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Reorienting self-directed learning for the creative digital era

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Abstract

Purpose – The purpose of this paper is to identify the new role that human resource developers play in the globally connected workplace. Towards that end, this paper explores the changing landscape of self-directed learning (SDL) within the digital ecosystem based on the concept of World 2.0.

Design/methodology/approach – This paper reviews and builds on the literatures of self-directed learning and Web 2.0 technologies to explore how self-directed learning is being transformed in the creative digital era.

Findings – The paper outlines five transformations that change the landscape of workplace learning in the creative digital era: virtual collaboration, technological convergence, global connectivity, online communities, and digital creativity.

Practical implications – This paper gives extensive guidance on how HRD specialists and practitioners can transform their strategies to adapt to the training needs of employees in the creative digital era. The paper provides new ideas and vision for industrial trainers and human resource development practitioners on self-directed learning.

Research limitations/implications – This article provides some future research areas and limitations.

Originality/value – This paper opens up new possibilities for self-directed learning and discusses how self-directed learning might be transformed in the light of technological and workplace changes. In particular, self-directed learning might decrease the HRD/training costs significantly while providing employees with just-in time training.

Keywords Self-directed learning, World 2.0, Web 2.0 technologies, Social networks, Human resource development, Training, Digital ecosystem, Online communities, Digital creativity, Virtual collaboration, Technological convergence, Global connectivity

Paper type Conceptual paper

Introduction

As the scale of current economic and social changes in Europe demand new approaches to education and training, the significance and centrality of self-directed learning in European workplaces is increasing (European Commission, 2009). The purpose of this paper is to identify the new vision and roles that human resource development practitioners need to have in relation to self-directed learning in the globally connected workplace. Towards that end, this paper explores the changing landscape of self-directed learning (SDL) within the digital ecosystem based on the concept of World 2.0 (Karakas, 2009).



This paper begins with a literature review on self-directed learning. Then it builds on the literatures of SDL and Web 2.0 technologies to explore how SDL is being transformed in the creative digital era. The paper outlines five transformations that change the landscape of employee learning and engagement in this era:

- (1) virtual collaboration;
- (2) technological convergence;
- (3) global connectivity;
- (4) online communities; and
- (5) digital creativity.

Finally, the paper provides recommendations for human resource development (HRD) practitioners to enable SDL in this changing landscape. The paper also discusses limitations and implications for HRD research.

Literature review on self-directed learning

Self-directed learning (SDL) appeared within the discipline of adult education during the 1960s (Hiemstra and Judd, 1978) and it has developed rapidly since then (Guglielmino, 2008). There are various definitions of SDL in the literature. SDL has been defined as “a process in which individuals take the initiative, with or without the help of others, in diagnosing their learning needs, formulating learning goals, identifying human and material resources for learning, choosing and implementing appropriate learning strategies, and evaluating learning outcomes” (Knowles, 1975, p. 18). It has also been defined as an independent pursuit involving a philosophy of personal autonomy and self-management (Candy, 1991); learners’ psychological processes that are purposefully directed to gain knowledge, solve problems, or develop a skill (Long, 1994); self-directed study where an individual accepts responsibility for designing and pursuing an educative activity (Houle, 1988, p. 92); a training design where trainees master packages of material at their own pace without instructor’s aid (Piskurich, 1993); and the most basic response to newness, problems, or challenges in the environment (Guglielmino, 2008). In the SDL literature, self-directed learners are characterised as individuals who undertake learning for personal growth (Merriam and Caffarella, 1999); assume primary responsibility for planning, implementing, and evaluating the learning process (Brockett and Hiemstra, 1991); diagnose their own needs and formulate their own goals (Spencer and Jordan, 1999); identify, assess, and select appropriate learning resources and strategies (Candy, 1991); and monitor and evaluate their own progress (Candy, 1991; Lieberman and Linn, 1991).

Empirical research has demonstrated a number of positive effects of SDL in the workplaces including increased performance (Artis and Harris, 2007), cost savings in training and development programs (Durr, 1992; Guglielmino and Murdick, 1997), increased ability for critical thinking and questioning (Candy, 1991), increased confidence and problem solving capabilities (Durr, 1992), sharing knowledge and building networks with others (Rowland and Volet, 1996), stronger affective commitment (Cho and Kwon, 2005), and a sense of meaning at work (Kops, 1997).

