

# About This Book

## Why is this topic important?

Mobile devices are here, there, and everywhere. Can we use them to support learning? The answer is a definite “yes”! Mobile provides a new channel for learning—whether it be formal or informal—and offers unique properties for just-in-time, just-in-place learning. Mobile is not just about courses, but instead supports a broad definition of learning, including innovation, collaboration, research, design, and more, generating new products, services, and problems solved. Whether providing needed tools, augmenting learning, or connecting individuals, mobile is a powerful new tool for supporting performance.

## What can you achieve with this book?

This book provides a comprehensive basis for you to take advantage of mobile learning. It approaches mobile learning from a fundamental perspective, helping you understand and appreciate the rich opportunities that mLearning presents. The book briefly reviews the history of learning from a broad perspective and then goes on to survey the breadth of devices available in today’s market, equipping you with appropriate ways to think about and pursue mobile learning. mLearning requires some new perspectives, and a variety of ways to think differently about the opportunities are presented to help shake up your thinking in productive ways. The book addresses the process of designing, delivering, and deploying mobile solutions, along with organizational pragmatics, to guide you through your mobile projects. Finally, discussions of strategic implications and a review of coming directions keep you prepared for the future. Examples help ground the concepts throughout the book.

## How is the book organized?

This book is designed as the key resource for those interested in mobile learning, or mLearning. It is primarily intended for those involved in organizational learning, but is also designed to serve as both a guide for institutional learning and as a textbook.

## ii Designing mLearning

The coverage is intended to address mLearning at both a conceptual and pragmatic level. At the conceptual level, the book provides frameworks about learning and performance support at the top level and in a wide variety of less comprehensive ways to think about mobile learning. At the pragmatic level, the book provides both examples and tools to help guide mobile design.

The book is organized into four sections: a brief introduction about why mLearning is important, a deep dive into the foundational knowledge you need to be ready to “think” mLearning, detail around the pragmatics of mobile development, and finally some of the larger context and trends and developments to be aware of. Within each of these sections are chapters that reflect major categories of information to be covered. The four sections and fourteen chapters are outlined below:

- I. *Why mLearning* introduces the topic via:
  1. *Overview* of why mLearning
  2. *Details* elaborates on that overview
- II. *Foundations* provides a broad coverage of ways to think about mLearning:
  3. *A Brief History of Learning and Cognition* revisits learning
  4. *The Technology It's Not About* provides an overview of mobile devices
  5. *Getting Contextual* looks at mobile learning in various settings
  6. *Getting Concrete* provides a number of elaborated examples
  7. *Mobile Models* presents a wide variety of ways to conceptualize mLearning
- III. *Brass Tacks* gets into pragmatics of mLearning
  8. *A Platform to Stand On* presents the benefits of an infrastructure approach
  9. *Mobile Design* provides coverage of analysis and design
  10. *The Development It's Not About* covers development issues
  11. *Implementation and Evaluation* discusses implementation and organizational issues

- IV. *Looking Forward* provides a strategic view and coming trends
12. *Being Strategic* presents a performance ecosystem view of technology in organizational learning
  13. *Trends and Directions* covers current trends and likely convergences
  14. *Get Going (Mobile)* is a call to action

The book is designed both for reading and as a reference. The first four chapters, at least, should be read to ground thinking about mobile. Readers should then decide whether they would like an overview (Chapter 5), examples (Chapter 6), or a variety of concepts (Chapter 7). Chapter 7, in particular, should be thought of as a repository of sparks to mobile thinking. The third section, Chapters 8 through 11, is to be used as a guide when an mLearning initiative is being considered.

The final section is for those who want to look at mLearning as a component of both organizational strategy and in society as a whole.

The audience for this book is not only instructional designers but also developers, media experts, managers, and anyone with responsibility for supporting performance in organizations. While the focus is largely on the design of solutions, there is enough support for the reasons to think mobile and the organizational issues to assist the larger agenda of mobilizing the organization.

There are questions at the end of most chapters that are intended for readers to check their understanding and prepare to develop and deliver mobile learning.

