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Visionary Leadership for Digital Transformation: In a Time when Learners Take Ownership of Their Learning

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ABSTRACT :

The rethinking of leadership at all levels is required to reach the goals of learning and education in 2030 when learners will take the lead in orchestrating the process and manner of their own learning and in choosing their personal learning journeys. The style and focus of leadership must change in order to prepare learners for a dynamic world that is socially connected by digital technology. To prepare for this change, leaders at all levels can foster sustainable open education activities and initiatives through both top-down and bottom-up transparent approaches. They can pave the way for creating openness by inspiring and empowering people to be lifelong learners. Leaders and managers can enable the cultural change brought by digital transformation within their organizations. The cultivation of the culture of quality is critical, and it must be in everyone's interest; however, it must be empowered and encouraged by leaders. Hence, there is a need for people who have the knowledge, abilities, competences, and attitudes to lead this process and to analyze and evaluate digital work environments.

Keywords: Boundless, Boundaryless, Digitalization, Digital Transformation Education, Learning, Leadership, Open Education, Resilience

INTRODUCTION

In the current context, education is constantly transforming because of the rapid changes in technology, increased globalization, digitization, and changing demography. According to the United Educational, Scientific and Cultural Organization(UNESCO) sustainable development goals for education (SDG 4) for 2030 from the perspective of global, lifelong, and life-wide learning, education should be available to all, at anytime, anywhere, and through any device. Moreover, learners take the lead in orchestrating the process and manner of their own learning in choosing their personal learning journeys in the widest interpretation of education (UNESCO, 2015a, 2015b, 2015c).

These goals, which are designed to empower and ensure inclusion, equity, and quality education, will be achieved through access, democracy, affordability, efficacy, and equality. Hence, there have been calls for modern governance arrangements and dynamic, proactive leadership and management. The director general of UNESCO, Irina Bokova argued the following:

> *[A] fundamental change is needed in the way we think about education's role in global development because it has a catalytic impact on the well-being of individuals and the future of our planet. . . . Now, more than ever, education has a responsibility to be in gear with 21st-century challenges and aspirations and*

> *foster the right types of values and skills that will lead to sustainable and inclusive growth and peaceful living together (UNESCO, 2016).*

Furthermore, the European Commission (EC) (2017) argued for the potential of the digital age but noted that regulatory barriers need to be overcome:

> *[T]he internet and digital technologies are transforming our world. But existing barriers online mean citizens miss out on goods and services, internet companies and start-ups have their horizons limited, and businesses and governments cannot fully benefit from digital tools. It's time to make the EU's single market fit for the digital age – tearing down regulatory walls (Digital Single Market, 2017)*

Moreover, global challenges, such as globalization, sustainability goals, changing demography, increased digitization, and the unbundling and openness movements, have affected both learning and teaching. Indeed, the fourth industrial revolution has changed the way we act, perform, live, work, and learn today, which affects business, organizations, and people (Schwab, 2016). In addition, other challenges include the influences of blockchain, 3D, Internet of things (IoT), the cloud, artificial intelligence (AI), learning analytics (LA), robotization, social and mobile learning, other developments in technology-enabled learning (TEL), and the growing trend toward micro credentials. However, in recent decades, one of the most important changes in discussions of teaching and learning has been the shift in focus from teaching to learning and the perception that learners are collaborators and pro-consumers (Laughlin & Lee, 2008; Ossiannilsson, 2012, 2017a). The digital transition encompasses all levels of institutions—macro, meso, and micro (Ossiannilsson, Williams, Camilleri & Brown, 2015).

Similarly, the progression of open and distance education involves all stakeholders at regional, national, and international levels, including learners, academics, institutions, and faculties. Hence, policy development, quality assurance, accreditation, validation and recognition, and assessment systems must be revised to accommodate this inclusiveness. Therefore, leadership and management must be rethought at all levels to ensure that the digital transformation processes required for learners to take ownership of their learning are resilient and open.

The mission of education has always been to educate people so that they can solve complex global challenges, including those that are unforeseen. The next generation of leadership must be prepared to achieve education for 2030 and to reach the SDG4 goals for education. Several global organizations, such as UNESCO (2015a 2015b 2015c), the Commonwealth of Learning (COL), (Brown, Czerniewicz, Huang, & Mayisela, 2016), the Organization for Economic Co-operation and Development (OECD), (2015), the EC (2013, 2017), as well as similar organizations worldwide have called for the modernization of learning possibilities, environments, and the entire educational school system. For example, the EC (2013, 2017) called for a new EU agenda for higher education based on the argument, "one cannot educate today's students for the future using yesterday's methods." Similarly, Sheninger and Murray (2017) argued that the traditional model of schooling prepares students for the industrial model of the past, but not for today and for the future. If we want our students to become successful citizens in a global society, we must dramatically shift to a more personal approach to learning (EC, 2017).

The preparation of learners for a dynamic world that will be global, social, and connected citizens because of technology and the networking it promotes

requires not only the rethinking but also the re-orientation of approach, style, and focus in leadership (Siemens, Gasevuc, & Dawson, (2015). This shift requires organizations to apply methods that are agile and resilient. Reaching the goals of learning and education in 2030, when learners will take the lead in orchestrating the process and manner of their own learning and in choosing their personal learning journeys, requires the rethinking of leadership at all levels. Accordingly, it is imperative that leadership trends and techniques are taken into consideration. Thus, there is a need for people who have the knowledge, abilities, competences, and attitudes to lead this process and analyze and evaluate digital work environments both today and in the future.

