Always ask questions and observe. Don't be afraid of research because you assume it's expensive and complex. You can get surprising amounts of useful information by simply watching end users in their natural environment, or carefully asking questions about how they work and what they do. If you aren't used to research, don't directly ask what they want—and avoid focus groups because people don't consciously know what they want and the group dynamic is hard to handle and influences the results. Do show off your design ideas as early as you can. People will suspend their disbelief and act like your paper sketch—or a mockup on the phone—is real, and react in telling ways.

*Steven Hooper*

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Your salespeople will get it. Don't worry if they aren't "iPad users" already. Mobile apps, when designed well, are dead simple to use. Two-to-three-click hierarchies are common, with a simple gestural input (e.g., a swipe or pinch zoom) often being used to great effect to reduce those click tracks even further. You'll hear things like: "Before getting an iPad, I never thought I'd get it. Wow, was I wrong. This is so easy."

*Chad Udell*

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Two fields that are about to converge are mobile computing and adaptive-learning software. Companies will use "big data" collected from massive numbers of learners to predict the kind of learning materials a specific learner needs to see next, and what kind of activities and assessments will advance learning based on the learner's characteristics and responses.

*Gary Woodill*

Don't forget that needs and preferences will fall into several categories: Ask which devices learners prefer to use; when, where, and for how long they want to engage with mLearning; and what sort of support they are looking for.

*Imogen Casebourne*

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You might need to play matchmaker! Matching the device to the learner can be tricky. Do your homework regarding your audience analysis. There is a right time and right place for mobile learning; don't force it.

*Megan McKee*

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Put yourselves in your learner's shoes. Determine the tasks they perform on a daily basis. You can learn a lot by surveying them at large, but you can learn even more by watching them in the wild. Take notes on how they work and their behavior with mobile devices. Try to create a solution that fits those behaviors rather than asking learners to adopt new ones.

*Lauren Bonnet and Ben Bonnet*

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Consider the context in which your users work. Not just the default answer that mobile is active, but very specifically. If users are on the factory floor, or in a repair shop, are their hands too greasy for reliable touch, or is it too loud for mobile sound to work? A good way to think about this is to consider accessibility needs; we all become "temporarily disabled" when we can't touch, look at, or otherwise use our devices normally. Then you can use existing knowledge and technologies to meet the real needs of your actual users.

*Steven Hooper*

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When designing for multiple devices, think "intelligent responsive." Consider options such as simplifying content when needed and adding extra content when it makes sense, changing what is displayed or how it is displayed depending on the accessing device, and you'll produce training that is effective and impactful no matter how it is accessed.

*Paul Schneider*

Streamline the design process with a custom roadmap that reflects the learner landscape in your organization. Use Google Analytics or internal tools to identify the devices and software you need to support. Identify all the platforms available (and allowed by policy) for mobile deployment in your organization. This might be an LMS with mobile capabilities and a proprietary app, internal or external web servers, or a company app store. Identify the learners, the context, and their needs. Use your data to customize a design-decision tree for your organization. ADL's "Mobile Learning Decision Path" is a great place to start.

*Candice Herndon*

Context and environment will dictate the screen size a student will use. Perform a detailed audience analysis to get a better understanding of how your students use their devices. This will drive your instructional strategy and learning-content production.

*Josh Cavalier*

When you are starting a mobile project, make sure you analyze your audience extremely well up front. You're likely going to design and develop your project very differently for a group of 20- to 30-something males, for example, than for a mixed group of office workers. A project we worked on that was destined for use by mostly 20- to 30-something males we designed primarily for varied smart-phones and tablets with a responsive design. We assumed it would get used in blocks of five-to-10 minutes at most, so most of the content would be video with the ability to pull in additional content as desired. We would have designed this content very differently if the audience analysis determined there was a more varied audience.

*Patti Shank*

There is no global phone market, just a series of small and local markets. Do not make any assumptions about what your target audience uses just because a particular mobile platform is popular in the world, or even in the country where they work. Do your learners work with that platform? You will often be surprised, so don't let personal biases get in the way. Data is out there, and nothing beats asking what phones and tablets are in people's pockets and hands.

*Steven Hooper*

Technology is not always the best answer as an educational intervention. Spend a little more time on the front end identifying its real purpose. How will this support the learner? Will it enhance their learning opportunity? If you can't answer these questions, you may want to rethink your tools.

*Megan McKee*

Think about your mobile learners as contributors, not just consumers. Your mobile learners often know a lot about their part of the organization, and enabling them to share can satisfy their desire to create and contribute. Enabling content generation also allows you to harness your learners' knowledge.

*Lauren Bonnet and Ben Bonnet*

Design for people, not devices—the most important thing to consider when developing training for a multi-device world is that you are designing for people, not devices. It's very easy to get caught up in technical specifications and creative solutions, but at the core you are designing for human interaction. Keep focused on what the users need to learn, what environment they are learning in, and what is going to make your training most effective.

*Paul Schneider*

## Forty-two Tips for Designing for Mobile

Is the thought that you're designing for *mobile* at the forefront of your mind? It should be. Are you designing both to device scale and context? Don't just shrink your content down! Things that look great on a desktop or laptop screen can be cramped and difficult to read on a mobile device.

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Design for touch and gestures. Designing for mobile means designing for different input mechanisms than the desktop. Namely, no more mouse. This creates some new considerations when thinking about your designs. For example, no more hovering, controls need to be large enough for a person's finger to tap, etc. It also creates some exciting opportunities. Consider apps like Rise and Clear that have done away with traditional controls and rely on gestures for all of their interactions. Keep these new interaction paradigms in mind when planning your applications.

*Tim Todish*

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Recognize that eLearning on a mobile device is mobile eLearning, *not* mobile learning.

*Clark Quinn*

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Gestural interaction offers new possibilities, but new or unusual gestures may be difficult to find and use as there is no visual indicator to remind learners what to do. Don't rely on invisible gestures too heavily, and make sure you are consistent in their use.

*Imogen Casebourne*

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How big should the words on your phone or tablet be? Minimum text size varies by distance from the eye: For small phones 4pt (1.4mm), for larger phones 6pt (2.1mm), and for tablets 8pt (2.8mm). Older users still won't be able to use the smallest sizes well, so know your audience.

*Steven Hooper*



In my experience with various cross-platform mobile development tools, it is fairly easy to publish your mobile app to iOS, Android, Windows, etc. The problems begin when you ignore the design patterns of each mobile operating system. Publishing an app with a universally applied interface and design will confuse the end users, who are expecting a native and familiar experience to that particular mobile platform they are using.