Self-directed learning in the creative digital era

The dramatic shifts in technology and the workplaces are transforming the landscape and dynamics of SDL. Some of the technological shifts include the popularisation of online learning or web-based learning, digital tools, Web 2.0 technologies, social networking tools, and social media (Song and Hill, 2007). The new learning environments are convenient, versatile, enjoyable, non-linear, interactive, and user-tailored (Fischer and Scharff, 1998; Candy, 2004). In this context, self-directed learners' responsibility, control, and effectiveness are higher than the past (Vonderwell and Turner, 2005). Furthermore, with the help of these technologies self-directed learners are constructing knowledge instead of recording or memorising it (Harel and Papert, 1991). Some of the workplace changes affecting SDL include empowerment, flexible work arrangements, telecommuting, digitalisation, and workforce mobility. In addition, there is a shift from "mechanical to computerized, information based to knowledge based, individualized to team based, and hands-on to minds-on" workplaces (Benson *et al.*, 2002, p. 392). These workplace changes require employees to learn how to learn, solve problems, cope with uncertainty, and be creative (Stansfield, 1997). Employees themselves – rather than their organisations or managers – hold responsibility for their own learning and growth (Baskett, 1993). In a similar vein, Hall's (2002) concept of protean careers describes how individuals engage in self-direction and take responsibility for continuous learning for their careers. Recent HRD literature suggests that a key aspect of learning and development of individual employees is self-directedness and self-regulation (Littlejohn *et al.*, 2012; Nesbit, 2012; Park, 2009; Smith *et al.*, 2007).

Although the literature above provides information on the technological and workplace factors influencing SDL, little research has been conducted on how the nature of SDL is being transformed in the creative digital age. This paper builds on the emerging concept of "World 2.0" (Karakas, 2009) to discuss and describe the transformations affecting SDL. We define "World 2.0" as an interactive and immersive digital ecosystem or mega-platform where employees create and share knowledge (e.g. Wikipedia, del.ici.ous), innovate and collaborate (e.g. InnoCentive), have fun and entertainment (e.g. Facebook, Second Life), interact, network or connect with friends (e.g. LinkedIn, Twitter), share their photos (e.g. Flickr), make creative films (e.g. YouTube), and pursue self-directed learning.

The shift to World 2.0

Web 2.0 technologies (i.e. web-based interactive and connective read/write technologies) are at the heart of this new digital ecosystem. The new generation internet tools, so-called Web 2.0 technologies (O'Reilly, 2005) have fostered the growth and popularisation of web-based communities, social networking sites, video sharing sites, wikis, and blogs. Web 2.0 technologies have changed the digital ecosystem such that information is constantly being generated, updated, and converged into new patterns and forms expanding the utility and life of the original content. The vast information accumulated in the digital ecosystem provides infinite opportunities for companies if they support their employees in pursuing self-directed learning. These opportunities include flexibility to access, just-in-time delivery, cost effectiveness, knowledge sharing, and talent development (Garavan *et al.*, 2012; Wang, 2011). Web 2.0 technologies have a significant positive impact on SDL; enabling professionals from

all over the world to collaborate, interact, participate, share, and give feedback in the process of learning and development.

World 2.0 reshapes the world in unprecedented ways and in a rapid pace: there are 184 million bloggers worldwide and 346 million people read these blogs (Winn, 2009) and the numbers are growing. Universities (e.g. MIT, the Open University) and non-profit organisations (e.g. TED Talks) offer high-quality online content for free, while libraries make the majority of their archives and collections accessible. The semantic web (Web 3.0) allows applications to understand sentences and natural language. With one click, today's learners have access to virtually unlimited information and networks related to their needs and interests. In their everyday lives, learners have become mobile data users – sending e-mails, sharing photos, downloading songs, and using social networking sites. The learning platform even extends to multiplayer online games: players feel themselves like they are part of a simulated universe with the help of ever-improving 3D graphics, CAD software, interactive player input, and realistic environmental effects (e.g. wind forcing and fog) that complete the experience. In this way, players can learn many things by doing in safe and comfortable places of their choice. These changes signal a new world – World 2.0 – that dramatically changes the nature of SDL.

Web 2.0 technologies build on the technologies of computer-based training and e-learning and move them further. The challenge and pressure of “just-in-time” training for HRD practitioners has been recognised for a while (Wagner and Flannery, 2004). As Web 2.0 provides innovative tools for self-directed learners, HRD developers and industrial trainers need to understand how they can design strategies to facilitate the use of Web 2.0 technologies within their organisations, increase the skill level of employees, and give self-directed learning an even larger share in their training plans. These strategies might be very beneficial for organisations given the technological changes requiring fast adaptation and learning by employees as well as the financial challenges posed by traditional training programs (Rainsford and Murphy, 2005).

Five transformations changing the landscape of learning in the creative digital age

Next, we describe five transformations that characterise the changing landscape of learning in the creative digital age:

- (1) virtual collaboration;
- (2) technological convergence;
- (3) global connectivity;
- (4) online communities; and
- (5) digital creativity; which we will describe in terms of their implications for SDL (see Figure 1).

Based on the implications of each shift, we come up with recommendations for HRD practitioners.