A NEW AGENDA FOR HIGHER EDUCATION

In today's world of connected societies, an increasing number of people of all ages use digital technologies in their everyday lives. However, when many children go to school, they enter a system that does not reflect this everyday reality. Nevertheless, the online world has begun to change how education is resourced, delivered, and enjoyed. In this context, Europe serves as an example of the modernization of higher education and the need for a new agenda. In the new initiative to open up education (EC, 2013), it was highlighted that over the next 10 years, the e-learning market would increase fifteen-fold, accounting for 30% of the whole education market. It was stressed that the benefits of these developments should be available to all Europeans and that this transformation should be shaped by educators and policy-makers rather than something that simply happens ad hoc to them. According to UNESCO (2013), mobile learning had begun to increase rapidly. Currently there are over six billion mobile phone subscriptions worldwide, and for every person who accesses the internet from a computer, two do so from a mobile device. Because of the ubiquitous and rapidly expanding functionality of mobile technologies, UNESCO is enthusiastic about their potential to improve and facilitate learning, particularly in communities where educational opportunities are scarce. UNESCO stated that mobile technologies and mobile learning can be used to achieve the following: support the United Nations goals of education for all; respond to the challenges of particular educational contexts; supplement and enrich formal schooling; and increase the accessibility of learning by ensuring that it is equitable, personalized, and flexible for all learners everywhere.

Higher education across the globe is currently facing a digital challenge. For example, because the number of students in the EU is expected to rise significantly in the next decade, the universities must adapt traditional teaching methods and offer a mix of face-to-face and online learning possibilities, such as massive open online courses (MOOC), which allow individuals to access education anywhere, at any time, and through any device. According to European Commissioner Vassiliou (EC, 2013),

> *The education landscape is changing dramatically, from school to university and beyond: open technology-based education will soon be a "must have," not just a "good-to-have" for all ages. We need to do more to ensure that young people especially are equipped with the digital skills they need for their future. It's not enough to understand how to use an app or program; we need youngsters who can create their own programs. Opening up education is about opening minds to new learning methods so that our people are more employable, creative, innovative, and entrepreneurial (n.p).*

Kroes, the Vice President (Commissioner) of the European Commission (EC, 2013, n.p) added:

> *My dream is to have every classroom digital by 2020. Education must be connected to real life; it cannot be a parallel universe. Young people want to use digital technology in every aspect of life. They need digital skills to get jobs. All of our schools and universities, not just some of them, must reflect that reality (n.p).*

However, both Commissioners Vassiliou, and Kroes argued that many universities are not ready for this change (EC, 2013). Hence, the EC Digital Agenda on Opening up Education (EC, 2013) focused on three main areas:

- Create opportunities for organizations, teachers, and learners to innovate
- Increase the use of open educational resources (OER) to ensure that educational materials that are produced with public funding are available to all
- Improve the information and communication technology (ICT) infrastructure and connectivity in schools

Accordingly, the EC's new program, Erasmus+, which offers funding to education providers to ensure that business models are adapted to technological change, includes digital leadership and supports teachers' development through open online courses. Furthermore, all educational materials supported by Erasmus+ have to be freely available to the public under open licenses (e.g., the Creative Commons licenses). The EC's (2017 n.p) white paper, The Future of Europe from 2017, stressed that the success of the European project depends on the EU's capacity to build a better future for European citizens. This emphasis is at the heart of the initiatives Investing in Europe's Youth and the New Skills Agenda for Europe, both of which made clear the following:

> [*E]ffective education and training systems are a foundation of fair, open and democratic societies and of sustained growth and employment. The EU's "pillar of social rights" and recent reflection paper on harnessing globalisation identify education and skills as a priority for European cooperation.*

Higher education plays a unique role in these initiatives. The demand for highly skilled, socially engaged people is both increasing and changing. In the period to 2025, 50% of all jobs are projected to require high-level qualifications. High-level skill gaps already exist. Driven by digital technology, jobs are becoming more flexible and complex. People's capacities to be entrepreneurial, manage complex information, think autonomously and creatively are requisite. The abilities to use resources including digital ones, be smart, communicate effectively, and be resilient are increasingly crucial. The global world as well as Europe needs high achievers who can develop the innovative technologies and solutions on which its future prosperity depends. In parallel, the growing polarization of societies and distrust of democratic institutions requires everyone, including higher education staff and students, to engage actively with the communities around them to promote social inclusion and mobility. The EC (2017) pointed out that without higher education institutions (HEI) and systems that are effective in education, including research and innovation that are connected to their societies, Europe cannot respond to these challenges. Hence, through reforms, funding, and other efforts of higher education, renewed agendas for higher education are being promoted and fostered throughout Europe to ensure that the EU's initiatives to support higher education modernization are focused on the most relevant issues. Furthermore, the EC argued that the reform of higher education is the responsibility of all countries and is part of their efforts to develop world-class education and training.

In addition, they promote initiatives for leadership in the digital transformation. They have argued that leaders and managers will play a crucial role in the modernization of higher education because systemic and fundamental changes are needed. It is no longer a question of doing more of the same, but it is time for radical changes that serve the modern global society. Because leadership is crucial in the modernization of higher education and in making systemic changes for the digital transformation, leadership will be elaborated in the next sections.

ON LEADERSHIP

Leadership and management have always been of special interest to organizations, including institutions of higher education. The worldwide research in the areas is comprehensive, including studies produced by internationally recognized business schools, which advocate that leadership is crucial for the success of any organization. In a recent study, Alvesson, Blom, and Svennigsson (2017) examined the ways in which leadership researchers and other experts perceived leadership and the current status of leadership based on several decades of research on leaders. Through interviews with managers and their subordinates, they focused on obtaining a comprehensive understanding of the organizational context. The critical interpretation of their findings was based on both theories of leadership and a wealth of other perspectives. In their research, they also focused on what leadership consists of and how is it understood and interpreted. One issue that predominated throughout the research on leadership was the importance of leadership in organizations and society. Alvesson et al. (2017) argued that to encourage managers and others to think both broadly and deeply about the best means of coordinating the work in modern organizations, including highlighting and discussing the options for leadership. They asked if leadership were a magical elixir for all possible organizational problems.

