Personal learning environments (PLEs) support self-directed and group-based learning, designed around each user’s goals, with great capacity for flexibility and customization. The term has been evolving for some time, but has crystallized around the personal collections of tools and resources a person assembles to support their own learning — both formal and informal. The conceptual basis for PLEs has shifted significantly in the last year, as smartphones, tablets, and apps have begun to emerge as a compelling alternative to browser-based PLEs and e-portfolios. Along with that, there has been a corresponding move away from centralized, server-based solutions to distributed and portable ones. Using a growing set of free and simple tools and applications, such as a collection of apps on a tablet, it is already quite easy to support one’s ongoing social, professional, learning and other activities with a handy collection of resources and tools that are always with you. While the concept of PLEs is still fairly fluid, it is clear that a PLE is not simply a technology but an approach or process that is individualized by design, and thus different from person to person.

Overview
PLEs serve a dual purpose: They enable students to determine the style and pace at which they learn while exposing them to technologies that they may not otherwise encounter in traditional classroom settings that will help prepare them for university and the workforce. Though PLEs often emerge in the same conversations as learning management systems, there is a distinct and sometimes overlooked difference between the two. Learning management systems by nature are more about the ephemera of learning than the actual learning itself; it is the gathering of course calendars, assignments, and all other relevant content in a single place where both students and teachers can access everything. On the other hand, PLEs are described as more about personalizing the environment and experiences at an individual level.

The underlying technologies needed to construct a personal learning environment are relatively straightforward and readily available now. For example, a person’s smartphone or tablet and the growing collection of apps they have chosen to download directly represents their assortment of interests. With hundreds of thousands of apps available in multiple marketplaces, it is easy to see how no two people share the exact same set of apps. Everyone has distinctive preferences and approaches learning and exploration differently. This is the basic premise of personal learning environments. Many educators now believe that the ways we learn informally can, and even should, inform the experiences we create at school.

Though effective personal learning environments center around the learner and not the technology, personal learning environments draw significantly on enabling technologies and tools. Cloud computing, for example, allows users to easily store the content they want, and cloud-based productivity tools such as Google Apps and WikiSpaces enable them to share their content with others, gather new and relevant items, write personal commentary, complete assignments, and more. YouTube, iTunes U, Facebook, and other social media and open content platforms provide users with an outlet to discover new content and disseminate their own. Using a mobile device or tablet as the home for a PLE is a natural and intuitive approach that makes it both easy to access and portable.

The essential idea behind personal learning environments is that students are put in charge of the learning process, with a focus on how they can support
their own needs and preferences. The goal is to give the student permission to make their learning as effective and efficient as possible.

**Relevance for Teaching, Learning, or Creative Inquiry**

In concept, personal learning environments would encourage students to approach learning in ways best suited to their individual needs. Visual learners, for example, might be able to obtain material from a different source than auditory learners. Students using PLEs may further benefit from the practice of keeping track of, and curating, their own resource collections. Personal learning environments are seen as a way to shift the control over learning — particularly its pace, style, and direction — to the learner. When building their own environments and collections of resources, students are learning new research and content aggregation tactics, perhaps without even knowing it.

Many software and service providers are looking to become the next generation portals for personal learning. Schools experimenting with PLEs have turned to Symbaloo (go.nmc.org/symba), Netvibes (go.nmc.org/netvi), Diigo (go.nmc.org/diigo), and Cengage (go.nmc.org/cenga) for simple dashboard solutions, or places to tag, store, and share content. Teachers can post predetermined lessons with educational components chosen by the student, and reflective of their interests. Providers such as the newly launched Junyo (go.nmc.org/junyo) integrate analytics to measure student learning across many different platforms and learning environments.

It remains unclear if these sorts of centralized tools will remain part of the evolution of personal learning environments. Some see PLEs merging with digital portfolios to provide a record of their learning that students can carry with them as they move through the various stages of their educational pursuits. This notion places the focus of PLEs on carving out a long-term identity for each student that may ultimately help them get into colleges and universities and provide prospective employers with extensive personal insight, a change that many feel is a move away from the basic tenets of the approach.

Despite the fact that there is a range of easy-to-use tools that could be used to construct personal learning environments, the emerging focus on helping students assess and select tools is still somewhat nascent. In the 2011 edition of this report, PLEs were placed on the far-term horizon because they were still in the conceptual development phase. In the past year, however, with the growing interest in smartphones and tablets, PLEs have gotten a conceptual “reboot” that now sees a distributed model as both practical and promising — and as such, the topic moved to the mid-term horizon as it becomes more clear how schools might approach implementation.