Virtual collaboration

The first transformation is virtual collaboration, which is best described in the path-breaking work of Tapscott and Williams (2006): “Wikinomics”. Wikinomics is

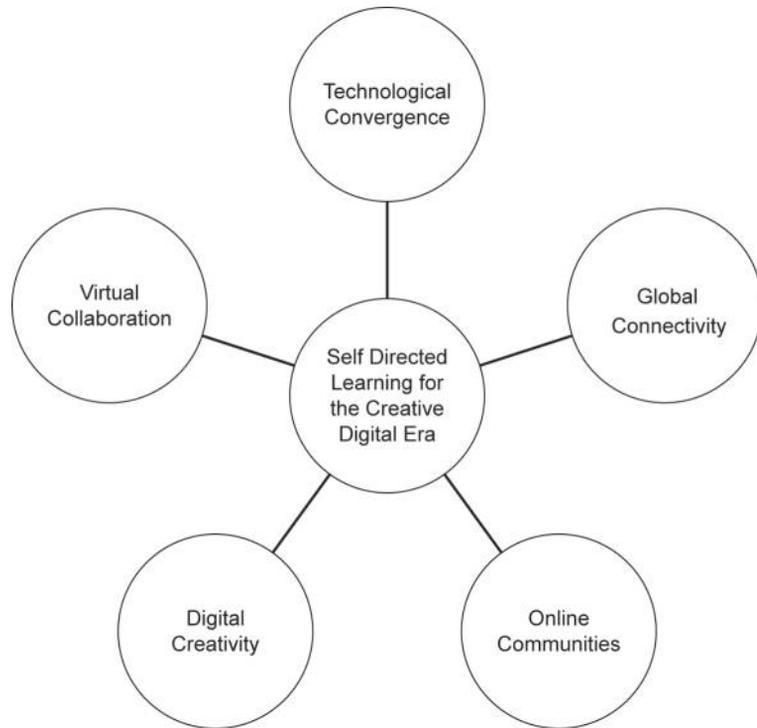


Figure 1.
Five transformations
changing the landscape of
SDL

defined as the new art and science of collaboration (Tapscott and Williams, 2006) where billions of connected people collaborate and participate in innovation, wealth creation, and social development on the virtual global platform of the Internet. The knowledge, brains, and resources of over one billion people online worldwide are self-organising into a massive collective force; which is denoted as the “global brain” (Tapscott and Williams, 2006). Members of the global brain collaborate in diverse ways on joint projects as they use wikis or Google documents, update their status on Facebook or Twitter, communicate with Skype, share files through Dropbox and Sugarsync, and upload videos to YouTube. These tools have paved the way for easiest, cheapest, and fastest forms of collaboration in history. Millions of connected individuals can now actively participate in innovation to advance arts, culture, science, and education. Virtual collaboration has been the cover story of *Time Magazine*, where the person of the year has been announced as “you” – referring to the collaboration revolution on the web and the new digital democracy and citizen activism enabled by the small contributions of millions of people on the Net (Grossman, 2006). Virtual collaboration is described in the book of Tapscott and Williams (2006) as follows:

Profound changes in the nature of technology, demographics, and the global economy are giving rise to powerful new models of production based on community, collaboration, and self-organization rather than on hierarchy and control. Masses of people can participate in the economy like never before; creating TV news stories, sequencing the human genome, remixing their favorite music, designing software, finding a cure for disease, editing school texts, inventing new cosmetics, and even building motorcycles. Employees drive performance

by collaborating with peers across organizational boundaries, creating what we call a “wiki workplace” (pp. 1-2).

These trends have been changing the nature and the face of SDL. In the past, self-directed learners pursued learning in relative isolation (listening to radio or TV, receiving information by post, or using CDs). SDL now takes place in collaborative virtual environments where users share knowledge, offer each other resources, recommend learning tips, and exchange ideas with each other. With these collaboration spaces, SDL is being transformed into a set of individualised learning solutions designed through inquiry based, networked, digitally enabled collaborative conversations. Virtual collaboration enables self-directed learners to:

- access diverse learning networks that facilitate the joint production of knowledge and innovation;
- use peer support and assistance and get feedback from peers; and
- tap into the best ideas and innovations in the cyberspace.

The key change here is that the process of SDL becomes a much more social and networked process as learners can collaborate with people worldwide.