The answer was of course in the negative. Instead, Alvesson et al., advocated a reflexive approach to the phenomenon of leadership. Considering and challenging various traditional lines of reasoning, they suggested new, provocative, critical, and constructive ideas that could help to develop reflexive thinking in both academic and practical contexts. They revealed that reflexive leadership concerns what we mean by leadership, what it can do, should not do, when it is effective, and when it is not the best option. One option is shared leadership, especially in complex global organizations, which are increasing ubiquitous in the 21st century, especially in high-level digital working environments.

THE NEXT GENERATION OF LEADERSHIP

Sheninger (2014) argued that leadership is no different today than it was in the past. However, he also stated the following:

> *The only difference is that style and focus need to change with the times if we are to accomplish the lofty task of preparing students for a dynamic world that is more social and connected as a result of technology. Leading in a way that supports the status quo, standardization, outdated practices, and misconceptions related to technology, not only does a disservice to our students, but also renders our schools and profession as irrelevant (p.2).*

In the 21st century, leadership, particularly in higher education institutions, must change direction to accommodate changing paradigms and unbundling approaches to opening up education. In the 21st century, learners take control of their own learning, the contexts of formal and informal learning are merged and blurred, and the digital transformation includes robotizing.

The SDG4 goals emphasize quality education for all, at any time, and anywhere in a process and manner that are democratic and equitable.

Accordingly, decision makers and managers as well as academics and administrators must be involved, engaged, and take their responsibilities. Therefore, rethinking leadership and management is needed at all levels for digital, resilient, agile, and boundless transformation processes at a time when learners are taking ownership of their learning. Therefore, not only leadership but also universities' offerings, services, strategies, and missions must be rethought.

The mission of universities has always been to prepare learners to solve complex global problems. The mission of today and in the future, is to prepare students to become knowledgeable, empathetic, and principled adults who think critically and act creatively to resolve issues of local and global significance to build a just, sustainable, and peaceful world. Through innovative instructional strategies, including community-based projects and local and global strategic partnerships, students will develop the knowledge and skills necessary to grow and succeed in a diverse and evolving global society. The implementation of such strategies requires personalized, agile, and competency-based systems, not linear silo-based educational systems. Students should be prepared to meet challenges that cannot be predicted in the rapidly changing global world, particularly those resulting from the fourth industrial revolution (Schwab, 2016), which will change the way we act, perform, live, work, and learn at several levels in all sectors.

The digital transformation becomes exponentially powerful when technology is used to enhance the advantages of individuals (Sheninger, 2014). It is no longer a question of introducing technology.

The tasks of leaders now are to foster its successful implementation and to empower the institutional culture by initiating sustainable changes. The leaders of today must foster and empower the transformation process by taking advantage of increased digitization, cloud services, and free social media tools to improve communication and interactions related to learning spaces. Today, it is essential to integrate digital tools into the classroom to increase student engagement, facilitate professional learning, and access new opportunities and resources. However, successful integration also requires resources such as infrastructure, support, incentives, and continuous professional development and training for all staff, and learners (Ossiannilsson, 2017a, 2017b, 2018).

Sheninger (2014) described digital leadership as a strategic mindset and a set of behaviors that leverage resources to create a meaningful, transparent, and engaging educational culture. Inamorato dos an tos, Punie, and Casta o- u o (2016) argued that digital leadership is understood as the strategic use of an organization or company's digital assets to achieve business goals in and for the 21st century. In addition, they emphasized that in open education, leadership goes beyond the creation of strategies and activities that are decided at the executive level. The COL (Brown, et al., 2016) argued that in the culture of leadership, the place of educators and leaders is examined in the context of the rapidly developing global world. Central to this aim is the need for all educators and leaders to partake in lifelong learning and to understand the importance of positive personal and professional values, including effective reflective practices.

Similar to Inamorato dos Santos et al. (2016) and COL (Brown, et al., 2016), Ossiannilsson (2017a, 2017b, 2018) emphasized the issues involved in convincing educational organizations to lead the digital transformation in order to promote learning in which learners take the lead and to cultivate a culture of quality in the digital era (SDG4, 2015 a 2015b 2015c). Accordingly, important skills for managers, and leaders of today, and for tomorrow are the three dimensions (with its sub-dimensions) of digital leadership, which are to combine strategy, business/market and ICT to benefit the organization, business and its stakeholders.

The COL has a special leadership program that fosters, supports, and facilitates the transformation of digitization in education around the globe. This program Commonwealth Digital Education Leadership Training in Action (C-DELTA) is a long-term program that COL implements to promote a digital education environment in the Commonwealth of Learning Members Nations. The aim of the C-DELTA program is to provide a framework for fostering digital learning and developing skilled citizens that participate in lifelong learning. This program stresses the importance of the holistic approach to conceptualizing digital education leadership. Through the C-DELTA initiative, COL has identified the need to foster digital learning and develop skilled citizens for lifelong learning. C-DELTA aims to promote a digital education environment in the Commonwealth of Learning countries by engaging with governments, educational institutions, teachers, and civil society organizations to achieve the following goals:

- Assess digital education competencies
- Develop learning materials around the digital education skills
- Provide training opportunities for teachers, and
- Monitor student achievement and their relationships to livelihood

In Europe, the D-Transform (http://www.dtransform.eu/about-us/) a leadership school initiative, aims to facilitate and speed the process of digital leadership and equip leaders with the understanding of their role in the changing world of increased digitization. The goal of D-Transform is to implement a training program for leaders of European universities (e.g., presidents and vice-presidents) by focusing on the major role played by digital technologies and OER in the necessary transformation of their institutions. The premise is that e-education (i.e., digital pedagogy and training) can become a strategic tool for European universities, enabling them to be pedagogically effective, cost-effective, attractive, and able to meet the needs of the professional world with regard to youth training and lifelong learning. Another European initiative is the Empower Online Learning Leadership Academy (EOLLA). This academy is part of a joint initiative by the European Association of Distance Education Universities (EADTU) Empower program and the European Consortium of Innovative Universities (ECIU). The ECIU is a leading international consortium of research-intensive universities with a collective emphasis on innovation, creativity, and societal impact in driving the development of a knowledge-based economy. The consortium is designed according to the principles of active learning, and it includes activities such as high-level discussions, creative problem solving and strategic thinking in response to new and emerging models of teaching and learning. The Empower project (EOLLA) supports the collaboration and sharing of expertise among European universities and provides specialist advice and guidance for institutional leaders regarding the latest developments in online, open, and flexible education. The project aims to explore real dilemmas, challenging case studies, and future scenarios to better understand the development of strategic, research-informed responses to the opportunities and threats facing higher education institutions.