*Perry Bennett*

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What can you do contextually, because they're *here* and *now*?

*Clark Quinn*

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When introducing both new content and/or workflow *and* new mobile devices, consider starting learners off on a desktop computer to ensure comprehension of new content first. Once they feel comfortable with the first change then add the mobile device layer. Remember, small wins.

*Megan McKee*

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Help your learners feel productive. The psychology of your learners will play a big role in how they feel about your learning content. We know that people like to feel productive, particularly when they are at work. Design your learning content so your learners can feel like they are checking off items on a checklist.

*Lauren Bonnet and Ben Bonnet*

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Design to device scale and context. Make or download physical-scale templates so your paper sketches are right from the start. Put wireframes and comps on devices, so every step of review is at scale. Pick up the pieces of paper and phones to try out the interface. Does it work in the real world? You'll be surprised what issues come up with just this simple step, early in the process.

*Steven Hooper*

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Use the *least assistance principle*: asking on behalf of your performer, "What's the least I can do for you?"

*Clark Quinn*

Start with pencil or pen and paper. Sketching is a vital part of the design process for mobile user interface and user experience design. Use a grid notebook and sketch at the appropriate aspect ratio for accuracy. For maximum effect, use a sketch template to assist you with scale and user-interface elements.

*Chad Udell*

Swiping is the standard way of moving from screen to screen on mobile devices, as well as for scrolling up and down the content of a single screen. It's what people expect, so you should make it a default for navigation.

*Imogen Casebourne*

Every day we talk to and work with others. Multi-user experiences are how our world works, and so how our digital experiences will function whether we want them to or not. Allow for things like arbitrary sharing, over email, SMS, MMS, Facebook, Twitter, or whatever is available. Flexibility like this, which is easy to build into mobile apps at least, allows the user to weave your digital product or tool into the way their life already works.

*Steven Hooper*

If you're using mobile as part of a transmedia storytelling experience, keep in mind that the story is #1. Your success depends on evoking an emotional response in the audience.

*Lee Lindsey*

Think performance support and social *first*.

*Clark Quinn*

"M" is for multi, not mobile. When thinking about mobile eLearning design, remember how and why people are going to use the content. Different devices and screens can support different types of learning more effectively. Smartphone devices are great performance support tools for example, while desktops and even tablets generally handle deeper, more complex learning well. Sometimes creating courses that you design for each device and that complement each other is the best route to go.

*Paul Schneider*

The good news is that the fundamentals of instructional design haven't changed in a multi-device world and there are tools to help you do the new bits. As long as you make the needs of learners and the objectives your starting point, and ensure that you test any designs for usability, you won't go wrong.

*Imogen Casebourne*

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Too much that you've heard of about designing for touch is wrong, outdated, or personal opinion. Even OS guidelines like the 44px Apple size is a little too small and over-simplified. Instead, follow the research, and design for what we know about how people work with capacitive touch:

- Touch targets must be big enough to be contacted by users' fingers and detected by the touch sensor. Make them at least 17pt (6mm) and preferably 23pt (8mm). There's no need to make buttons, lists, or other such items larger than about 43pt (15mm) in the smallest dimension.
- Make sure your users don't hit the wrong target by spacing out the targets enough. Measured from the center, make sure nothing else is inside a circle at least 23pt (8mm) across, and if at all possible, 28pt (10mm).

*Steven Hooper*

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Encourage expansion. Give your learners an excuse to use other sources for learning. Don't assume that they will learn EVERYTHING from your mLearning module. Give them the opportunity to go out and research items for more information, providing links, or app suggestions. Or, better yet, send them into the real world to apply what they've learned, or to learn more.

*Raquel Zapata & Jay Richards*

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Think mobile first. In a nutshell, focusing on mobile first puts your mind in the right place. It forces you to focus on and prioritize the most important features and content in your application. It also extends your abilities by offering new tools and services that are not available in a traditional desktop environment. By approaching your project with the mobile-first mentality, you will start on the right foot.

*Tim Todish*

Understand that you *won't* get it right the first time, and you'll need to test and tune.

*Clark Quinn*

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Add opportunities for collaboration. Collaborative interaction among learners, experts, instructors, etc., can be a valuable tool in mobile learning. Use the mobile devices' synchronous communication capabilities to your advantage.

*Raquel Zapata & Jay Richards*

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Content is king. "Content precedes design. Design in the absence of content is not design, it's decoration."—Jeffery Zeldman

You need to know what you're going to be presenting before you figure out how to present it. Too often, people fall into the trap of creating a beautiful design only to find out that it breaks as soon as you add real content. Content affects more than layout, however. It also helps set the tone for the whole experience. Understanding the content prior to designing helps to create a much stronger, more cohesive experience.

*Tim Todish*

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Explore responsive design.

*Clark Quinn*

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Any interactive feature on a mobile device needs to be the right size to easily hit with a finger or thumb, and it isn't acceptable to tell learners that their digits are too large!

*Imogen Casebourne*

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Nothing with a screen is at 72dpi. Nothing—and certainly not phones. To understand most guidelines in Photoshop or Fireworks, you need to set the right physical screen size (iPhones are 5cm wide) and pixel density (Retina iPhones are 326dpi). You can easily find the size for whatever phone you are designing for with an Internet search.

*Steven Hooper*

Participatory storytelling involves the audience in interactively shaping the plot of a story. You'll find some of the clearest examples of this in film and theatre. Construct a fictional transmedia story world for learning, and have learners shape its outcome with their mobile devices, using readily available tools like SMS or Twitter.

*Lee Lindsey*

Keep the interface simple. With the limited real estate of a mobile screen, as well as varying processor speeds, it's important to trim out elements that aren't essential to your training. The easier it is to use, the happier your users will be.

*Raquel Zapata & Jay Richards*

Don't try to boil the ocean. To capture small wins, identify a few small interventions using mobile performance support and learning. Keep building from there.

*Megan McKee*

When you start your training development, think mobile first. This forces you to focus on essential learning needs. Get the content right on mobile and add supporting elements for other types of devices and platforms later.

*Paul Schneider*

Because of the way people hold smartphones, they use their thumbs to interact more often than you'd expect. You can easily reach most of the screen with your thumb from the side of the phone, but not all of it. Try to avoid putting key interactive features in that hard-to-reach area.

