INNOVATIVE LEADERSHIP
Insights From a Learning Technologist

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Professor Ricardo Torres Kompen is a leading proponent for, and researcher in, personal learning environments (PLEs). During his interview, Torres Kompen clarified his research on PLEs, particularly the digital toolbox within PLEs. He elaborated on experiences with implementing PLE initiatives, personal insights on using social media and Web 2.0 technologies, and the role of PLEs in designing learning for an increasingly complex, networked community in the digital age. Located in Barcelona, Spain, Torres Kompen has traveled extensively and worked in diverse settings. His work has a broad impact, including educators and students, formal and informal learning environments, from primary school students to lifelong learners. The innovative leadership traits referred to as the *Innovator's DNA* (Dyer, Gregersen, & Christensen, 2011) was used to contextualize major developments in Torres Kompen's contributions to research and practice in PLEs.

PERSONAL LEARNING ENVIRONMENTS: OVERVIEW

Personal learning environments (PLEs) are a set of digital tools, communities, services, and enterprises that individuals incorporate to assist them in their learning and academic pursuits (EDUCAUSE, 2009). Each learner can organize their PLE to meet specific requirements to assist him or her in achieving (formal and informal) learning goals. A PLE typically incorporates web-based tools prevalent among students who prefer learning in digital environments (Torres Kompen, Edirisingha, & Monguet, 2012). The plethora of digital devices available to today's learners (particularly in advanced economies) has expanded the opportunity for learning beyond the constraints of the traditional classroom.

PLEs are often looked at in the context of *virtual learning environments* (VLEs). VLE's

Spain Country Information

Population: 47 million
Urban population: 77%
Life expectancy: 81.27 years
Literacy rate: 97.7%
Internet users: < 28 million

Source: Central Intelligence Agency (2012b).

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(roughly akin to the concept of learning management systems in the United States) are environments licensed by the institution, with access restricted to those formally enrolled in a particular course or institution. VLEs first gained momentum in higher education as a delivery platform for distance education programs delivered by traditional universities. At the outset, those distance programs targeted so-called "nontraditional" students (students who, under other circumstances, would be unable to return to university studies) and were, as such, "relegated" to working from a distance, anchored to the institution's server and education delivery platform for purposes of participating in the teaching and learning process. This has severely restricted distance learners from freely engaging with other students outside the confines of the university website or e-learning platform. Thus, VLEs are at times less-than-optimal for students and teachers, and their management presents institutional challenges (Torres Kompen et al., 2012).

PLEs are gaining popularity for several reasons. One important aspect of PLEs is learner autonomy. Learners can access information more efficiently through an increasing number of technologies, referred to as "Web 2.0" tools. Indeed, relative to VLEs, both students and teachers often view PLEs favorably. From Clark's (2001) "Media are mere vehicles" (p. 1) argument, to the recognition of those users referred to as digital residents (digital natives), PLEs have grown in popularity from the onset early in the 21st century (Torres Kompen, 2012).

The concept of a PLE has been around for some time; Olivier and Liber (2001) are credited with conceptualizing the framework that is the foundation for the last decade of research and development. Torres Kompen, the expert interviewed for this article, has been an invaluable member of an active community of enthusiastic researchers exploring PLEs and their impact on how we define the learning landscape. Torres Kompen's focus on the digital toolbox aspect of this learner-centered technology, in particular, has yielded promising insights for a future in which learning and technology are pervasive, seamless, and continuous. There are interesting parallels to be drawn between recent developments in the PLE research community with the notion of innovative leadership, a concept that will be explored briefly in the next section.

INNOVATIVE LEADERSHIP

Innovation is a central construct to effective practice, policy, and research in learning technology. Surry (1997) points out that instructional technology is "inherently an innovation-based discipline" (p. 1). Professionals in this field focus on "attention to practitioner concerns of design, technology integration, and other forms of professional problem solving" (Wilson, 2005, p. 10). As technology continues to move forward, one of the challenges facing learning technologists is the adoption of successful strategies for deploying innovative technological systems and solutions to meet learning needs in a rapidly changing society.

In 2011, Dyer et al. reported on a 6-year study, whose goal was to determine the "origins of creative—and often disruptive—business strategies for particularly innovative companies" (p. 62). Referred to as the "innovator's DNA," this framework identifies five unique discovery skills that set apart innovative leaders: associating, questioning, observing, networking, and experimenting.