In their framework of open education (Inamorato dos Santos et al., 2016), the EC's Joint Research Center (JRC) has emphasized leadership as a transversal dimension because it supports open education practices at different levels, such as personal motivation, task organization, collaboration, and outcomes management. In addition, it interacts with and affects the four core dimensions and the six transversal dimensions (see Figure 1).

The concept of leadership is understood to refer to not only senior leaders and managers but also leaders at all levels. Hence, all leaders should foster and empower sustainable open education activities and initiatives through transparent top-down and bottom-up approaches.

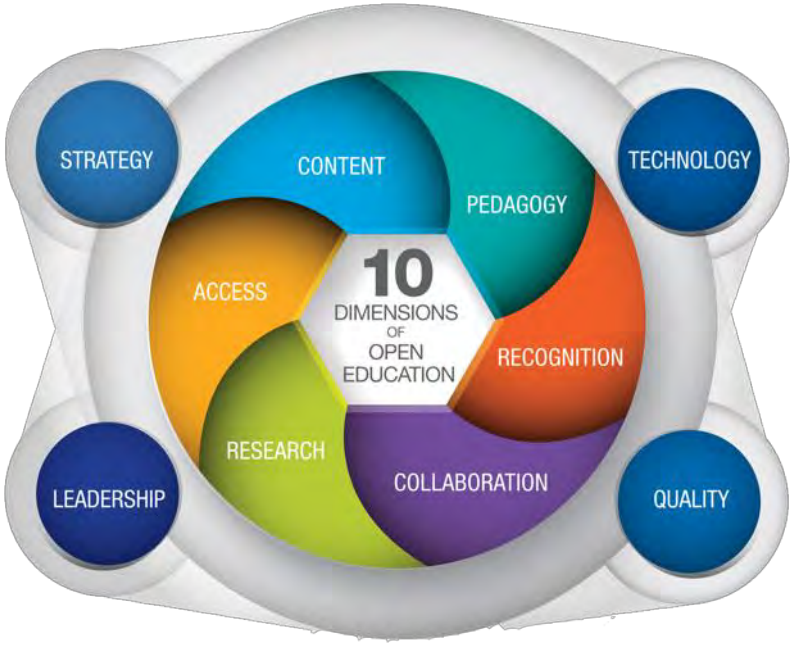

Figure 1: The framework of open education (Inamorato dos Santos et al., 2016)

The digital transition process encompasses all levels of an educational institution—macro, meso, and micro: the macro level concerns regional, state, national, and international relationships; the meso level concerns institutions; and the micro level concerns courses and modules (Ossiannilsson et al., 2015). However, there are also other interpretations; for example, the macro level can refer to the entire institution, not only its strategy and mission but also its infrastructure, allocation of resources (costs and time), incentives, and support for students and staff.

The meso level refers to the department or faculty, and the same issues need to be considered. Finally, the micro level refers to course offerings, such as curricula, course structure and design, assessment, learning outcomes, and method of delivery (Kirkwood & Price, 2016; Ossiannilsson, 2012; Ossiannilsson et al., 2015). Micro level, is also used for each single individual, who are involved. Hence, in this holistic approach, it is obvious that all levels are involved. In Figure 2 the tree levels, its interactions, mutual influences, and impact are described.

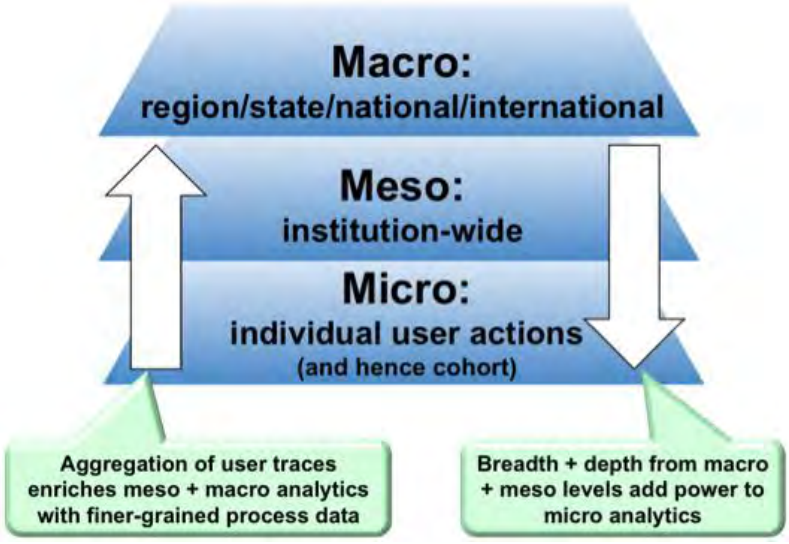

Figure 2: The macro, meso, and micro levels of educational institutions

The COL framework of technology-enabled learning (TEL) initiatives and activities encompasses the macro, meso, and micro levels described above.

The framework highlights the importance of infrastructure, capacity building, and devices (see Figure 3).

