

# Wearable Technology: How Learners Utilize and Benefit From It

Insights from Clarity Consultants





There's never been a better time to be working in learning and development. As the line between people and computers continues to blur, technology and daily life have become more interwoven, creating opportunities for fresh ways of engaging with content.

Wearable technology is meant to be an enhancement of the mobile experience—a way to engage with ubiquitous technology without being inhibited by the device itself. Apple Watches, GoPros, and FitBits, are today's most recognizable forms of wearable technology. These devices can both provide real-time information and take in data, creating a feedback loop that enhances knowledge and creates new pathways for learning.



### A Brief History of Wearable Technology

Wearable technology sounds new, but it has actually been around since the 1960s, when Edward Thorp built a shoe-based computer designed to predict the outcome of roulette spins in a casino. Two decades later, inventor Steve Mann built the first prototype of his EyeTap project, which resembled a primitive and clunky version of today's Google Glass. As the "quantified self" movement grew, by 2013, nearly 96% of wearable technology comprised fitness trackers.

Thought of as a disruptive technology because it changes the way we work, learn, and think, wearable tech has the potential to drastically change the landscape of learning. In fact, the sudden interest in these technologies has sparked debate over whether we're in a post-PC era, in which desktop computers will soon be obsolete. Some even wonder if this signals a post-smartphone era, where even mobile technologies as we know will be considered too cumbersome and detached to be useful.



### Who Is Using Wearable Technologies?

The momentum of the wearable tech industry is hard to quantify. Much like the cell phone—which advanced in a startlingly short period of time, becoming smaller and more powerful and ubiquitous—wearables have come a long way quickly. A 2015 report from *The International Journal of Technology Fusion* forecasts tremendous market growth in the next five years, and most of this growth will come in the entertainment sector.

However, the trend has at times hit periods of stagnation for two reasons: people aren't entirely convinced that wearables aren't simply redundancies of smartphones, and older generations struggle to see the practicality or necessity of becoming more embedded in digital technology.



Of course, trends for mainstream users do not necessarily correlate with trends for learning and corporate sectors, but they do provide insight into the ever diminishing divide between humans and devices, which will ultimately have a profound impact on a larger scale. Though a 2013 Educause brief calls the use of wearable technology in higher education "largely experimental," many institutions are taking the leap. For example, the School of Medicine at the University of California, Irvine, issued Google Glasses to all students to use for anatomy classes, clinical skill development, and hospital rotations.

Companies have found particular use for wearables in manufacturing. BOC Gases, which sells gas to manufacturing companies, sends their Thinkage service technicians to solve line problems and fix equipment using head-based computers that use hands-free screens and cameras.

In addition, healthcare companies see the value in these new technologies. Teva Pharmaceutical launched a 2015 partnership with Intel Corporation to develop a unique wearable device that will help people with Huntington disease monitor symptoms and gain more knowledge about their condition.



## Why Use Wearable Technology for L&D?

First, it's important to understand that wearable tech is an extension of augmented learning, a type of learning in which the online environment adapts to the learners by collecting data about them and offering individualized feedback based on their present interest and ability. Most of eLearning, for example, is a basic augmentation of the standard learning process.

Wearable technology often also creates a related but entirely distinct concept, augmented reality. *Augmented reality has three unique features:*

- **Combines the real world with the virtual**
- **Is interactive and in real-time**
- **Registers in three dimensions**

There are some specific advantages of this learning approach.

### Learner Engagement

Both types of augmentation favor learner autonomy and choice in the learning environment. Wearable technologies in particular engage learners on deeper levels by providing training that feels more interactive, realistic, and relevant. A compliance training that incorporates movement and real-time tracking is more likely to incite enthusiasm than one that simply comprises standard readings.

### Improved Learning Outcomes

Virtual reality environments in particular enhance the learning process and provide immediate feedback for particular actions without dire consequences. For example, a student in medical school can train for skilled surgical procedures using a VR headset without risking the lives of patients. In the meantime, the muscle memory gained from being able to perform a specific task in training (rather than simply reading about it or completing an online module) creates better memory retention of both successes and failures.

### Enhanced Collaboration

Digital devices sometimes have a reputation for making people more disconnected, but wearables offer new ways of sharing information, facilitating collaboration and community building. Productivity soars when employees are able to communicate with one another to share knowledge, ask questions, and engage in the social fabric of the company. Learners and instructors can also interact with one another with ease, making the learning process informal training smoother.



## **Big(ger) Data**

The type of data collected by wearables can be enormously complex and rich, as these devices have the potential to deliver information about usage, location, social interactions, and even can be out of scope for many projects, the possibility of having access to different types of data is a big plus for some.