ABOUT THE EXPERT: RICARDO TORRES KOMPEN

Ricardo Torres Kompen began his professional career as a chemical engineer working for the world's largest petroleum refining operation in Venezuela. Regarding this as a "second-best" career choice (his intent was to follow his family legacy and become a teacher), he returned to academia to earn a master's degree after working as a chemical engineer for 5 years. In graduate school, he

was offered a teaching position, merging two professions into one to become a professor of chemical engineering.

Several years later, Torres Kompen relocated to Barcelona to pursue his PhD, simultaneously working as a professor for the Escuela Superior de Estudios Internacionales (ESEI) and LaSalle University. Torres Kompen's initial doctoral research focus was on learning styles. In the sixth year of his PhD, he contacted Gilly Salmon, who at the time led the Beyond Distance Research Alliance at the University of Leicester, and was offered the opportunity for a 2-month stay. As a result of that visit, Torres Kompen started to get involved in PLE research merging his existing knowledge of learning styles with his newfound interest in PLEs (Torres Kompen, 2012).

In 2008, Torres Kompen gained permission to use his student population in Spain to pilot a study that focused on PLEs. His study took a more extended view to include creating online, or personal digital identities, which extended learning beyond traditional VLE restrictions. As noted earlier, the overarching point of comparison between a PLE and a VLE is that the latter is generally managed (hosted) by the educational institution, and adopts a course-centered approach (limiting access to those participants formally enrolled in the course). The study's initial efforts focused on showing students how to create their own PLEs and how to make best use of them **(**Torres Kompen et al., 2012**)**.

In 2010, Torres Kompen was on the original organizing committee for, and the local organizer of, the first annual Personal Learning Environments conference. This conference is a venue for exchanging "ideas, experiences, and research around the development and implementation of PLEs—including the design of environments and the sociological and educational issues that they raise." (PLE Conference, 2013). Now in its fourth year, the 2013 PLE Conference is scheduled to take place simultaneously in Germany and Australia (Torres Kompen, 2012).

Beyond the PLE conference, Torres has assumed a leadership role in setting up several other PLE-focused communities and partnerships, too. For example, he now works as part of TacTic, a team focused on the application of information communication technologies (ICTs) in education. TacTic is part of Entrelaza, an association composed of professionals from diverse areas, bound by a focus on technology, education, and social projects. Entrelaza is involved in training, research, and technical advisory services, and has established relationships and alliances with a broad range of public and private partners.

INNOVATION

In 2008, Torres Kompen had what he called his "aha" moment. It was a moment in which he began to fully realize the all-encompassing potential of PLEs. He had been invited to participate in an action research study involving PLEs. "After that, it evolved. I adopted it as part of my PhD research, and then followed the action research approach" (Torres Kompen, 2012). As part of that study, Torres Kompen, Edirisingha, and Mobbs (2008) describe PLEs as "a framework for incorporating Web 2.0 tools and services chosen by the learner for collecting and processing information, connecting people, and creating knowledge" (p. 1). In a subsequent paper, Buchem, Atwell, and Torres (2011) note that "capturing the individual activity or how the learner uses technology to support learning, lies at the heart of the PLE concept" (p. 1). Though many students may be familiar with the term "Web 2.0 tools," this description takes on a new meaning with PLEs. Although it encompasses these same tools in addition to "a growing matrix of resources that they select and organize" (EDUCAUSE, 2009, p. 2), it recognizes that they can be used in both formal and informal environments, either self-standing or in association with other technologies to gain knowledge. By the time of the 2011 PLE conference, whenever Torres Kompen referred to PLEs, his

point of reference was the digital toolbox component of PLEs (Torres Kompen, 2012).

ANALYZING THROUGH THE LENS OF INNOVATIVE LEADERSHIP

Innovative leadership as described by Dyer et al. (2011) is detailed in five dimensions of innovative leadership, as previously discussed. To further contextualize recent developments in research and development with PLEs, the remainder of this article will focus on the role of innovative leadership, by Torres Kompen and his colleagues, in advancing our understanding of learning in a complex and changing learning landscape. Proponents of PLEs argue that research and development in this area may be one of the most advanced movements regarding redefining the teacher-learner relationship, reducing learner isolation, and transitioning the teaching role to one of facilitation of learning. This can yield increased autonomy for the learner: a learner who is at the center of the PLE, who directs the flow of information, and manages the process (in stark contrast to the learner in more traditional environments, who often perceives dependence on the instructor for all information and learning). Such notions at the core of the PLE movement challenge the role of the teacher as well as many of the principles underscoring traditional methods of instruction; aligning itself with contemporary theories such as activity theory, multiple intelligences theory, and andragogy, which more adequately describe learners in their learning environment of the digital age (Buchem et al., 2011; Knowles, Holton, & Swanson, 2005; Merriam, Caffarella, & Baumgartner, 2007).