*Imogen Casebourne*

Keep it short. Just as with other forms of learning, it is important to keep mLearning course components short. Think more along the lines of a short five- to 10-minute learning session with an activity, rather than a full-blown hour-long module.

*Raquel Zapata & Jay Richards*

Design for touch, fingers, and inputs. Think about (or try and test) what happens when you or your learners hold phones and tablets for real. Can they reach the controls you want them to use? Maybe the controls need to move. Do their fingers obscure important information on the screen when they are clicking? Most

actions on click need to be big enough to see around the finger, or happen above it. When a keyboard appears, does it make the screen so small that hint text or other context is unavailable? If so, fix it.

*Steven Hooper*

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Consider the features of the device(s) you are targeting. Mobile devices offer a number of capabilities not available to traditional desktop applications. Things like built-in cameras, GPS, and accelerometers can offer tremendous functionality in your application. Look for ways to leverage these tools to enhance the experience your application provides.

*Tim Todish*

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Think of mobile learning as performance support ... what is the “must know” information my learners need at the click of a button for this content? You can and should treat any “should know” or “could know” information differently, perhaps as a job aid or links of resources on your intranet.

*Brooke Schepker*

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For live events, build in mobile-friendly interactivity—many webinar platforms provide for feedback channels such as chat, polls, and hand-raising or agree/disagree status. Use these features to keep your users engaged as long as they can easily access and use them on their mobile devices.

*Ken Davis*

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It's not just about screen size. When designing responsive eLearning, other things are important. How and from where a user is accessing learning content is just as, if not more, important than screen size. Consider the learning environment and its challenges and opportunities as you decide what type of learning experience to deliver.

*Paul Schneider*

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Shoot for efficiency. Your end user will get frustrated if he or she can't access the necessary information within a few taps. Be sure users can easily access your mobile content.

*Raquel Zapata & Jay Richards*

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Context is all about when and where learners will use your app. This can be difficult to determine, but it is vitally important. It's not enough to just assume that because your users are mobile, they are in a rush and only want quick access to limited information. Eighty-four percent of us use our mobile phones while at home (source: <http://www.lukew.com/Learning/ff/entry.asp?1263>). Don't assume you know where your users will use your application. Get out of the office (or hire someone) and do some testing. If you make assumptions based on when and where you think your users are going to be using your app, you're bound to disappoint.

*Tim Todish*

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Keep it simple—I can't stress this enough. It's very easy to go overboard on adding content and creating complex presentations that may look cool on a desktop or laptop, but are difficult to see on a mobile device. Keeping the content clean with big fonts—lots of white space, and letting pictures and video tell the story—really help.

*Ken Davis*

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Instructional design in a multi-device world means coming to grips with responsive design (designing media and interactions that work well across multiple screen sizes) and expanding the interaction suite to include gestural (touch) interaction. Designers also need to factor in how learners use the various devices—for shorter or longer periods of time and in different locations.

*Imogen Casebourne*

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Design with the right inputs in mind. Virtual keyboards give a range of options to specify neat and useful input constraints, but people rarely use them right. Don't give them a keyboard if you need the learner to type some numbers; display errors if they type letters, and make them switch to numeric mode. You can (mostly easily) set the input mode by assigning the field the right label. And remember, it's a lot more than numbers and text. Think about the ideal input method to make it easy and error-free, from sliding scales to selectable lists to keypads with only the characters you want. These, and many more, are all available within certain limits.

*Steven Hooper*

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## Nine Tips for Selecting and Using mLearning Tools and Platforms

Got apps? Maybe you don't need any. Our tipsters offer guidance from tool selection to using HTML 5 to keeping mobile in mind when you're developing on a desktop.

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Before choosing a development tool for an mLearning project, you must weigh the requirements of the project. Will your app use the device's camera? Will you need geolocation? How about the accelerometer? A lot of popular mobile development tools (minus the native languages) have varying degrees of support for the native APIs of mobile operating systems. Realizing, in the mature stage of a project, that you need access to one of these native APIs and it's not available can be enough to send you back to the drawing board.

*Perry Bennett*

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If you get the design right, there are lots of ways to implement it. If you don't get the design right, it doesn't matter *how* you implement it.

*Clark Quinn*

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Are you sure you need an app for that? You only need an app if your business model and/or functional requirements necessitate it. You may be able to provide a cross-platform mobile web experience at a fraction of the cost and still accomplish all the things you need to in the use cases for the experience. If the two big areas of business requirements and functional requirements don't point you towards an app, and you already have web technologies as part of your overall business processes, marketing, education, or other communications, why not forgo the app and hit the mobile web? You'll be forsaking a little flash and maybe a tiny bit of prestige, but you'll have a cost-effective, cross-platform, forward-compatible mechanism that is available for all who visit your website or perform a Google search for your product or service.

*Chad Udell*

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Don't even think about selecting a tool until you know your mLearning strategy. There are lots of good tools out there but they have different strengths and weaknesses. When you know the types of initiatives you want to run, the

infrastructure available, and the devices you need to support, you will have clear criteria for tool and platform selection.

*Imogen Casebourne*

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HTML5 is still an evolving specification. Many rapid eLearning tool vendors are updating to take advantage of HTML5 delivery. As they finalize the HTML5 specification, there will be less risk in using these tools and delivering pure HTML5 content as opposed to Flash-based delivery.

*Josh Cavalier*

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When choosing an mLearning development tool, don't limit yourself to tools that companies strictly market as mLearning tools. Vendors market software such as Unity and Corona SDK as game engines, but they are well suited to the creation of learning and training simulations.

*Perry Bennett*

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Wow your clients and your learners! Mobile development tools are becoming more accessible and less expensive. Many sites exist that will allow you to create a mobile website. You can also create mobile interfaces with common instructional-design software (some are beginning to offer responsive design). Also consider Adobe's Creative Cloud subscriptions for mobile development tools. You can package solutions published to HTML5, JavaScript, and CSS with PhoneGap to create a hybrid app that resides on the device. (Note that you will need an Apple developer account to deploy apps for iOS.)

*Candice Herndon*

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Start with mobile web (at least for prototyping), then go to wrapped and/or app as you converge on design and as you need it.

*Clark Quinn*

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Although people consume mLearning on a mobile device, mLearning development is still primarily accomplished on a desktop machine. This can create a disconnect in the development process. While software simulators, emulators, or browsers can help you preview your mLearning project on the desktop, nothing beats testing your work on a wide range of actual mobile devices.