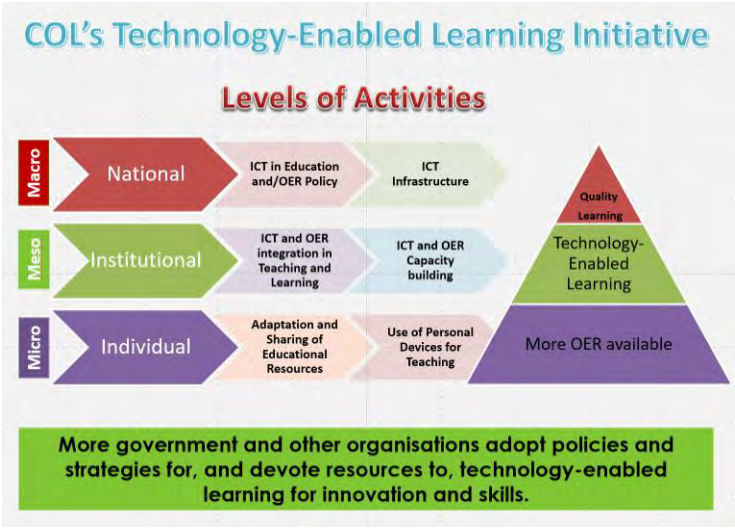

Figure 3: The COL framework of TEL initiatives and activities encompasses the macro, meso, and micro levels

The macro-meso-micro framework is useful in studying the transition of a policy from a high-level idea to its implementation in a program, but also from the bottom up perspective (Caldwell & Mays, 2012). This framework could also be used to gaps, as quality for the digital transformation, is not stronger as its weakest link.

Next, the DigCompEdu (https://ec.europa.eu/jrc/en/digcompedu) framework, by JRC is outlined, which also focus on leadership, and leaders' role for staffs professional development in the digital transformation.

THE DIGITAL COMPETENCE FRAMEWORK

In reaching the SDG4 goals for the 21st century, the teaching professions face rapidly changing demands, which requires a set of competences that are broader and more sophisticated approaches than previously. The ubiquity of digital devices and applications, in particular, requires educators to develop their digital competence. Several national and international competence frameworks, each having a specific underlying logic and level of development exist in the area of educators' digital competence. In Europe, the JRC recently (October 2017) launched the digital competence framework for educators at European level (DigCompEdu), which was based on their previous Digital Competence Framework for Citizens (Vuorikari, et al., 2016). The DigCompEdu framework was launched to reinforce national and/or regional initiatives by providing a common understanding of the digital competence needs of educators. The objective of this framework is to identify and describe the key components of educators' digital competences and to provide an instrument for assessment and self-assessment based on research and stakeholder consultations. The framework is directed to educators at all levels of education from K12 to higher and adult education, including general and vocational training, special needs education, and non-formal learning contexts. The DigCompEdu identifies the key components of digital competence in five areas: 1) information and data literacy, 2) communication and collaboration, 3) digital content creation, 4) safety, and 5) problem solving. The five competences are summarized as follows:

•Information and data literacy: To articulate information needs and to locate and retrieve digital data, information and content. To judge the relevance of the source and its content. To store, manage, and organize digital data, information, and content.

- Communication and collaboration: To interact, communicate, and collaborate through digital technologies while being aware of cultural and generational diversity. To participate in society through public and private digital services and participatory citi enship. To manage one's digital identity and reputation.
- Digital content creation: To create and edit digital content. To improve and integrate information and content into an existing body of knowledge while understanding how copyright and licenses are to be applied. To know how to give understandable instructions for a computer system.
- Safety: To protect devices, content, personal data, and privacy in digital environments. To protect physical and psychological health, and to be aware of digital technologies for social well-being and social inclusion. To be aware of the environmental impact of digital technologies and their use.
- Problem solving: To identify needs and problems and to resolve conceptual problems and problem situations in digital environments. To use digital tools to innovate processes and products. To stay up-to-date with the digital evolution.

The framework has three levels: 1) the educators' professional competences; 2) the educators' pedagogical competences; 3) the learners' competences. or eover, the proficiency progression is described as innovation, leadership, exploration, integration, exploration, and awareness. To foster and empower educators' digital skills, strong and consistent leadership is required to recognize and meet the demands of time, resources, encouragement, incentives, and motivation. For leaders, it is not enough to implement and empower digitization. Sustainability must be maintained through an agile and resilient approach to innovation, which will be addressed in the next section.

SUSTAINING INNOVATION THROUGH PROACTIVE LEADERSHIP

The sustainability of long-term success is a vital consideration in developing new educational programs, especially because external factors, such as funding and leadership, are prone to change. Funding delays can hinder the development of programs in effectively meeting students' needs in a timely matter and the turnover in key institutional positions can deprive promising initiatives of leaders. Institutions must identify successful strategies for making continued progress in promising innovations in the face of transitioning governance. In addition to identifying successful strategies, there is a need to identify champions at all levels, who can take the lead in promoting enthusiasm and effective examples based on which, innovative future practices can be improved, deepened, and enhanced.

Kotter's change model (Kotter, 2007) might be useful to consider for application to the systemic change process. Eight steps are described in the model: 1) establish a sense of urgency; 2) form a powerful coalition; 3) create a vision; 4) communicate the vision; 5) empower others; 6) plan for and create short-term successes; 7) consolidate improvements; and 8) institutionalize changes (see Figure 4). This model is useful for leaders who aim to take the lead in the process for innovative sustainable change as well as motivate and empower team members in its process of personal and collective progress.