In addition, there is an associated website that will have resources, links, and more. For access, please access the following URL:

**[www.designingmlearning.com](http://www.designingmlearning.com)**

# FOREWORD

If you are someone who cares about the future of learning, education, training, and human performance support, then you must read this book.

The promise of connecting learners with information, ideas, and each other has teased its advocates for more than a decade. But in spite of the obvious, self-evident value of using mobile devices in support of learning, *mlearning* has been slow to tip into general practice. The reasons are legitimate, of course. We are still standing on the very early edge of an unavoidable trend that *will* change the way that we think about every facet of learning, education, and training practice.

And yet, it's been hard to shake that prickly sensation that we're still missing the point. Until recently we've mostly, and unavoidably, wrestled with issues of platforms, devices, speeds, and feeds. Finally, we are beginning to seriously confront some of the biggest and thorniest barriers of all:

- Does mlearning really work?
- How do we know this isn't just some pop fad that will fade from view with the introduction of the "next big thing"?
- How must we address the organizational and cultural issues that may stand between the increasingly distributed stakeholders and the learning solutions that they crave?
- How to we ensure that we make it about the learning?

mLearning has been a really, really hard nut to crack. No matter that the apps marketplace has exploded, networks are getting faster, and amazing new devices promise to rock our worlds—the goal of leveraging the amazing capacity of mobility in the service of learning has continued to be elusive.

So it is with much excitement that I share some great news—finally, someone has untied the Gordian knot. I have finally found my mLearning action hero!

Clark Quinn has written the essential “navigator’s guide” for charting our respective and multivariate course through these murky, churning seas of epistemology, ontological frameworks, platforms, networks devices, interface design, usability, assessments, outcomes, and ROI.

You may think I am leaning toward poetic prose in tribute to our author, and, of course, you would be correct. But more to the point—for the first time in my memory there is a resource for people like us, we learning tech types who care as much about the learning theory and organizational issues as we do with operating systems and data plans. We now have a framework for exploring the limitless possibilities that mlearning offers. And *that* is something to be excited about.

Lest you think I am overstating the value proposition of a wholistic, integrated framework for mlearning, let me put this into a bit of context. I was fortunate to help take care of the worldwide higher education solutions business at Macromedia in the years just before it was acquired by Adobe. In late 2004 my boss called me into her office to ask me if I would take a strategic assignment. Our senior management wanted to know whether there was a market for mobile learning in education and training. True, it had a lot to do with this thing called Flash. But still.

We dove deep into market research. We did focus groups. We talked with practice leaders. We talked with business leaders. We talked with researchers and analysts. We observed consumer behavior. We observed learner behavior. And time and time again we were confronted with the reality that, until learning and technology experts, business analysts, and learning practitioners were ready to consider *all* of the pieces and parts of the value proposition, mlearning would never live up to its potential.

Some people gave up and moved on to brighter, shinier innovation diversions. But not Clark. He sorted through all the piece parts, filtered out the noise, focused on the things that mattered, tested his assumptions, developed designs, and tested his designs, slogged through the debates and diatribes. And as we fast-forward to today (and I wryly observe that the debate over whether or not the world is ready for Flash on a cell phone still rages on), we all have the opportunity to benefit from Clark’s wisdom, vision, and sheer tenacity. He has morphed theoretical knowledge, practical experience, technological acumen, and design sensibilities into a framework that will finally give us all a chance to realize the promises of mlearning.

Clark is, without a doubt my go-to mlearning action hero.

If you are someone who cares about the future of learning, education, training, and human performance support, and you, too, have been searching for *your* mlearning action hero—I'm happy to tell you that the search is over.

Now, get busy and read this book. The world is waiting for us!

*Ellen D. Wagner*

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<http://www.pbookshop.com>

# PREFACE

I got into mobile by accident: Marcia Conner (who was kind enough to write the foreword for *Engaging Learning: Designing e-Learning Simulation Games* (my first book) asked me to write an article on mLearning. Not having been involved in mobile learning at the time (though an eager PDA and reluctant cell phone user), I had to make it a thought piece. However, as this was in 2000, it was still one of the first pieces out there, which got me a small amount of notoriety, but more importantly, seeded the thought of mobile learning.