*Perry Bennett*

## Eleven Tips for Working with mLearning Media

Video and audio files not playing across platforms. Performance issues due to streaming over 3G. Buttons that don't look like buttons. There are many small, simple ways to undermine your mobile media; here's how to avoid some of them.

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Save video files in MP4 format and audio files in MP3 format to ensure they will work across devices and operating systems.

*Imogen Casebourne*

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Go light on the multimedia. Just as in traditional eLearning, too many media elements can distract from the message you're trying to convey to your learner. Unless they're required, keep animations, interactions, and even graphics to a minimum.

*Raquel Zapata & Jay Richards*

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Be aware of mobile limitations—by now it's well known that mobile devices have limitations on what content they can play. In general you should avoid Flash content (including FLV, FV4, and SWF content) as well as Windows Media (WMV) in favor of HTML 5 content and H.264 video content. What people often forget is that mobile devices are smaller in display, have limited input capability, and may have unpredictable connectivity.

*Ken Davis*

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Bear in mind that users may end up streaming your video content over 3G or slow Wi-Fi, which could lead to performance issues, so keep videos short and to the point. This should be less of a problem with native apps, although initial download may be slow if assets are large.

*Imogen Casebourne*

Media creation and development is easy to do on a mobile device, so use this to your advantage. Consider the endless possibilities of allowing users to submit assignments, provide reflections, and connect with others by sharing content captured from their mobile devices. Leverage this as an opportunity to allow users to enhance their messages with media content. Just remember to keep it simple.

*Lauren Bonnet and Ben Bonnet*

Tame your mLearning video assets! Remember the mobile context—interruptions, connectivity issues, screen size, browser limitations, etc. Recommendations include chunking segments into clips of less than five minutes, keeping file sizes smaller for download (around 4 MB), publishing to a compatible file format such as MP4, testing to find the best bitrate for the video size and resolution, and leveraging the “interactiveness” of mobile. Curate your searchable video so that learners (and you) can find it when needed.

*Candice Herndon*

Do your buttons look like buttons? When designing interface elements for mobile, keep in mind that there is no rollover state. The user must know visually that they can tap a button. If you are delivering for both mobile and desktop, use the verb “push” instead of “click” or “tap” to indicate button interaction.

*Josh Cavalier*

Traditional Flash animations won’t run on Apple devices, but you can save them as MP4 files and import them in the same way as videos.

*Imogen Casebourne*

Consider using “sprite sheets,” single-image files that combine many smaller image files, into your next mLearning project. mLearning projects delivered through a browser will benefit from fewer HTTP requests, while native mobile applications will see reduced memory usage.

*Perry Bennett*

Consider browser apps that support desktop formats—if you absolutely must provide Flash content, suggest browser applications such as Puffin, SkyFire, Opera, and sometimes Chrome and Firefox mobile browsers. This is risky, as the

vendor's server usually provides Flash support by intercepting the stream and then converting it to a mobile-friendly format. All of this is out of your and your learner's control. Also, support for these options varies significantly by device.

*Ken Davis*

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For multi-device design, consider saving images in PNG format. This should ensure that images will display across platforms.

*Imogen Casebourne*

## Nine Tips for Migrating and Managing mLearning Content

You already have the desktop eLearning content. Should you migrate all of it, some of it, or none of it to mobile? And how should you manage the content to make it useful for multiple purposes and platforms? See what our experts suggest.

---

Leverage reusable content. Reusable learning objects (RLOs) are the soulmates of responsive eLearning design. Centralized content that is tagged and ready for deployment according to a training developer's defined scenarios offers a wonderful opportunity to fully leverage each device for the learning scenario it is best suited for.

*Paul Schneider*

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Create a content strategy and governance.

*Clark Quinn*

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When deciding whether to convert existing or legacy content to mobile, always consider your audience's needs and expectations. Consider these questions:

- Is your audience using mobile devices now? Will they be using them in the future? How far in the future?
- Do they need to have access to all content on mobile, just some of it (most popular, most relevant?), or none of it?
- Does your content have a long shelf life or will it become irrelevant in a short time?
- What is the best learning experience for your audience?

In our experience, much of our audience is already using mobile devices, they want access to all content, not just a selection, and our content has a long shelf life. We also offer apps for some of our products, so our audience is becoming accustomed to using mobile technology. That is why we determined the best learner experience would be to have all content available on mobile.

*Tracy Marshall*

Separate out what it says from how it looks: XML.

*Clark Quinn*

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People use mobile devices differently, so check whether one-to-one conversion of existing courses is appropriate. Often it won't be, and you will be better off using mobile to provide reminders or support, perhaps in a blend. Sometimes learners do simply want more ways to access full-scale existing eLearning courses; in those cases a multi-device authoring tool will fit the bill.

*Imogen Casebourne*

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Go granular: separate out examples, practice, introduction, concept presentation, etc.

*Clark Quinn*

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A saying attributed to Nokia states, "Don't shrink, rethink." There may be a tendency to port your existing desktop eLearning modules (without much modification) over to mLearning just because that capability exists. You should tailor mLearning for the unique and personal experiences that mobile devices provide.

*Perry Bennett*

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Go semantic: start tagging.

*Clark Quinn*

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Start thinking: (assembly and) delivery by rule, not hardwired. Web 1.0 was producer-generated content, Web 2.0 is user-generated content, Web 3.0 is going to be system-generated content.

*Clark Quinn*

## Eleven Tips for Using Mobile for Performance Support

You're designing mobile for performance support, a match made in heaven. What content should migrate over from paper-based job aids? Will they use the performance-support tool in front of customers? Will some departments need more help than others? Our tipsters offer their thoughts.

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This is perhaps the most exciting new potential for learning offered by mobile—the always-with-us, always-on nature of mobile devices means that they are perfect for seamlessly delivering performance support in ways that weren't previously possible.

*Imogen Casebourne*

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Consider a special label or indicator on mobile devices if users will be accessing the device for support in front of customers. It's a great visual for customers to recognize that these are organizational devices, rather than personal ones.

*Megan McKee*

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Own the performance support world. Sometimes instructional designers think of themselves as providers of training and assume that performance support is someone else's job. Mobile learning is all about supporting the learner at the point of need, which is the realm of performance support. All instructional designers should embrace this new role as performance support providers—or someone else will.

*Lauren Bonnet and Ben Bonnet*

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To get started with mobile performance support, look for existing paper-based job aids such as wallet cards. Can they usefully migrate to mobile?