Technological convergence

The second transformation entails the convergence of new technologies of information and communications. Technological convergence is the principle that the various media, such as radio, TV, newspapers, CD players, video recorders, telephones, mobile devices, and the Internet, are all coming together to form one global information channel. Professionals and managers all over the world encounter new challenges and opportunities as the developments in telecommunications, the spread of wireless, fibre-optic, and broadband technologies are abolishing distances. Moreover, advancement in these technologies, so-called information and communication technologies (ICTs), enables different media (e.g. mobile devices, satellite systems) to transfer all kinds of information and services, such as images, sound, and data. One of the implications of technological convergence is the shift from e-commerce to m-commerce, illustrating the potential and power of the mobile Internet (Tan and Teo, 2002; Yen, 2009). Over 87 per cent of people in the world – 5.98 billion – are mobile subscribers, and 1.2 billion people are mobile web users (International Telecommunication Union, 2011). Global e-commerce revenue is growing around 19 per cent annually (J.P. Morgan report, 2011; cited in Rao, 2011). Tele-education and tele-medicine are becoming free and universally available, whilst projects like MIT’s “one laptop per child” combat the digital divide. It seems that both ICTs are becoming varied and access to ICTs is becoming easier. For self-directed learners, technological convergence means that computers, telecommunication devices, and networks are allowing users to work together locally, regionally, and globally and exchange content.

The implication of technological convergence is that employees can use a variety of digital tools and mobile devices available to them (including iPhone, iPad, Blackberry, social networking sites, video sharing sites, wikis, and blogs) for continuous learning in their lives. These tools offer employees multiple communication channels (phone, voicemail, e-mail, and chat) and an unprecedented level of access to digital information (text, presentations, audio, video, and photos). As a result, learners have convenient

and continuous access to learning resources in all aspects of their lives. Technological convergence enables self-directed learners to:

- use different sensory channels and adaptable tools according to their own learning needs and preferences;
- continue learning activities on multiple technological tools and platforms without interruption; and
- combine engaging tools and platforms flexibly based on own interests and passions.

Therefore, learners are empowered to benefit from a cafeteria-style menu of diverse learning options anchored in every aspect of their lives.

Global connectivity

The third transformation is global connectivity; which can be defined as the ability to link or connect to the internet – the global brain – providing access to worldwide online information resources just by sitting in front of and clicking on your computer, laptop, or mobile device. Today’s internet is a larger ecosystem and with far more brainpower and connectivity that any single organisation could ever hope to match. Connecting to the wider global network and information society involves the negotiation of many barriers, such as the digital divide (Crenshaw and Robison, 2006). Telecommunications industry has experienced tremendous innovations in the last decade that have boosted global connectivity; such as the huge increases in transmission rates and supercomputer speed as well as radical innovations in wireless communications devices, broadcast digital technologies, organic semiconductor devices, and bio-computers. An infinite variety of new services and experiences are introduced to enrich the lives and productivity of professionals via global connectivity. Moreover, we are witnessing a blurring of the distinctions between learning, work, fun, and leisure as mobile computing devices are ubiquitous, and an “always on” culture is enabled by broadband connectivity. Many authors have written about connectivity in a global world where people around the world share a common virtual technology and knowledge platform (Stromquist, 2002; Anderson, 2001). The young members of this global platform have been referred to as Net-Geners, Millennials, Generation Y, or digital natives; who are characterised by having high digital literacy, having multitasking capabilities, socialising and learning on the Net, consuming and producing digital information, and imagining and visualising while communicating online (Prensky, 2001; Tapscott, 1998; Twenge, 2007). Global connectivity has far-reaching implications for individuals and their opportunities for learning.

One significant implication of global connectivity is that individuals act and feel as global citizens of a hyper-connected knowledge platform. Individuals now have the resources and opportunities to connect to this global shared platform. This global connectivity enables employees to have a sense of global citizenship, to make more informed choices, to develop a global mindset, and feel socially connected to a larger community. Obviously, these capabilities also reflect the characteristics of self-directed learners. There is a natural affinity and alignment between SDL and global connectivity. As self-directed learners are embedded in a set of relationships and networks within the digital ecosystem, they are well equipped to be active citizens and informed decision makers in a hyper-connected society. Governments are aware of the

positive implications of self-directed learning for economic competitiveness, personal fulfilment and social inclusivity; and they are trying to enable global connectivity for individuals, workplaces, and communities (Candy, 2004).

Online communities

The fourth transformation is the usage of internet platforms and new media for social change and community benefits. The new media, also called “social media” has been used extensively by social movements to educate, communicate, lobby, protest, fundraise, democratise information and increase social awareness. These efforts can be also called “online social activism”. One interesting trend related to the merging of technology and social responsibility is the emergence and rise of innovative pedagogies such as service-eLearning (Dailey-Hebert *et al.*, 2008) and service learning (McCarthy and Tucker, 2002). Service learning is defined as a form of experiential education in which students participate in community service activities to apply course concepts and to develop an enhanced sense of social responsibility (Bringle and Hatcher, 1995). With the advancement of Web 2.0 tools, Service Learning 2.0 enables professionals to pursue global social positive change (Karakas and Kavas, 2009). Empirical research has demonstrated a number of positive effects of service learning for individuals including a deeper understanding of civic engagement, social responsibility, and ethical awareness (Salimbene *et al.*, 2005).