QUESTIONING

To generate innovations and shepherd innovations into the workplace, we must challenge assumptions and pose questions. Dyer et al. (2009) explain that most managers, for example, will "focus on understanding how to make existing processes—the status quo—work a little better … innovative entrepreneurs, on the other hand, are much more likely to challenge assumptions" (p. 63). Within the PLE community, a key area of focus has been on questioning the status quo in educational practice. The fundamental principles underscoring PLEs suggest that a significant paradigm shift is necessary to enable effective learning for the world of today and tomorrow: a redefined role for the learner and the teacher, increased learner autonomy, seamless integration of formal and informal learning, flexible and portable technology based learning (Buchem et al., 2011; Torres Kompen et al., 2012).

Referencing experiences with implementing PLE-related innovations in formal education, Torres Kompen (2012) commented further on the questioning dimension; "Innovations work by example. Teachers will not adopt them until they can see the benefit. It is a disruption in learning, and until they see the benefit, they are not going to take the time to learn it." He explained that it requires work and effort on the part of the teacher, but once training is completed "you have this toolbox and you can choose exactly what you need in a moment's notice, you will see the benefit, and have many different ways to present material to your students" (Torres Kompen, 2012). Some teachers drop out, continuing with their traditional teaching practices. As such, among teachers—as is the case in every profession—there are those who prefer the status quo to questioning alternatives that may be more effective in engaging students and facilitating learning.

OBSERVING

Learning technologists recognize observation as a critical tool for gathering needs assessments and evaluation data. Dyer et al. (2009) state, "Innovators carefully, intentionally, and consistently look out for small behavioral changes in order to gain insights about new ways of doing things" (p. 64). Part of observation involves gathering data and then analyz-

ing it accurately. Along with the acquisition and application of PLEs are the data and tools necessary to analyze trends in behaviors. According to EDUCAUSE (2009) "In an environment where information is ubiquitous and needs only to be located, there is a greater premium on skills that support fast and accurate access to information and on the ability to assess that information" (p. 2). PLEs rely on technology-based tools that enable exhaustive analysis of data and patterns, so innovators can determine how to make PLEs more effective, and continue to move the field forward in exciting and sometimes unexpected ways. Built-in metrics such as Google Analytics can prove very useful to PLE researchers and practitioners, and a crucial tool for innovative leadership through observation.

In education in particular, however, much observation is qualitative in nature. For Torres Kompen and his colleagues, a primary audience is K-12 (primary and secondary school) teachers and students. When asked about his involvement with teachers, Torres Kompen noted that his focus had evolved over time. Initially he focused exclusively on guiding teachers in using technology. Through observation, Torres Kompen realized his efforts were most effective when applied to teaching teachers to learn how to take advantage of new technologies and embed them into instructional practice. The process then became transferrable from one medium to the next, making the learning of new technologies easier for the teachers. Ultimately, teachers developed a transferable set of skills for learning new technologies and for applying them to the teaching and learning process. Torres Kompen illustrates his experience with the case of a teacher nearing retirement. Though required to take his 1-year course, she had a genuine interest in learning how to use the various technologies. By the end of the first class, the teacher explained that she would be a problem for him, as she only knew how to use the school technology for e-mails and administrative reporting duties. By the end of the 1-year course, however, she had not only mastered the technologies useful for her students; she had become the person most relied upon for help within her school system.

EXPERIMENTING

PLEs often generate an active learning community. Community members often dedicate significant time to sharing insights and resources regarding "what works," "what needs to be improved," and new ideas for facilitating individual and collective needs of PLE participants and proponents. Information gathered by PLE learners is shared through a host of social networking sites, including Facebook, Twitter, Instagram, LinkedIn, and Tumbler, to name a few. With all that open sharing and exchange of information, some may express concerns about plagiarism. However, as easily as learners can acquire and share the content, teachers can verify it (for plagiarism).

According to Torres Kompen (2012), this sharing and active participation among learners was evident in a 2-year study he recently completed, which focused on the development of PLEs. Building on the findings from this study, Torres Kompen was invited to write a chapter for an edited textbook that has since been adopted by several major instructional technology programs in the United States (Torres Kompen et al., 2012).

Research such as described above is consistent with what Dyer et al. (2011) refer to as experimenting, an important dimension of innovative leadership, noting that much like scientists, "innovative entrepreneurs actively try out new ideas by creating prototypes and launching pilots…. Experimenters construct interactive experiences and try to provoke unorthodox responses to see what insights emerge" (p. 64). Torres Kompen et al. (2012) state the objective of their study was to apply their conceptual framework of creating PLEs: "We guided participants in the development of their own PLEs and then gathered empirical

evidence on the participants' development of, and engagement with, their PLEs" (p. 229).