*Imogen Casebourne*

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Who are the learners? What do they need to know? Where are they at the moment of need? Is the task mission-critical? Will they have connectivity? For mission-critical tasks that depend on the availability of the information, consider



an option for learners to download the ePub, video, etc., from the mobile LMS, app, or website. If you need a more complex solution, such as a break/fix decision tool where learners may not have connectivity, consider packaging this tool as an app that can receive updates when the learner is connected.

*Candice Herndon*

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Look to the mobile apps *you* use for inspiration. (Or, as far as your lawyers will let you, *steal*.)

*Clark Quinn*

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QR codes are a great way of delivering mobile performance support on how to use specific machinery, or perform in specific locations. For example, a QR code on a piece of rarely used material could trigger a page with step-by-step instructions or video.

*Imogen Casebourne*

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Identify departments or roles that may require “refreshers” while on the job. If there are specific tasks users do not perform often, but are still a part of their jobs, mobile performance-support devices could be just what you are looking for. Provide small video clips demonstrating particular tasks or reference guides that mobile user can access as a refresher prior to completing an occasional task.

*Megan McKee*

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It may be possible for mobile performance support to integrate with existing systems and databases.

*Imogen Casebourne*

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The easiest way to deliver engaging mobile performance support is via short one-to-two-minute videos. MP4 (MPEG4) video is consumable on 90 to 95 percent of mobile devices.

*Josh Cavalier*

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Consider whether mobile performance support should be push or pull.

*Imogen Casebourne*

## Twenty-one Tips for Delivering mLearning

Can you please both desktop and mobile users in an online learning event? Does bring your own device (BYOD) really work? Can you really develop once and deploy everywhere? Our experts provide advice for delivering mLearning.

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If you're running a blended-learning event (desktop and mobile users), plan for mobile first. If you're going to host a webinar event with users on both mobile and desktop systems, plan for the lowest common denominator. This will ensure the highest level of satisfaction for the most attendees. If you build for the desktop user and incorporate a lot of content that's not available for mobile, you will frustrate the mobile audience.

*Ken Davis*

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If you're designing a native app for delivery on the Apple App Store, Apple will examine it for adherence to their design conventions and will only accept the app if they believe it is suitably in line with their standards. Make sure you are familiar with Apple's conventions before you start.

*Imogen Casebourne*

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Think of tablets when the mobility requirements aren't too onerous, when you need screen real estate for data display, or when users will share the screen with others. Or—perish the thought—when you're actually going to try to give users a course on a mobile device.

*Clark Quinn*

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Alternate reality games (ARGs) offer the possibility of engaging the audience and helping them learn through collective problem solving and gameplay. ARGs blur the lines between a fictional story-world and the real world. Mobile is a natural fit for ARGs.

*Lee Lindsey*

When venturing into the hosting, distribution, and sync-delivery space, focus on a few key elements that will bring about the best experience for your learners. It can be easy to lose focus while working “under the hood.”

*Alexander R. Corris*

If your organization uses an MDM (mobile device management) service and you are planning to build a native app, ensure that your chosen authoring solution can produce compatible content.

*Imogen Casebourne*

BYOD doesn't need to equal waste of time. Although workday distractions aren't a concern to take lightly, mobile devices are often extremely underutilized when it comes to helping employees get things accomplished on the job. An employee already uses her phone's camera to take a picture of a colleague at the office party, but she could be using it to look up company policy or technical reference documents. A construction worker uses his phone's GPS function to find the closest Starbucks while on location, but he could be using it to better route supply trucks to the work site. A saleswoman already uses her phone's media player to listen to music while on the road, but she could be using it to learn the company's sales process by listening to a podcast featuring tips and objection-handling suggestions.

*Chad Udell*

Ten years ago, mobile learning was seen as involving smartphones and personal digital assistants (PDAs). But many people had a hard time imagining how mLearning could work, given the small size of device screens. In 2010, along came tablet computers, starting with Apple's iPad. This turned out to be a “get out of jail card” for many designers, who saw the screen size as allowing them to deliver eLearning on desktops in a “mobile” format. But, we don't carry tablets with us everywhere in the same way we do mobile phones. Tablets are too heavy, and too bulky to carry around easily. At the same time, smartphones are getting bigger, filling in the gap between seven-inch mini-tablets and phones, a new category referred to as “phablets.” Smartphones will become more flexible in terms of display and input devices, without getting heavier or bigger. On the display side, phones will come with built-in projectors, and flexible rollout digital paper, which has been available for years, will provide phones with alternative light-weight displays. Or, maybe the phone will simply be an app on a piece of digital paper or

built into your clothes. The mobility of the learner connected to the cloud is what creates the possibility of mLearning. We need to design for that fact, not just try to jam eLearning content onto a tablet.

*Gary Woodill*

Use webinar platforms with a native mobile app—Adobe Connect, WebEx, and GoToMeeting/GoToTraining, as well as many of the other large platforms, have mobile applications. These apps are free, but keep in mind the user may not wish to add these applications. In these cases, the user may choose to attend the session via a mobile browser, which faces many limitations. The advantage of the native applications is that they provide means of accessing content in a mobile-friendly format.

*Ken Davis*

For Apple App Store submissions, allow sufficient lead-time for the submission process! This typically takes around five days, but if Apple flags issues with your app, you will need time to address these before going through the process again.

*Imogen Casebourne*

Do you need to secure your organization's proprietary information in mobile learning environments? Most LMS vendors with mobile capabilities have apps with single sign-on (SSO) to integrate with your organization's authentication technology. Host web apps on an internal or secured server that requires authentication. Corporate settings may have MDM (mobile device management) capabilities to wipe data from devices when a learner leaves the company. If needed to comply with your organization's data security requirements, use settings offered by some LMS vendors and in development software to prevent the download of resources.

*Candice Herndon*

Build once, deploy everywhere, is a myth. For the last few years, people have been claiming that technologies like HTML5 offer the opportunity to build once and deploy everywhere. The truth is this is rarely the case. Except in the cases of very simple applications, you will almost certainly need to tailor your designs for

the various devices you are targeting. This doesn't mean one design per device, but it does mean you will need to create a few different versions of your designs to account for varying screen sizes. Responsive web design is a nice way to solve this problem, but it is not as simple as the build once, deploy everywhere myth might lead you to believe.