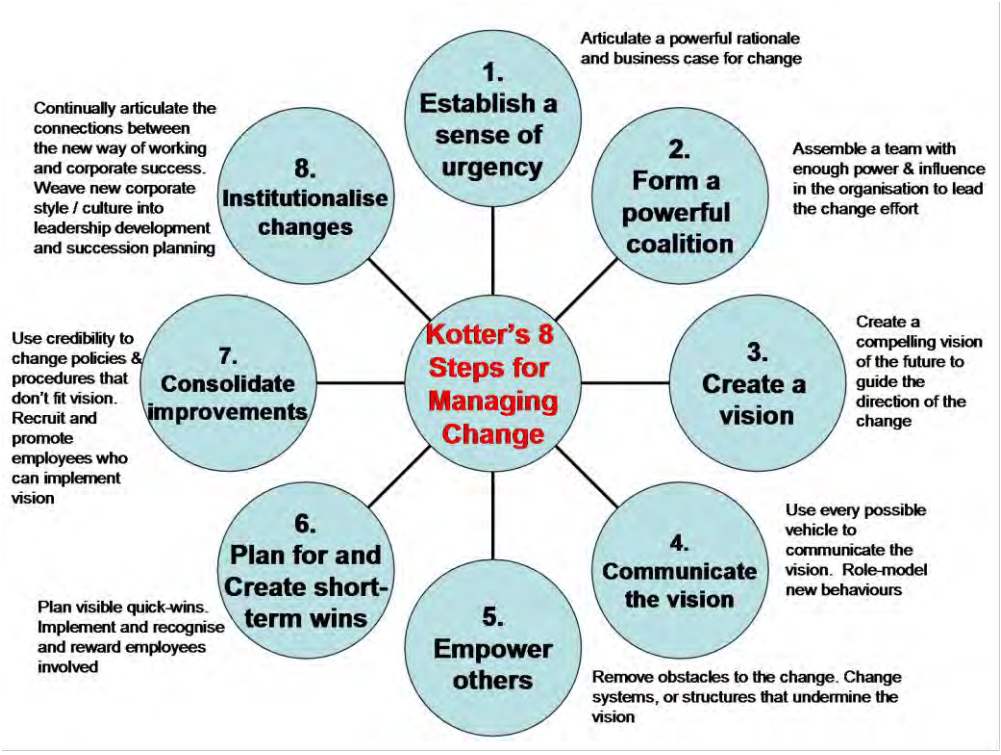

Figure 4: Kotter's change model (Kotter, 2017).

Resilience requires evolution and the adaptation to new environmental conditions while retaining identity and mindset. Shifts and thresholds in ecosystem regimes must be identified. In the ecology of innovation and transformation, sustainability must be maintained, and a culture of embedded digitization must be embedded, which requires capacity building, reliance, and trust. To implement a culture of quality in digitization, it is essential for leaders and managers to understand the complexity of digital competences, which was outlined in the DigCompEdu framework, as well as to empower their staff and learners to embrace digitization and to be critical of it, which is discussed in the following section.

CULTIVATING A CULTURE OF EMBEDDED DIGITALIZATION

Visibility and accessibility are key leadership qualities in developing a culture of quality in the fast-paced and digitized world. Although strategies and visions are no longer enough, they are still necessary, but they have to be embedded in actions and mindsets. Accordingly, everything begins in the management team. Therefore, it is crucial that in their daily activities and actions, leaders are models for everyone involved.

Leaders at all levels must pave the way for creating openness by inspiring and empowering people and by identifying champions who will lead the institution to develop different strands of open education. Hence, in this context, leadership concerns building a working culture that embeds innovations and increases quality, digital scholarship, and open approaches to change. Leaders and managers must empower the digital transformation to promote the cultural change for staff, learners, and the organization. The cultivation of a culture of quality is critical, and it must be in the interest of everyone. Moreover, it must be empowered, fostered, and encouraged by the leaders (Ossiannilsson, 2017, 2017b, 2018).

The biggest challenges relate to mindset and attitudes because systemic changes are required. Hence, for a cultural change to occur, human capital is crucial, which includes ownership, inclusiveness, and participation. Thus, a key issue for leaders is to promote a culture that not only allows people to grow, take responsibility, and build trust throughout the organization but also promotes a culture of passion and persistence (Ossiannilsson, 2017a, 2017b, 2018). To reconsider the culture of quality as it applies to open pedagogy (Hegarty, 2015; Wiley, 2013), situated learning, and the move toward self-directed learning (Hase & Kenyon, 2013) includes the rethinking of quality assurance. Several recognized international quality models of open online education use a holistic approach in emphasizing the importance of focusing on not only the learning and teaching processes but also policy, strategies, curriculum, course design, course delivery, infrastructure, and support for staff and students (Ossiannilsson, et al., 2015). Quality dimensions also relate to not only the efficiency, satisfaction, and engagement of learners and faculties but also the short and long-term effects on individuals and society.

As enthusiasts, learning technologists and instructional designers have often single-handedly taken responsibility for development in merging technology and pedagogy to enrich each other's knowledge and to help students meet their requirements and adapt to the demands of global citizenship. However, this often-self-imposed role has not always been supported, recognized, or understood by senior leaders. These technologists and instructional designers have not been allocated time, support, or resources, and they have not been given incentives or recognition, which clearly is a leadership issue. The challenge is for everyone at all levels in the institution to play a strategic role in enabling, supporting, and facilitating effective institutional change.

When new technology purchased, the leaders must prove it is worth the investment. Sheninger (2014) argued for the return on instruction (ROI) and stressed the need to prove the efficacy of digital tools, which is a task for administrators and managers. He pointed out the following six pitfalls, which leaders should consider:

1. Start the digital transformation with pedagogy.

For educational purposes, pedagogic and didactic considerations always need to come first. The pedagogy will affect the use and adaptation of technology, but of course it is also true that technology will affect pedagogy, so both have to be considered. Sheninger (2014) pointed out that the journey to efficacy begins and ends with the intended goal in mind and a strong pedagogical foundation. The addition of technology or new ideas without these in place will be likely to fail or be ineffective.

2. Ask essential questions regarding efficacy.

Asking questions provides a context for the desire of where to go, how to get there, and whether success is achieved. Initially, it is natural that here will be more questions than answers in a change process. Over time, however, concrete answers will show that efficacy in digital learning has been achieved. Rudyard Kipling's observation is apropos in this context:

I keep six honest serving men (they taught me all I knew); Theirs names are What and Why and When and How and Where and Who. (From the elephant´s child, n.d.)