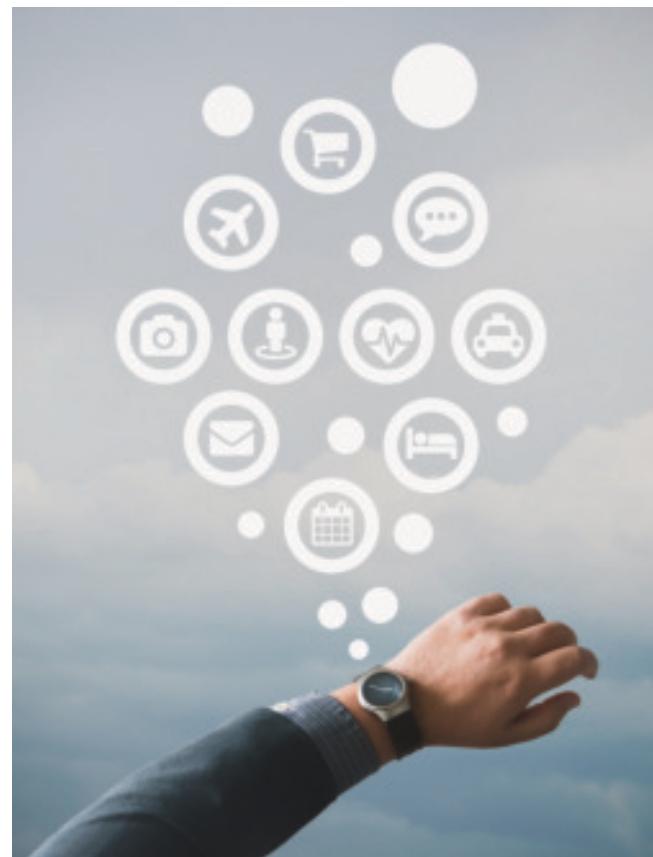
Two important questions that L&D experts will need to contend with in the adoption of wearable platforms include how to keep up with learner expectations and consumer trends that shape the way wearables are utilized, and how to manage and use tracked data in a secure and ethical way.

## **How can wearable technology be applied to organizational L&D?**

While the potential for wearable technologies is exciting, caution should be applied to new programs. In 2016, companies who utilize wearables are still considered “early adopters” who take on the unique gamble of moving forward with a technology that will almost certainly become more mainstream in the future, while being unsure what systems will be obsolete by the next quarter.

### **Other potential risks include:**

- **Cost.** Wearable technology implementation is expensive, both in terms of the devices themselves and the expertise required to design, train, and learn with them. With the industry still growing and changing, it can be precarious to invest heavily in technology that may or may not stick around.
- **Instructor learning curve.** As with any new technology, both designers and instructors will face a steeper learning curve when trying to adapt content to the platform. Most companies today find that have the experience to launch such new tools effectively, so it is more cost-effective to engage external consultants to lead the project.
- **Privacy issues.** Employees may be concerned that their personal data is secure enough and feel hesitant to participate in trainings that appear to intrude upon personal privacy.



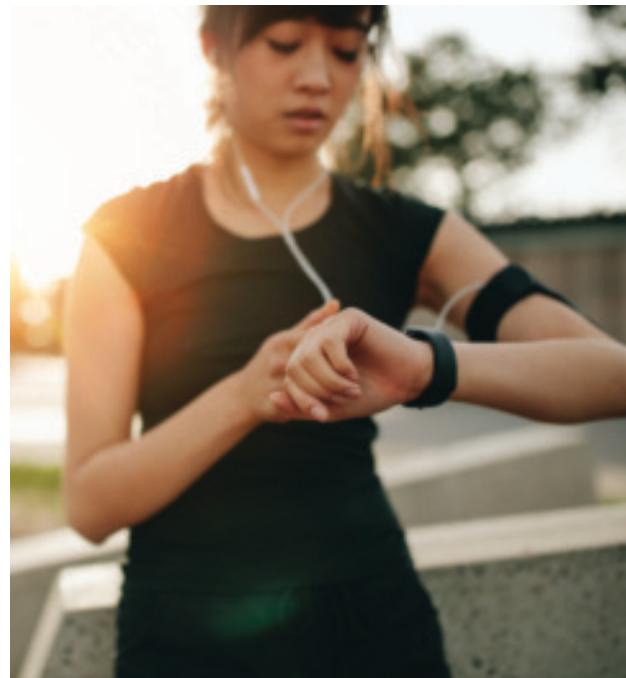


## Still ready to forge ahead? Consider these tips:

- **Determine whether wearables will advance or impede learning.** Does your company have the L&D expertise to effectively tie your content to this technology, or do you need to bring on external consultants?
- **Get learner buy-in.** Having a clear and secure data collection and management policy, excellent training, and affordable options for employees who don't already use wearable technology will help motivate learners to give the new program a try.
- **Consider other alternatives.** Are there small steps you can take that have the advantages of wearable technology but don't involve the huge investment? You might instead decide to explore augmented or adaptive learning, or mobile modules, to position yourself for wearables when they become more ubiquitous.

## References

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## The Bottom Line

**Wearable technology** is a booming market on the consumer front. While there is great potential for these tools to offer unique and powerful learning experiences, this is still a very new technology. Thus, unless they have pre-existing internal expertise, it is advised that companies contract with outside consultants who specialize in wearables and new technologies to mitigate the steep learning curve. In addition, these companies should carefully consider the cost and time investment, as well as the evolving market trends, before launching a full program.