*Tim Todish*

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Use the concept of a "learning drip" and offer up tiny little bits of knowledge each day via email. Keep it to a single thought (or best, a single sentence) for the greatest effect. You can include a hot link for those who want to know more.

*Dick Carlson*

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You cannot assume mobile users sit down and engage with your digital tool for any amount of time. They get distracted, and interrupted, or decide to complete tasks later when in other locations or with other devices. They expect their data to follow them, so be prepared to save data entered, and even scrolled-to position and searches. Let all that feed into the display of any other channel when users resume. Have messages and notifications remind users to finish tasks, and set up your success metrics and analytics to track across platforms so you can react to the way people actually work, and not panic at all the users leaving a single channel, if they come back later or in another channel.

*Steven Hooper*

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Do plenty of research on the technology you have before you start development. Think through questions like:

- How will my learning management system (LMS) handle tracking from my course?
- Will my learners need to download an app to run the course?
- Do I need to use HTML5? If so, does my authoring tool have limitations on what features I can use during development?
- Will my learners access the course with tablets only, or do I also need to design for smartphones?
- Do I need to be aware of any streaming issues with included videos?

*Brooke Schepker*

Use the mobile webinar as a teaser for a larger online event—given the constraints of mobile devices, sometimes it’s easier to do a separate mobile event focused specifically on brevity and mobile access. This short webinar, about 15 minutes or less, hits the high points of the session and presents the information the mobile learner must know. Follow this up with a link to register for the bigger event, as well as to any of the content used in the webinar for support after the learning event. This gives mobile attendees the option to view that content at a time and on a platform that best suits their needs.

*Ken Davis*

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If this is to be a BYOD initiative, warn learners that they may end up paying for data download where they don’t have a Wi-Fi connection.

*Imogen Casebourne*

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Stories are powerful learning mechanisms. Use mobile technologies within a transmedia-storytelling approach to engage your audience across a range of media. Don’t re-tell the same story on mobile that you’re telling in another medium—tell a different part of the story, using the unique affordances offered by mobile.

*Lee Lindsey*

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Leverage the apps! In addition to a mobile-accessible LMS, performance support tools, and internal apps, there is a wealth of apps (many of them free) that you can leverage for synchronous and asynchronous activities and support. A few of these include iBooks for viewing and interacting with iBooks, iBooks Author for creating iBooks, Evernote for creating and sharing media-rich notebooks, iCloud for Microsoft Office productivity, and Dropbox for file storage and sharing.

*Candice Herndon*

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Consciously evaluate BYOD versus providing a device.

*Clark Quinn*

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Keep it short and to the point—in today’s BYOD enterprise landscape, as students and other participants use their personal mobile device for access, they will most likely be paying for a limited data plan. The longer the session, the more data is used. Also, things like screen sharing and video consume a lot of data in most webinar platforms, so use these features judiciously.

*Ken Davis*

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## Eight Tips for Measuring mLearning Success

Keep metrics in mind when planning your mLearning project. Your stakeholders are going to want to see results, and understanding how your mLearning is working is crucial to improving that mLearning. And don't forget the obvious—incorporate opportunities for learner feedback directly from the mobile tool.

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If you are tracking scores from a mobile assessment, make sure that you know what will happen if learners lose connectivity halfway through taking the assessment—is there a mechanism in place to ensure scores are saved and uploaded when learners regain connectivity?

*Imogen Casebourne*

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Plan for measurements and metrics. You're going to need to adjust the ways you measure success. While your LMS may have some measurement options for mLearning, there are a lot of other options out there. Integrating in-app analytics (Flurry, Google Analytics, Omniture, or others) is a must. Creating a landing page at your site (internal or external depending on your needs) for the app store or MDM/MAM (mobile device management/mobile application management) traffic is a basic requirement. And even using simple eCommerce-like conversion tools like promo codes and integrating a social-media-measurement platform like Hubspot, Hootsuite, or Owl.ly could all be smart things to do. This approach will show you who is sharing content out of your app, and more importantly, behavior patterns that your users are exhibiting while in your experience.

*Chad Udell*

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If you are offering performance support, then traditional assessment may not be appropriate. Consider using techniques that proponents of informal learning have proposed for measuring success. For example, you might be able to track which job aids learners access most frequently and where, and match this to success indicators.

*Imogen Casebourne*



Instrument: If mobile web, look at web traffic; if app, have it leave trails.

*Clark Quinn*

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Incorporate opportunities for feedback directly from the mobile tool. Use the mobile format to facilitate the process for an ongoing, dynamic assessment that is mobile friendly.

*Lauren Bonnet and Ben Bonnet*

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If you want an assessment to track to a SCORM-compliant LMS, it will likely be most straightforward to create the assessment as a mobile web app which can then be launched from a mobile-ready LMS as a SCORM-compliant object.

*Imogen Casebourne*

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Like any other kind of learning, *start* your process with how you plan to measure success. And be wary of metrics that measure “hits” or “touches”—millions of people get wet when it rains, but very few carry umbrellas.

*Dick Carlson*

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It is possible to track scores from an assessment in the form of a SCORM-compliant native app, but you might need to perform additional development work to ensure your app can communicate with your LMS.

*Imogen Casebourne*

## Fourteen Tips for Prospering in a Multi-device World

The multi-device world is here, and most of us are still exploring what this means for us and for our learners. Let our tipsters provide some directions in this brave new world.

Every technology has a developmental curve. Mobile learning did not appear out of thin air. Its roots go back to the history of distance education, the invention of radio, wireless telegraph and telephone, the miniaturization of electronics, and the idea of field trips. There are new ideas and technologies that will impact mobile learning in the near future. If you want to know what they are, you need to explore educational technology prototypes, and the convergence of technologies. For example, what would a combination of nanotechnology and mLearning look like? Innovation happens in the cracks between different fields of endeavor.

*Gary Woodill*

Push yourself to see how you can use your mobile device to make you smarter.

*Clark Quinn*

About 30 percent of people in the US, where there are many computers, use mobile as their preferred or only way to access the Internet. In other countries, it's far over 90 percent. Even if your users are working with other devices, they will often choose to start engagement on mobile devices.

*Steven Hooper*

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**mLearnCon**<sup>SM</sup>

**June 24 - 26, 2014 | San Diego**

Join mobile learning professionals from around the world next summer in San Diego, CA at the premier mLearning conference and expo—*mLearnCon 2014*. Explore topics covering every aspect of mobile learning including content design and development, strategies, platforms, best practices, and more.