3. Research helps establish the technology that works.

It might be obvious to adapt to current global experience and research in the fields of using technology in online learning environments. However, such adaptation is not always considered or implemented in educational settings.

For example, many academics are proponents of collaborative learning as well as student ownership.

4. Keep in mind the practicality of digital tools.

It is important to align the technology with demands and authentic learning. If the technology is not practical, the implementation of new ideas and practices wanes or does not materialize. Creating performance tasks that engage learners in critical thinking and problem solving while applying their learning in meaningful ways is crucial.

5. Evidence and accountability prove return on investment (ROI)

Schools have yet to take advantage of the potential of technology in the classroom to tackle the digital divide and give every student the skills they need in today's connected world (EC, 2013; OECD, 2015). The OECD (2015) reported a lack of focus on the reasons that technology should be integrated and on the lack of quality professional learning to support educators with effective implementation. Sheninger (2016) claimed that ROI should be considered in integrating technology. There also should be a greater focus on instructional design, digital pedagogical techniques, and the development of better assessments that are aligned with higher standards. The biggest problem in EdTech is that for a long time, both teachers and students have been trained how to use technology without explaining the reasons that it is used. In addition, more questions should be asked about how students become empowered to own their learning, create artifacts, demonstrate conceptual mastery, use their voices, be responsible in online spaces, and connect with the world in authentic ways. From the educators' perspectives, teachers and administrators should utilize technology and innovative practices to improve teaching, learning, and leadership.

6. Reflect on the outcomes of using digital tools.

Sheninger (2016) stressed that the most important questions to consider are with regard to learning. Sheninger and Murray (2017) extended the six considerations, and they related success to not only learning but also leadership and management. Hence, they emphasized that digital leadership is necessary to adapt to changing paradigms in changing times, and they stressed the following points for schools to succeed. However, it can be argued that they also apply to higher education:

- •Leadership and school culture lay the foundation.
- •The learning experience must be redesigned and made personal.
- •Decisions must be grounded in evidence and driven by the ROI.
- •Learning spaces must become learner-centered.
- •Professional learning must be relevant, engaging, ongoing, and personal.
- •Technology must be leveraged and used as to accelerate student learning.
- •Community collaboration and engagement must be woven into the fabric of a school's culture.
- •Schools that transform learning will endure because financial, political, and pedagogical sustainability ensures long-term success.

Leaders and managers have a key role in cultivating a culture of embedded digitalization, which requires team and capacity building. Leaders must also be aware of the maturity of the institution and whether the transition is aimed to enhance or transform the institution. Therefore, institutional maturity is discussed in the next section.

LEADERSHIP AND INSTITUTIONAL MATURITY

The focus on digitization will affect not only the ways that we work but also the ways that we educate our students and the ways in which they learn (Schwab, 2016).

Regarding leadership and the transformation process, the level of an institution's maturity as well as its direction could be considered (Ossiannilsson et al., 2015) in light of the macro, meso, and micro levels discussed previously in this paper. The level of institutional maturity can be high on one level but low or non-existent on another level. On one hand, such variation could be advantageous. On the other hand, with particular regard to quality, the lowest level of maturity could affect the sustainability of the entire institution. Therefore, it is necessary to take a holistic approach to ensure the eco system, and the sustainability of the institution. Puentedura's (2006) substitution, augmentation, modification, and redefinition (SAMR) model (Figure 5) can be used to demonstrate the institution's direction, which must be considered by its leaders. Puentedura's model first determines whether an organization aims for transformation or enhancement in implementing technology and increasing its digitization. Regarding enhancement, the implementation, maintenance, and innovation of technology are as follows: 1) substitution (S), that is, technology acts as a direct substitute with no functional change; 2) augmentation (A), technology acts as direct substitute with functional improvement. On the transformation level the approaches are as follows: 1) modification (M), technology allows for task redesign; 2) redefinition (R), technology allows for the creation of new task designs that were previously inconceivable. Stakeholders and leaders can use the SAMR framework to identify their present positions and to determine their directions. Thus, the SAMR framework provides a roadmap for the organization, the staff, and the stakeholders involved.

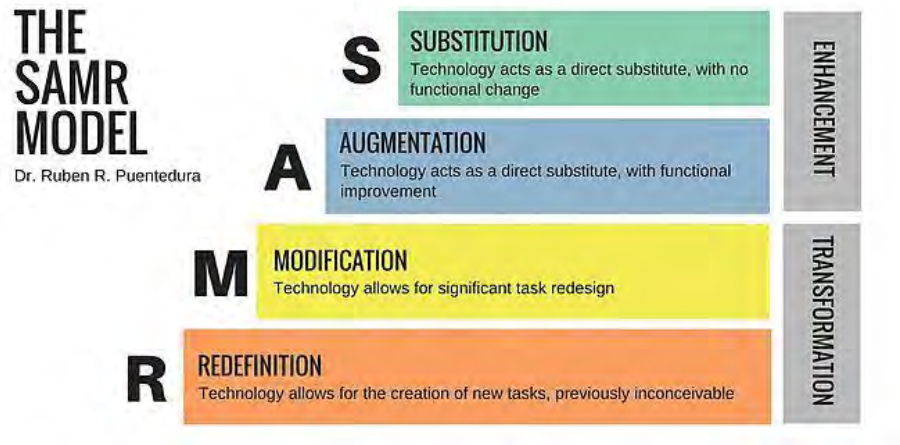

Figure 5: Puentedura's (2006) A R model.