Twenty-first century online communities are living experiments of compassionate feeling, collective visioning, open innovating, and collaborative working. One typical example of an online community is the “Free Hugs Campaign”, where blogs, online videos, and social networks were widely used to organise a widespread grassroots movement. One defining feature of such online movements is the formation of “virtual communities” where widely dispersed but like-minded users come together in cyberspace based on similar interests, transcending geographical and social boundaries (Wang, 2010). Rheingold (2000) states that users in online communities use words on screens to exchange pleasantries, engage in intellectual discussions, conduct business, brainstorm, gossip, and even fall in love.

Online communities have implications for workplaces since they can be used as platforms that are socially rich, communally innovative, egalitarian, user-centred, and interactive. Online communities can be used by organisations to foster collective decision-making and brainstorming. Digital brainstorming methods may include the world café method, project wikis, idea contests, or a virtual town hall meeting. What is important is the design of innovative governance models that give voice to employees through the use of cutting edge technologies and advanced meeting tools. Srinivas Kousnik, the CIO of the Nationwide Property and Casualty Company, started internal management blogs and wikis to open two-way communications and collaborative learning with 2,400 employees worldwide, who have shown great interest by reading blog posts, adding comments, and creating projects together (Birkinshaw and Crainer, 2009). Such platforms create safe and fair spaces, foster authentic conversations, provide employees dialogue opportunity with top managers, and build affective commitment of employees.

Online communities are closely associated with the natural and powerful human need to be in touch with other people and to feel the part of a larger community. What is changing; however, is that many employees now want to be part of online

communities as they use Facebook, chatrooms, online forums, and peer-to-peer networking. Social user activities include seeking companionship, sharing knowledge, seeking advice or guidance, lobbying for particular causes, and pursuing social agendas. In sum, online communities enable self-directed learners to:

- pursue hobbies or share similar interests and passions with like-minded people;
- expand their networks and meet new people;
- post queries and learn from experts or peers;
- engage in meaningful and lively conversations; and
- engage in issue-oriented non-partisan social activism.

One significant implication is that the process of self-directed learning does not need to be a lonely or isolated activity. On the contrary, SDL has a social and interpersonal dimension and self-directed learners often form quite rich connections and high quality relationships in digital ecosystems. Moreover, SDL literature proposes that self-directed learners exhibit a strong sense of social responsibility and a desire to contribute to the well-being of people around them and this underlying sense of responsibility drives many of their self-directed learning efforts (Guglielmino *et al.*, 2009). Online communities present new opportunities for self-directed learners in pursuing their efforts towards creating positive change and leaving community legacy.

Digital creativity

The final transformation is the increasing importance of creativity and innovativeness in digital platforms and future business models. Creativity is becoming increasingly significant to find new ways to bridge and resolve wider global issues, social divides, and poverty gaps of the twenty-first century (Waddock, 2007). Creativity is also one of the most crucial strategic items on the agendas of nations, regions, and cities. The European Union designated 2009 as the European Year of Creativity and Innovation to combat the economic downturn and to contribute to Europe's economic and social well-being (European Commission, 2009). Pink (2005) mentions a paradigm shift from the information age built on logical, linear, analytical capabilities (the left hemisphere) to the conceptual age built on inventive, empathic, intuitive, and big-picture capabilities (the right hemisphere). Some business thinkers, such as Merritt and Lavelle (2005) propose that tomorrow's B-schools (business schools) might actually be D-schools (design schools). Pink (2004) puts forward the idea that the MFA degree (Master of Fine Arts) will be the new MBA (Master of Business Administration) of tomorrow; as business is revolutionised by "design thinking" (Dunne and Martin, 2006). Companies have been launching creative ways of human resource development; such as utilising swarm intelligence (Bonabeau and Meyer, 2001), social media (Tyagi and Tyagi, 2012), open innovation (Huizingh, 2011), and talent development (Garavan *et al.*, 2012) in order to nurture creative competences of their employees. Pixar attracts the best creative talent and utilises a peer-driven process for fostering "collective creativity" to come up with artistic and technological breakthroughs in the computer animation movies industry (Catmull, 2008). Employees working in tomorrow's organisations will need to develop a new set of competencies centred on digital creativity. McGonigal (2008) proposes that these competencies may include mobbability, cooperation radar, signal/noise management, protovation,

emergensight, open authorship, fluency, multicapitalism, longbroading, and a high ping quotient.