There is a growing foundation of research on PLEs. In fact, Buchem et al. (2011) cite over 100 publications, "encompassing conference papers, reports, reviews, and blog articles … recognizing that research in this field stems from different scientific communities and follows different perspectives" (p. 1).

NETWORKING AND ASSOCIATING

Networking is an important dimension of the innovator's DNA. According to Dyer et al. (2009) "devoting time and energy to finding and testing ideas through a network of diverse individuals gives innovators a radically different perspective" (p. 65). They note that innovative leaders "go out of their way to meet people with different kinds of ideas and perspectives to extend their own knowledge domains" (p. 65). Likewise, Dyer et al. (2009) identify associating as a significant aspect of innovative leadership, describing it as the ability to "successfully connect seemingly unrelated questions, problems, or ideas from different fields" (p. 63).

Within the PLE community, and evidenced in Torres Kompen's professional activity, networking and associating are an integral mechanism by which new knowledge is constructed, new problem areas are identified, and global partnerships are built and perpetuated. In addition, these two dimensions of innovative leadership tend to manifest themselves in ways that overlap.

The annual Personal Learning Environments conference is an example of an event that, in design and intent, focuses on both networking and associating. The conference emphasizes collaboration and innovation, inviting multidisciplinary perspectives to align the PLE agenda with broader global strategic priorities. Adopting a "practice what you preach" approach, it makes extensive use of social media and Web 2.0 technologies to enhance participant preparation, maximize participation during the event, and create reaccessible and reusable knowledge and learning products as conference archives.

As noted earlier, Torres Kompen has been an active and integral member of the PLE conference since its inception. In 2012 he was invited to deliver, together with Gráinne Conole, the conference unKeynote. In Aveiro, Portugal, copresenter Conole (2012) stated, "I prepared a presentation, but when I met with Torres Kompen I realized that the format was wrong, it was too much like a traditional one-way talk" (p. 1). Torres Kompen had asked attendees in advance to explicate their thoughts on specific questions. He then sent a "call for responses" through social networks including Twitter, Facebook, and Cloudworks, to solicit reflective answers (by text, video clips, etc.), so that these responses could be integrated into the unKeynote event in real-time. Moving beyond the conventional approach for hosting a conference, the unKeynoters yielded more meaningful information than would be likely in a traditional keynote. They secured involvement of people globally, through their PLEs, transcending boundaries of time, space, and distance. Conole and Torres Kompen transformed the event into a discussion, covering a range of ideas from an audience representing diverse disciplines, regions, and perspectives—a distributed yet networked community. Adopting association leadership strategies during the unKeynote set the stage for a generative conference experience, promoting multiple frames of reference, and problem posing as well as problem solving.

Personally, Torres Kompen maintains an active online identity (using Twitter, LinkedIn Facebook, and Skype, among others), both to network and to tackle research and development challenges requiring new ways of thinking and learning. Torres Kompen mentioned that although not a "tool" per se, he refers to his smartphone as the "Swiss army knife of digital tools that does everything"; one tool in his digital toolbox that allows him access to his online digital identity at all times. He further

mentioned Twitter as another innovation for which he originally found little use, and which has become a preferred point of contact and communication. Although a self-described "PC guy," he was an early adopter of the iPhone, on which he multitasked during our Skype interview. Originally, a proponent for neither Apple nor Twitter, he has found both to be invaluable for business, education, and social purposes. However, he is quick to reaffirm that it is not the specific tool that is important, much as the access to the information that it affords (Torres Kompen, 2012).

CONCLUSION

Most leaders are attributed with good ideas; however, what separates good leaders from innovative leaders is their creative impact. Dyer et al. (2011) summarize a key insight from their research: "one's ability to generate innovative ideas is not merely a function of the mind, but also a function of behaviors … if we change our behaviors; we can improve our creative impact" (p. 3). This article examined the research and development trajectory of Ricardo Torres Kompen, and the PLE community as a whole, identifying the traits of innovative leadership evidenced in each. Emerging from this analysis we can see that PLEs, to which Torres Kompen is making significant contributions as researcher and practitioner, are positioned to make a significant impact on learning at all levels, in all modalities, whether formal or informal.

NOTE

The full audio recording for the interview on which this article is based can be accessed using the QR code below, or by going to http://tinyurl.com/InterviewQRDE.

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