Surveillance is a major concern of many people in this age, when supercomputers—in the service of corporations, the state, and security agencies—collect and analyze data. But, new mobile technologies and cheap storage also raise the possibility of “sousveillance,” where everyday citizens document the activities or lack of activities of those in power, and organize themselves to take action. Mobile is a two-way street.

*Gary Woodill*

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Download the mobile apps *about* mobile.

*Clark Quinn*

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It’s probably some way into the future, but multi-device could come to include wearable technology such as Google Glasses and smart watches and who knows what other yet-to-be-invented devices.

*Imogen Casebourne*

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Take a mobile-first stance with your instructional strategy. People will consume content you create today on a mobile device.

*Josh Cavalier*

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Read *Zen of Palm*.

*Clark Quinn*

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Marshall McLuhan, the 1960s communications guru, wrote, “We look at the present through a rear-view mirror. We march backwards into the future.” That is why each new technology tries to use the content and methods from the previous technology. Version 1.0 of a technology is mostly about the ideas of the past. Version 2.0 starts when someone starts to develop new applications that use the unique affordances of the new technology. Mobile learning is in Version 1.5. Version 2.0 is coming soon.

*Gary Woodill*

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Use the resources listed at <http://designingmlearning.com/resources.html>.

*Clark Quinn*

It's a multi-device world. We have real research to prove this now, and it's a lot more complex than your TV show's call to "synch your second screen" implies. For users with multiple devices, we tend to use each one differently. When available, we often choose larger and more fixed devices (tablets, laptops, desktops) to complete forms and do more important-seeming tasks.

*Steven Hooper*

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Which technologies are your children, grandchildren, nieces, or nephews using? Which are they not using?

*Lee Lindsey*

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In 2010, Google CEO Eric Schmidt said at a conference, "Between the dawn of civilization through 2003, there were just five exabytes of information created ... that much information is now created in two days, and the pace is increasing. People aren't ready for the technology revolution that's going to happen to them." Mobile devices are a major source of that amazing increase in data, and it is growing all the time. Like all technological change, this development has both negative and positive possibilities. At the moment, the negative side seems to be winning, with a massive invasion of privacy in the name of security and anti-terrorism. But, if you look for them, you'll find positive uses for this explosion of data.

*Gary Woodill*

## About Our Tipsters



**Perry Bennett**, *eLearning Developer*

Perry Bennett is an interactive multimedia developer. For the past two years, Perry has used cross-platform tools for mobile application development and design in a government research and development environment. Previously, he was a web designer, eLearning developer, and graphic designer in the private sector. Perry also has experience teaching graphic design and 3-D computer graphics at the community college level as an adjunct faculty instructor.



**Ben Bonnet**, *Instructional Developer, Booz Allen Hamilton*

Ben Bonnet works on Booz Allen Hamilton’s human capital, learning, and communications team. Ben holds a BS degree in media arts and an MA degree in educational media. He has been an instructional designer and currently works as a web developer, supporting several government agencies. Ben’s interest in mobile learning started in 2005 with the development of his first mobile-learning application.



**Lauren Bonnet**, *Assistant Professor, University of Virginia*

Lauren Kravetz Bonnet is an assistant professor at the University of Virginia and a speech-language pathologist. Lauren specializes in teaching students with autism and severe disabilities, assistive technology, communication disorders, and special education. She holds a PhD in special education from George Mason University, an MA from George Washington University in speech-language pathology, and a BS from Ithaca College in teachers of speech and hearing handicapped. Lauren’s research involves using video modeling to teach play, language, and behavior skills to young students with autism, and using mobile learning for teacher education.



**Dick Carlson**, *Owner, Virtual Content Company*

Dick Carlson owns the Virtual Content Company. He has designed certification training used by millions of Microsoft MCSE candidates around the world and brought that learning to candidates in person at TechEd shows with thousands of attendees. Dick works on social media, mobile media, and outside-the-box techniques that people tell him won't work for learning, even though these techniques often become popular later. Lately, he has been experimenting with mobile devices and how we learn with them.



**Imogen Casebourne**, *Director of Learning, Epic Performance Improvement*

Imogen Casebourne is the director of learning for Epic Performance Improvement. Imogen is responsible for Epic's thought-leadership program and carries out research and consultancy for Epic's clients. She started designing mobile learning in 2005, creating a number of successful personal digital assistant (PDA) courses and educational mobile games. More recently, she led the team that won gold at the E-Learning Awards for Best Use of Mobile Learning.



**Josh Cavalier**, *CEO, Lodestone Digital*

Josh Cavalier, CEO and founder of Lodestone, has worked in the eLearning industry for more than 19 years. Focusing on the intersection of education and technology, Josh specializes in educational media production and rapid eLearning tool implementation. Popularly known as Captain Captivate, he is an Adobe Certified Expert and instructor in Captivate. Josh also produces a blog that offers online tutorials and videos on Captivate.



**Alexander R. Corris**, *Director of Football Systems Development, Miami Dolphins*

Alexander R. Corris is the director of football systems development for the Miami Dolphins. Alexander has been with the Dolphins for 11 seasons, and was honored as employee of the quarter for delivering technology products that impact all aspects of the organization. He is a doctoral candidate in computing technology in education (CTE) and holds an educational specialist degree in CTE.



**Ken Davis**, *Senior Learning Technology Specialist, Qualcomm*

Ken Davis is a senior learning technology specialist for Qualcomm's learning center technology team. Ken has worked in a wide range of learning and development roles—mostly in high tech and mobile communications—for 20 years. His work in mobile includes instructional design, development, and delivery of mobile application developer training. Ken specializes in learning systems and eLearning tools and development, and he drives the learning center's virtual classroom platform through webinars and recorded events.



**Candice Herndon**, *Instructional Designer, Pitney Bowes*

Candice Herndon is an instructional designer for Pitney Bowes with over 10 years of experience in developing learning solutions for corporate, K - 12, and higher education. Candice is currently working in mobile development and delivery.



**Steven Hooper**, *President—Design, 4ourth Mobile*

Steven Hooper, president—design for 4ourth Mobile, is a mobile strategist, architect, and interaction designer. He has been doing mobile and multi-channel design since 1999, working on everything from the earliest app stores to browser design to pretty much everything but games. Steven wrote the patterns and technical appendices for the book *Designing Mobile Interfaces*, maintains a repository of mobile design and development information at the 4ourth Mobile Patterns Wiki, and publishes a regular column on mobile in *UX Matters* magazine.