There is widespread recognition that a creative workforce, an innovative culture, and digital literacy are the ingredients for the competitiveness of organisations. The implication of this transformation is that creativity is one of the most crucial professional competencies of employees in today's workplaces. Empirical studies show that employees who have developed high self-directed learning skills performed better in jobs requiring high degrees of creativity (Mitlacher *et al.*, 2005). Therefore, to foster creativity, organisations need to design campus-like flexible environments where employees can pursue self-directed learning to innovate and come up with successful ideas. Meyer (2010) argues that reclaiming play and creating "playspaces" for all employees to develop their capacities for learning, innovating and change can be a critical success factor for organisations. Workplaces can be transformed into playspaces to enable employees to think creatively, learn and develop skills, question old assumptions, and use the best of their talents. In playspaces, personal devices are replacing the blackboard, lifelong learning skills are replacing memorisation, and digital learning is replacing the traditional curriculum. In this new paradigm, self-directed learners can:

- customise and design their learning based on their unique needs, skills, and interests;
- build on their inner creative abilities and strengths; and
- hold responsibility for planning, implementing and evaluating their own learning processes (Brockett and Hiemstra, 1991; Park, 2009).

The organisational and technological changes we face today demand a different set of learning skills than the traditional structured training and development programs that were adequate in past eras. This paper introduced five transformations that have implications for the changing nature of SDL in the workplaces. Being aware of these transformations can help HRD practitioners and industrial trainers in providing new spaces, tools, resources, and opportunities for their employees to pursue SDL.

Implications for HRD

Hamlin and Stewart's (2011) extensive review on HRD both informs us on the debate on the definition of the field and offers a comprehensive definition. Their definition, which is meant to provoke thoughts rather than conclude the discussion, states that:

HRD encompasses planned activities, processes and/or interventions designed to have impact upon and enhance organisational and individual learning, to develop human potential, to improve or maximise effectiveness and performance at either the individual, group/team and/or organisational level, and/or to bring about effective, beneficial personal or organisational behaviour change and improvement within, across and/or beyond the boundaries (or borders) of private sector (for profit), public sector/governmental, or third/voluntary sector (not-for-profit) organisations, entities or any other type of personal-based, work-based, community-based, society-based, culture-based, political-based or nation-based host system (p. 213).

In line with this definition, the review underlines four core purposes of HRD::

... improving individual or group effectiveness and performance; improving organizational effectiveness and performance; developing knowledge, skills, and competences; and enhancing human potential and personal growth (Hamlin and Stewart, 2011, p. 213).

In this article, we provide recommendations to HRD practitioners from all these aspects.

At the most basic level, we suggest that HRD practitioners need to adapt to the dramatic shifts transforming the nature of workplace learning in the twenty-first century. Workplace learning is becoming more on demand, flexible, continuous, embedded, contextual, bite-sized, rapid, and modular (Armstrong and Sadler-Smith, 2008). Taylor and Sheehan (2010) identify eight trends that characterise the future of workplace learning:

- (1) supporting a demand for continuous learning;
- (2) overcoming barriers to learning; such as lack of time and information overload;
- (3) “just-in-time” learning in bite-size chunks to support work challenges;
- (4) customisation and personalisation;
- (5) identifying ways to do more with less, with a focus on maximising ROI on learning;
- (6) blending formal and informal learning;
- (7) self managed development and individual responsibility for learning; and
- (8) harnessing technology to empower the learner.

These trends signify SDL as a major critical success factor for HRD in organisations. This paper suggests that HRD practitioners have major roles in designing workplaces that encourage SDL. One of the most critical roles of HRD practitioners is to identify each individual’s learning and development needs based on the individual’s job definition, work context, and expertise. Creating the right blend of SDL experiences and solutions for each individual requires HRD practitioners to know the individual very closely; including learning styles, career goals, performance expectations, and developmental needs. Learning about these would enable HRD practitioners to create a wide range of SDL options that are flexible enough to respond everyone’s learning preferences.

At a deeper level, this paper has several implications for HRD practitioners in organisations (especially organisations operating in the industries of creative arts, design, advertising, marketing, media, multimedia, animation, cinema, architecture, computer graphics, industrial design, and information technology). First and foremost, this paper underlines the importance of specific dimensions of corporate environments – digital tools, empowerment, free spaces, adequate resources, and an open organisational culture – that support the development of self-directed learning in World 2.0. SDL literature has already mentioned several organisational characteristics that promote SDL; including a participative management style (Foucher, 1996; Confessore and Kops, 1998), a supportive environment with autonomy (Foucher, 1996), support of experimentation and risk taking and tolerance for errors (Foucher, 1996; Confessore and Kops, 1998), support for unplanned, non-sequential learning activities (Foucher, 1996), and encouragement of open communication and of information systems that provide support for collaboration and teamwork (Confessore and Kops,

1998). When organisations support a culture that invests in SDL, employees will feel that they are part of an extraordinary organisation that supports growth and creativity of all employees. The result will be a vibrant organisation where well-informed employees support each other and use SDL to come up with breakthrough innovations to solve complex problems. Accordingly, the knowledge capabilities and accomplishments of the organisation will attract even more talented and passionate self-directed learners.