A sampling of applications of personal learning environments across disciplines includes the following:

> **Literature.** In a fifth grade class at Springside Chestnut Hill Academy in Pennsylvania, students are responsible for creating their own Wiki pages. They add content developed in Google Docs to videos, podcasts, web links, photos, and other materials gathered from the web. go.nmc.org/spring

> **Professional Development.** The University of Florida College of Education offers a free, open course for any educators that want to explore how personal learning environments impact inquiry in K-12 education. It offers a repository of resources and an area where teachers chronicle their classroom experiences in implementing PLEs. go.nmc.org/yzjtf
Science. Scitable is a free science library and personal learning tool that allows students to explore subjects including genetics, science communication, and career planning. Students can ask experts questions, join discussions, and get help with concepts they do not understand. Teachers have access to a network of resources to build their own online science classroom for their students. go.nmc.org/scita

Personal Learning Environments in Practice

The following links provide examples of personal learning environments in use in K-12 education settings:

Gooru
go.nmc.org/gooru
Gooru is a STEM education research, search, and curation portal that relies on crowd sourcing and collective intelligence. A team of educators is tagging curated teaching resources at the conceptual level. They identify factually correct, image rich web content that can aid students and teachers when they are learning about a specific subject, such as velocity.

The Learning Hub
go.nmc.org/yokoh
At Yokohama International School in Japan, each student has their own blog that develops into their electronic portfolio and personal learning environment. Students use a wide variety of web-based tools to connect, collaborate, create, and share with both local and global audiences.

LTISD Learning Portal
go.nmc.org/ltisd
In Texas, Lake Travis Independent School District students have 24/7 access to a web-based learning environment from school, home, and their mobile devices. Online textbooks, digital supplemental resources, subscription research services, and teacher notes, presentations, and simulation tools are organized in the portal. The system was built so that thousands of students can access content on demand, at their own pace.

The PLAYground
go.nmc.org/thepl
The PLAYground is an online platform for the curation, creation and circulation of user-generated learning activities that encourages children and adults to learn and teach each other. It is designed to cultivate and promote learning activities centered on the idea of a challenge. Each challenge synthesizes a hands-on learning activity and encourages participants to collaborate, remix, and disseminate information.

Shared Learning Collaborative
go.nmc.org/shared
This project is developing a common data layer and encouraging independent software vendors to build personalized learning applications for five pilot states. In the process, the project is establishing common ways to exchange education data among systems and feed information to students, teachers, administrators and education scientists.

Trail Shuttle
go.nmc.org/trail
Developed in Singapore, Trail Shuttle is a self-directed learning platform that uses technology to enable students to build their own learning programs. A web-based tool kit helps students create their programs, a mobile app lets them explore and experience those programs from wherever they are, and a monitoring app allows teachers to track student progress.

For Further Reading

The following articles and resources are recommended for those who wish to learn more about personal learning environments.

5 Video Case Studies of E-portfolio Implementation + an Implementation Toolkit
go.nmc.org/5video
(Tony Bates, Online Learning and Distance Education Resources, 3 April 2012.) JISC has created an e-portfolio implementation toolkit based on 12 UK, four Australian, and three New Zealand institutions that documented their experiences of using e-portfolios in various courses. There are also videos of five UK universities to serve as examples.
Happily For iPad Helps Curious Kids Discover The Web...Safely
go.nmc.org/happl
(Sarah Perez, Tech Crunch, 17 April 2012.) This article explores the new iPad app “Happly,” a collection of original and curated content for kids, including online videos, games, and stories. The app focuses on subjects that children deem fun (dinosaurs, outer space, etc.) and integrates educational features and information.

Preparing Students to Learn Without Us
go.nmc.org/prepa
(Will Richardson, ASCD Educational Leadership, February 2012.) This article emphasizes how teaching can be geared toward the specific interests of each individual student, making topics more relevant and interesting. As our culture moves toward customization of gadgets, playlists, and search results that reflect each individual’s taste, many education models are becoming more individually focused.

Students Want Personalized Learning, Mobile Technology
go.nmc.org/stuwan
(Laura Devaney, eSchool News, 26 April 2012.) A recent study facilitated by Project Tomorrow shows students’ and parents’ approval of in-class mobile devices to support more personalized learning experiences. This article provides specific examples of how students are using technology to learn new concepts, including via social media platforms.

TED’s New Site Turns Any YouTube Video Into a Lesson
go.nmc.org/tednew
(Sarah Kessler, Mashable, 25 April 2012.) TED’s new online “flip it” tool allows users to take any YouTube video, add supplemental content and resources, and track participation and responses to create a complete lesson, which has direct implications for personalized learning. This article includes images depicting an example of a finished video lesson.

This Time It’s Personal
go.nmc.org/thistime
(Jennifer Demski, The Journal, 4 January 2012.) This article emphasizes the crucial role of changing the current classroom infrastructure to make it more student-centered in order to incorporate technology in a transformative way. The author states that incorporating new technological tools into outdated teacher-centered structures will not be effective.

Many educators now believe that the ways we learn informally can, and even should, inform the experiences we create at school.