I subsequently had the chance to represent mobile learning on behalf of my client, Knowledge Anywhere, when Judy Brown organized a mobile expo at a conference. As a consequence, I met Judy and David Metcalf, among others, and became involved in running a subsequent day on mobile learning at a conference.

Through Knowledge Anywhere, I was able to get my hands dirty actually developing a mobile learning project that made it into David Metcalf's early book *mLearning. Mobile e-Learning* (2006).

I subsequently was enticed by Steve Wexler into writing a mobile design article for the eLearning Guild's first mobile learning research report. An additional piece made it into the second report, and a companion piece on mobile devices was published by Learning Circuits.

Along the way I have had the opportunity to develop a mobile strategy, offer mobile design workshops, and participate in mobile design activities.

Normally, I would have expected Judy Brown or David Metcalf to be the author of this book, but both have declined. So, recognizing the need, I have taken the opportunity.

## ***Some Clarifications***

I use the terms learner, performer, user, and individual relatively interchangeably, although I will try to indicate the perspective I'm taking—formal learning, performance support, usability—by the label used.

I recommend strong use of the glossary for those who find acronyms or terms difficult. I'll define briefly each term as I first use it, but then I'll need to move on.

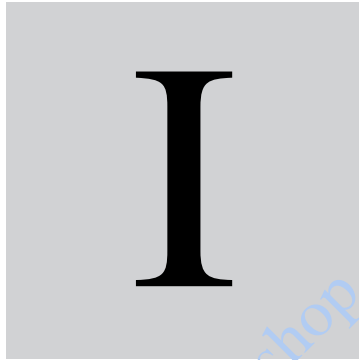
There are times in the narrative when I use "we" in terms of a solution designed and delivered. When I do, it is a situation in which I was working in conjunction with a team.

I have deliberately included comments from a number of players in the field. This is so that you, the reader, recognize some of the names of the pioneers who have led the way and can look to them for guidance and respect their passion and contributions. All of these people are on Twitter (I am @quinnovator, by the way), and most if not all have blogs (mine is learnlets.com) as well. I highly recommend you follow them if you are looking for valuable insight.

You will see some examples when I do not mention some specific detail, such as the actual organization, for confidentiality reasons. However, I have attempted to provide sufficient context so that you can comprehend the example, even if some details must be hidden. Fingers crossed!

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# SECTION



# WHY MLEARNING

Things are moving faster: we have less time, there's more information, we have fewer resources available, and we have more responsibility. In short, the demand is for increased performance. Couple that with the fact that we're more mobile than ever, in meetings, visiting sites and people, at conferences, and we really need portable, personal performance improvement. That's what mLearning (mobile learning) is all about, and consequently, so is this book.

Are we ready for mLearning? The answer is undeniably yes, for four reasons:

- Mobile devices are already here in a big way.
- The opportunity is real.

## 2 Designing mLearning

- The potential is, quite literally, awesome.
- mLearning is doable.

We will dig into these more deeply in the first two chapters:

- Chapter 1. Is an Overview of why mLearning.
- Chapter 2. Goes into more Details that elaborate on that overview.

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# CHAPTER

# 1

## OVERVIEW

*mLearning is big already, and is growing bigger at a rapid pace. The time to be thinking mLearning is now!*

The numbers are already staggering, and the projections show only increases. For example, the International Telecommunications Union (2010) released research that cell phone numbers are expected to hit over five billion in 2010, after hitting 4.6 billion at the end of 2009. Those are phenomenal growth numbers, and those results are just the phones. Other mobile devices continue their growth as well.

People are already achieving real outcomes through mobile solutions. Industry case studies reveal closer customer relationships, faster solution times, easier tracking, and more. The lists keep growing.

As devices become more powerful, the possibilities for mobile are going to grow even more. It is now possible to deploy solutions across a growing numbers of platforms. And new opportunities continue to pop up.

Finally, the tools are becoming more powerful and easier to use. Providers are making sure that developed content can operate on a wide variety of platforms, and conversion tools mean content already developed can be more widely deployed.