One of the major contributions of World 2.0 for training and development has been the long-awaited transition from the robotic approach of computers to human-oriented approach (Wagner and Flannery, 2004). Such a transition has occurred easily and fast, because the participative environment of World 2.0 has empowered users to shape this user-friendly landscape and improve it through feedback. Future research might evaluate the perceived ease of use and perceived usefulness of Web 2.0 technologies according to Davis's technology acceptance model (Davis, 1986; cited in Wagner and Flannery, 2004). This line of research might make a significant contribution to our understanding and test our arguments in this article if it compares technology acceptance level between Web 2.0 technologies and disconnected but technology-based methods such as computer-based training.

Recommendations for HRD practitioners and managers

In this section, in the light of each transformation affecting the landscape of workplace learning, we provide practical suggestions for HRD practitioners and managers to enable SDL in their organisations.

In line with the transformation of virtual collaboration, HRD practitioners need to pay particular attention to strengthening collaborative capabilities outside their organisations. Collaborative learning and innovation activities are more crucial than ever – particularly beyond company walls. Since external collaboration is indispensable and many ideas come from the outside, organisations need to move from traditional management models to network orchestration and open innovation. Virtual collaboration opens up a world of possibilities for how employees engage in SDL and use it to create new ideas for innovation. To keep up with virtual collaboration, managers need to:

- find which barriers are preventing collaboration and question their legitimacy;
- design and use virtual collaboration tools that bridge language, culture, company, and department walls or barriers;
- force an outside look every time and push the organisation to work with outsiders more often;
- make external collaboration an integral part of the organisational culture; and
- utilise Office 2.0 collaborative tools and social networks to harness SDL beyond corporate borders.

To harness technological convergence, HRD practitioners need to encourage employees to be involved in continuous learning in multiple platforms using diverse mobile and digital tools. Technological convergence provides employees the platform and the tools to pursue SDL at work, in their homes, or while travelling. This implies the opportunity for lifelong, continuous, and boundless learning in the digital

ecosystem. Organisations now have the technological resources and the infrastructure to enable employees to engage in SDL in every part of their lives and develop digital creative skills for the twenty-first century. To harness technological convergence, managers can:

- design seminars, webinars, e-learning modules to provide an array of learning options that give employees the opportunity to customise their learning;
- provide training for employees to use various social media, digital tools, and Web 2.0 technologies; and
- provide employees technological infrastructure and platforms to enable them to engage in SDL.

To benefit from global connectivity, HRD practitioners and industrial trainers need to expand the learning ecosystem outside the firm boundaries to tap into the global brain. The process of SDL extends well beyond the company to the global world, as employees can reach any information from different parts of the world at their fingertips. Due to global connectivity; knowledge, ideas, and learning resources can move instantly and ubiquitously around the planet. Friedman (2005) describes this phenomenon as “globalisation 3.0”, the era of individual globalisation, where every individual who can access to the digital world can become a desktop freelancer and start an innovative start-up using a laptop. The members of the Net generation are already well connected to this digital world and they expect an always-on learning environment and culture from their workplaces. To foster such an environment, managers can:

- invite top professionals and best minds from all over the world to the company to share global knowledge;
- provide access to open educational resources that have creative commons license (including MIT’s OpenCourseWare, the Open University’s OpenLearn, and TED Conference videos at ted.com); and
- give employees time, opportunity, and resources to learn on their own based on their interests and passion.

To form online communities, HRD practitioners need to bring together best minds from diverse disciplines and form cross-disciplinary virtual teams. Offering competitive career opportunities and compensation packages, designing exciting and challenging working environments, and providing advanced technology and career opportunities can be effective ways to attract and retain highly qualified self-directed learners in the company. Organisations can build and support online communities involving a large number of people from diverse disciplines to learn and work together, to support each other in SDL, and to solve cross-disciplinary problems. To make online communities effective, managers can:

- try to break down the walls between disciplines and try to maximise inadvertent encounters or serendipities (online or offline);
- try to bridge physical distances and psychological boundaries between departments and disciplines;

- encourage employees to be engaged in blogging, networking, and learning in the digital ecosystem; and
- support customers or users who are passionate and deeply engaged with the company and seek their feedback and help for SDL.

To nurture digital creativity, HRD practitioners need to empower employees to be engaged in SDL at the intersection of the creative arts and digital technologies. To this end, employees should be provided adequate time, opportunities, incentives, flexibility, and resources. For instance, Google requires technical employees and managers to spend 20 percent of their time on new projects and innovations that they are passionate about (Iyer and Davenport, 2008). Employees naturally spend a significant portion of this time on SDL based on their own interests and passion. To develop digital creative competences of employees, managers can:

- provide support and recognition for SDL activities and innovation projects of employees;
- let employees build on their own passions and cultivate their strengths to use new digital technologies in the creative process;
- encourage employees to engage in design thinking, creative brainstorming, visualisation, and non-linear hyper-text multimedia tools;
- encourage employees to develop, experiment with, and use digital creative competences (through digital portfolios, virtual design workshops, animation, virtual reality, and computer graphics); and
- encourage employees to engage in SDL to develop skills and knowledge to create digital concepts, environments or worlds.