**Lee Lindsey**, *Learning Technology Leader, Genworth*

Lee Lindsey is a learning technology leader at Genworth. While at Genworth, Lee has won awards from Brandon Hall in the categories of Best Use of Video in Learning, Best Custom Content, and Best in Compliance Training. He holds a BA degree in English and Latin from Duke University, an MBA from the College of William & Mary, and a PhD in instructional technology from the University of Virginia. He has published in the areas of experiential instruction, instructional systems design, and academic entrepreneurship.



**Tracy Marshall**, *Senior Instructional Designer, IDEXX Laboratories*

Tracy Marshall is a senior instructional designer for IDEXX Laboratories. Tracy has worked in the training and development industry for over 15 years, beginning her career training social workers on how to use a complex child-welfare information system. At IDEXX, Tracy leads the instructional-design team on eLearning and mLearning projects, collaborating with numerous business partners to create world-class learning.



**Megan McKee**, *Director of Amplifi University, Amplifi Commerce*

Megan McKee is the director of Amplifi University at Amplifi Commerce, where she leads a team in designing and building an internal and client-facing learning organization from the ground up. Megan holds a PhD degree in applied technology performance improvement from the University of North Texas. Before joining Amplifi, she worked in the nonprofit arena for more than 13 years, playing a leading role in design and development, staff performance improvement, needs analysis, performance support, and continuous learning programs.



**Ajay Pangarkar**, *President, Performance Strategist, CentralKnowledge*

Ajay Pangarkar is the president of CentralKnowledge, a performance strategist, and a leading authority on integrating employee performance strategies into the balanced scorecard. Ajay is a certified management accountant and a certified training and development professional. With his partner Teresa Kirkwood, Ajay published his third book, *The Trainer's Balanced Scorecard: A Complete Resource for Linking Learning and Growth to Organizational Strategy*, in 2009. His other books include *The Trainer's Portable Mentor* and *Building Business Acumen for Trainers: Skills to Empower the Learning Function*.



**Clark Quinn**, *Executive Director, Quinnovation*

Clark Quinn is the executive director of Quinnovation, where he consults on performance systems architecture and strategy. Clark is also the author of three books, including *Engaging Learning: Designing e Learning Simulation Games* and *Designing mLearning: Tapping Into the Mobile Revolution for Organizational Performance*. He is also senior director for interaction and mobile for the Internet Time Alliance. Clark holds a PhD in cognitive psychology from the University of California, San Diego.





**Jay Richards**, *Senior Instructional Systems Designer, MTS Technologies*

Jay Richards is a senior instructional system designer with MTS Technologies. Jay has over 11 years of experience in blended learning, task analysis, training evaluation, strategy development, courseware validation, stand-up instruction, and public speaking. His primary experience has been with the US Department of Defense, federal, and commercial sectors.



**Brooke Schepker**, *Senior Vice President, Yukon Learning*

As the senior vice president of Yukon Learning, Brooke Schepker leads the custom eLearning and rapid course development teams. Brooke has worked in the training and development arena for over 14 years, starting her career in technical writing and computer-based training (CBT) development. Then she led the enterprise-wide LMS for the Commonwealth of Virginia. At Yukon Learning, Brooke collaborates with customers around the globe to produce high quality, engaging eLearning. She received her bachelor's degree in business from Virginia Tech and is a certified professional in human resources and technical communication.



**Paul Schneider**, *SVP Business Development, dominKnow Learning Systems*

Paul Schneider is the senior vice president of business development for dominKnow Learning Systems. Previously, Paul worked at GeoLearning/sumTotal, where he managed the training and content services and the research and development divisions, and oversaw a variety of products, including authoring tools and WebEx. Paul holds a PhD in educational psychology from the University of Illinois, Urbana-Champaign.



**Patti Shank**, *Director of Research, The eLearning Guild*

Patti Shank, PhD, CPT, is the research director of *The eLearning Guild* and president of Learning Peaks, an internationally recognized instructional design consulting firm. Patti is listed in *Who's Who in Instructional Technology* and is an often-requested speaker at training and instructional technology conferences. She is quoted frequently in training publications and is the co-author of *Making Sense of Online Learning*, editor of *The Online Learning Idea Book*, co-editor of *The E-Learning Handbook*, and co-author of *Essential Articulate Studio '09*.



**Tim Todish**, *User Experience Designer, Maestro*

Tim Todish, a user experience (UX) designer for Maestro, has been working in the web and mobile industry for more than 10 years. After cutting his teeth on HTML, ASP, and SQL, he shifted his focus from creating back-end technologies to developing rich front-end experiences. Tim has a passion for using technology to create engaging user experiences across multiple devices. A graduate of Grand Valley State University, he has worked with companies of all sizes, from corporate behemoths to small design and development studios.



**Chad Udell**, *Managing Director, Float Mobile Learning*

Chad Udell is the managing director of Float Mobile Learning. Chad creates strategies and designs and develops mobile learning web and app solutions for industry-leading Fortune 500 companies. Recognized as an expert in design and development, he speaks regularly at conferences on design, development, and mobile learning. Chad recently published his first book, *Learning Everywhere: How Mobile Content Strategies Are Transforming Training*.



**Gary Woodill**, *CEO, i5 Research*

Gary Woodill, CEO of i5 Research, conducts assessments and forecasting for emerging technologies. He is the co-author of *Training and Collaboration with Virtual Worlds* and the author of *The Mobile Learning Edge*. Gary is also a senior analyst for Float Mobile Learning, producing white papers and research reports and contributing to the Float blog. Introduced to the PLATO online learning system in 1974 as part of his master's degree studies in educational psychology, Gary has been involved in numerous eLearning and mLearning efforts. He holds a EdD degree in applied psychology from the Ontario Institute for Studies in Education (OISE) at the University of Toronto.



**Raquel Zapata**, *Program Management Office Manager, MTS Technologies*

Raquel Zapata, PgMP, PMP is a program management office (PMO) manager for MTS Technologies. Raquel has over 15 years of experience in PMO management, strategic business planning, and operations improvement. Her training-industry experience includes the management of various mLearning training products for all mobile platforms. Raquel leverages her strategic-planning knowledge, proven budgetary oversight, and astute customer service to drive concurrent multimillion-dollar programs to profitable completion. Her experience spans the private and public sectors, including all branches of the US Department of Defense, federal agencies, and Fortune 10 clientele.