## 4 Designing mLearning

The capabilities that are now appearing are poised to go beyond convenience or small increments and really transform how we learn and how we perform.

Imagine:

- A sales person pulling up the latest details on a (potential) client's situation right before walking in the door, then placing the order while with the customer
- An engineer listening to an audio version of the latest white paper from another group on the way to work
- An account representative using an interactive tool to optimize a customer's contract
- An executive finishing a compliance course on a plane away from the usual distractions
- A field service representative sharing a picture of the situation with a remote colleague to collaborate on a solution
- A learner answering a quiz question at a convenient time
- A procedure being filmed for later review
- Accessing a troubleshooting guide while visiting a remote site with a problem

These are not febrile imaginings, but are happening now. These are only indicative of the wide possibilities on tap for those who are ready to seize the initiative.

*What more do you want?*

Let us wrap a little more definition around mLearning. The eLearning Guild mobile learning research team, of which I was a member, struggled to come up with a definition. The obvious definition was easy, but there were some gray areas. We ended up with was:

*"Any activity that allows individuals to be more productive when consuming, interacting with, or creating information, mediated through a compact digital portable device that the individual carries on a regular basis, has reliable connectivity, and fits in a pocket or purse."*  
(eLearning Guild 360 Mobile Learning Research Report, 2007)

Let us break that down. A mobile device "allows individuals to be more productive." Not just to learn, but to be more productive. It is not about our personal use of mobile devices, although that's a jumping-off

point, but instead it is about systematically leveraging these devices to meet organizational needs. It's about delivering value through the strategic use of mobile technology. That's the topic of this book.

We do that through “consuming, interacting with, or creating information.” That's a fairly broad spectrum. How is that different from what we do with a desktop computer? A desktop computer will do that and have “reliable connectivity.” However, the mediation is not any digital device, but one that is “compact” and “portable” and “fits in a pocket or purse.”

Pay particular attention to this: “that the individual carries on a regular basis.” As stipulated, the implication was that this was a device you were familiar with and would be likely to have with you, not only in special circumstances. There are some exceptions to this that I would term mobile learning, but in general I think it is a very worthwhile perspective to consider.

What we are talking about here is not just about mobile devices delivering information to us. That is just the starting point. We're talking about interacting with them, using them to communicate with others, to capture our context and share it, and more. It is quite a large umbrella, but the goal here is to give you some conceptual understandings to get a handle on it to the point at which you can start incorporating mobile into your solutions.

The need to be met is to make individuals optimal performers, regardless of context. We can bring support to wherever needed, and whenever we need to. Meeting the need in the moment is what is on the table, and if we ignore that potential, we may be leaving money on the table, too.

My personal experiences are plentiful, and many revolve around when I travel. For one example, I was visiting back east with a team from overseas assisting me in working with our client. I used my phone to safely navigate from the airport to my hotel and then to the office. I used the calendar to get my confirmation number for my reservations. I looked up the office address in my notes. I was able to use the web browser to find a local store for the overseas team to go computer shopping. While waiting, I was able to check email and have a conversation with a colleague. I found a nearby bank as well when overseas credit cards were creating a problem. And, of course, was able to find restaurants to eat at that met our varied criteria and also snap pictures of my colleagues to take home. This all could be done on the fly, as needed, without advance preparation.

## 6 Designing mLearning

On a more recent trip, I took a new device, a tablet (the iPad) to supplement my smartphone, which I used to write a couple of documents as I traveled across the country. Once there, I used the tablet to present my talk, I took notes in meetings and mind-mapped the keynote, responded to email, tweeted the sessions, and read a book and watched a movie on the way back. This was in addition to the types of activities mentioned immediately above. I haven't taken a laptop on a trip since I bought the tablet to supplement my phone.

Let me be clear up-front, however. Things are still changing so fast that half of any suggested specific solutions would be out-of-date by the time you read this. The good news is that patterns, models, and frameworks have emerged that give us leverage to think about delivering mobile learning independent of any particular devices and tools. And that is what this book is really about—giving you the necessary background to understand and be equipped to take advantage of the mobile revolution. So, off we go. Let's start with the details.

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