Limitations and challenges

HRD practitioners will play a major role in training employees to use Web 2.0 technologies effectively, but the effect of training programs on self-directed learning might not be easy to assess. This is especially true considering the huge variety that World 2.0 encompasses, which makes it difficult to understand how much learning occurred with the help of the Web 2.0 technologies. We hereby concur with the warning that solely assessing the impact of training techniques on the skill development would blur the overall and long-term contribution to learners by human resource developers (Wagner and Flannery, 2004). In particular, we think that HRD practitioners need to train employees to pick the best World 2.0 tools that will serve their SDL needs. Efforts to train employees on using specific websites, wikis, and social networks might be disappointing; given the rapid emergence of alternative and better Web 2.0 technologies. In essence, it is critical to train how to learn using new technologies and information and communications channels. Using a similar practice that Telefonica pursued (Gascó *et al.*, 2004) trainers can track the recent learning opportunities and share a catalogue of recommended learning experiences. Trainers can also invite self-directed learners to participate in and give feedback for the preparation of this list.

Self-directed learners might get lost in the middle of the huge variety of tools. At this point, HRD specialist can help learners. One of the major contributions would be frequent communication on how the learning process goes for employees. This practice

would provide the organisation with several benefits. Firstly, self-directed learners will keep themselves on track while HRD specialists become their trusted-other in the learning process. Secondly, organisation can check whether employees learning efforts are spent on relevant skills and knowledge development. Hence, the new role for HRD practitioners would be a coach and pathfinder.

Finally, there are also other challenges that self-directed learners may face if they do not receive help and guidance in their SDL journeys. SDL in the digital ecosystem requires a wide range of skills for effective implementation; including digital literacy, self-awareness, time management, self-evaluation of learning, the ability to work alone, self-discipline, and learning independently. If the learner lacks these critical skills, the process of SDL will not be effective. Therefore, HRD practitioners have the responsibility to provide the necessary guidance, training, support, and structure for individuals to scaffold their learning experiences. Second, self-directed learners may face a number of challenges on the Internet; such as accepting partial, misleading, or biased information; losing concentration and focus, relying too heavily on the technology for information, lacking critical appraisal of the trustworthiness of resources, feeling overwhelmed with information, or opting out for the easiest answer. The role of organisational support and mentoring is critical to remedy these risks.

Conclusion

SDL builds on our humanistic ideals, such as openness, curiosity, accountability, passion, and participation in the digital age. The internet is becoming an open, innovative, boundaryless mega-platform (World 2.0) where people share inspirational, interactive, immersive, and multimedia learning experiences with people from all over the world. Technological and organisational opportunities are coming together to overcome gaps of time and resources; bringing deliberation, flexibility, and choice to employees' learning activities at time and places they prefer. There are a new potential and opportunities enabled by World 2.0 for employees to pursue SDL in and beyond their workplaces. SDL enables employees from different backgrounds to collaborate and have conversations in flexible virtual platforms. Accordingly, SDL can bridge distance, language, and culture barriers and can be used to tap into the creative skills and talents of employees. Being aware of the ever-increasing significance and application of Web 2.0 technologies at work, HRD practitioners might benefit from embracing the SDL opportunities that World 2.0 offers.

This paper has outlined five transformations that characterise World 2.0 (virtual collaboration technological convergence, global connectivity, online communities, and digital creativity). These transformations have significant implications for the future of SDL. Further research is needed to empirically investigate how the nature of SDL is changing in the digital ecosystem. This paper has explored the implications of these transformations for SDL and provided suggestions for human resource development practitioners and industrial trainers. These suggestions can enable twenty-first century organisations to develop integral SDL approaches for employees. Building on the transformations presented in this paper, human resource development practitioners can empower employees to build the SDL capacities to envision and design integral solutions to the technological and workplace challenges of the creative digital era. SDL can be used as a vehicle to create a truly collaborative and innovative company; ready to embrace World 2.0. SDL can be a transformative tool in preparing

employees for the new challenges of the digital ecosystem. A group of self-directed learners operating in a collaborative and well-connected synergistic environment can create breakthrough innovation at the intersection of the creative arts and digital technologies. Innovation projects take flight when self-directed learners with brightest minds, creative skills, and passion meet in a positive creative atmosphere. This is the right time for HRD practitioners to nurture SDL inside and beyond corporate borders.

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