DIGITAL LEADERSHIP AND BOUNDARYLESS WORK ENVIRONMENTS

Digital communication technology has enabled many workers to increase the flexibly of their work. Gulliksen et al. (2015) argued that the consequences of competitive advantage, meeting students' expectations, reorganization, and continuing the professional capacity building of staff are often neglected. This neglect results in negative conditions in work environments, physical and psychological health problems, and cognitive issues caused by stress and burn-out. Specifically, these effects have causal connections with the high usage of digital tools but the lack of ICT support, incentives, infrastructure, recognition, accountability, leadership, and the knowledge of how to prevent these problems. Furthermore, digital tools are often not incorporated in a well-planned manner. Many of the resulting problems could be minimized or prevented if the leaders and managers understood the causes of the problems that occur in boundaryless work environments.

Boundaryless, or the synonym boundless, means, without bounds or confines, illimitable; vast; unlimited. Boundaryless organization show how to sweep away the artificial obstacles-such as hierarchy, turf, and geography.

In boundaryless digital working environments workloads are often increased. Many workplaces are in the transition between time-related and performance-oriented working hours, and both measurement systems are applied simultaneously. Spending less time at the physical workplace can lead to feeling compelled to work more than is reasonable. Rosengren (2017, unpublished) found that it was not enough to examine the terms of employment. The standards that exist at different workplaces should also be considered. Before the advent of the internet, the work was measured according to the time spent in a physical location. The norm was to be present in the workplace during a specified period. However, the internet led to the concept that work could be performed flexibly with regard to location and time spent even outside normal working hours. Rosengrens research showed that many people feel that they work all the time. Increasingly, people take their work home, and they stated that they are expected to be available through their mobile phone and email outside normal working hours. Moreover, because the norm of being visible in the workplace persists, workers are expected to be available in their free time. The problem with flexibility is that the demands and expectations are often unclear. In addition, it is difficult to know when the work is acceptable.

The requirement to work excessively can sometimes extend to self-employment. In addition, there is a lack of trust in colleagues who sanction those who arrive late or leave the office early. Negative comments include, "Are you already leaving, or are you just working part time?" which is the title of Rosengren's forthcoming publication.

Because leadership affects the culture and norms in the workplaces, the negative consequences of the boundaryless work environment must be considered in the digital transformation of organizations. Research should examine the norms and cultures of workplaces. Rules should be developed regarding work outside the physical workplace. It is important to learn more about how norms are sustained, maintained, and communicated to improve the conditions of the boundaryless work environment (Gulliksen, et al., 2015; Rosengren, 2017). Hence, leaders should consider the following:

- Clear assignments and tasks and how they relate to the entire workplace
- Clear expectations and power
- Clear communication and feedback
- Reasonable workloads and the provision of the resources and tools required to perform the task
- Employee's skills meet the task requirements
- The working environments social context

Regardless of visions and strategies, changing cultural norms begins with people. Because the greatest challenges concern mindsets and attitudes (Ossiannilsson, 2017a, 2017b, 2018), change begins with *you*, which will be elaborated in the next section.

CHANGE BEGINS WITH YOU

It is well known that visions and strategies are important in the digital transformation and in systemic change. Educational institutions that embed such visions and strategies in actions plans that are understood by all staff, both academics and administrators, have greater potential to succeed. However, it is also well known that systemic changes do not occur by written documents, but by the people who implement them at every level (T. Belawati, personal communication, November 11, 2016). E-learning has long been developed mainly from the bottom up, and it has been implemented by enthusiastic academics who have an interest in learners and recognize the potential in technology and digitization. This recognition sometimes, but not always, has been aligned with visions, strategies, and well-adapted infrastructures supported by management. Systemic change depends on the mindsets, attitudes, norms, culture, and behavior of humans, including leaders and managers. Sheninger (2017) pointed out that leadership does not concern telling others what they should do; instead, it entails showing others how to do it. According to Sheninger, three powerful leadership lessons serve empower teams to work toward changing conditions in the work environment and to promote systemic change:

- *Inspect what you expect.*

Real changes occur when the process is monitored from the vision to the strategic plan and when accountability mechanisms are in place to ensure its efficacy. However, there often is an overemphasis on the vision aspect of change. The focus on "why" is necessary, but the clear purpose, intention, and commitment must be translated into action. In integrating technology, the ROI is demonstrated by the evidence of improved student learning outcomes. Sheninger (2016) argued that accountability is the linchpin in the change process.

- *Do not expect others to do what you are not willing to do (or have not done) yourself.*

Everyone wants change, but no one really wants to change. Getting everyone

to embrace difference and improvement is often easier said than done. Success in any change effort made in a school or organization relies on the collective efforts of the majority. The best way to be a catalyst for change is to model expectations at the outset. Change begins with you as a leader to take the lead needed to ignite the process. The leader has the ability to act and then model expectations for others. In addition, building trust and motivation and providing incentives are essential for success in this change process.

•*Build relationships by perceiving and accepting people for who they are.*

Empowering people is crucial for change, which depends on building relationships. Without trust, there is no relationship. Without relationships, no real learning or change occurs. The ability to build powerful relationships with adults and learners depends on the ability to be empathetic. Leaders believe in what others have to contribute to the greater good. Building relationships is at the heart of empathetic leadership.

Perhaps the best lesson in leadership lesson was expressed by John Dewey (1933, p.78) (as ctited in Beard & Wilson, 2013, p. 28): "We do not learn from experience . . . . We learn from reflecting on experience." Dewey's observation resonates in the concept of reflective leadership described by Alvesson et al. (2017). Therefore, is it important not only to attend to the task at hand but also to allocate the time to reflect in order to improve practice.

CONCLUSIONS

Leaders and managers can enable both the digital transformation and cultural change in their organizations. The cultivation of a culture of quality is critical. Moreover, it must be encouraged by the leadership, and it must be in the interest of everyone involved (Ossiannilsson, 2017a, 207b, 2018).

Leaders can pave the way for creating openness by inspiring and empowering people. Leaders at all levels can foster, promote, and empower sustainable open education activities and initiatives through transparent top-down and bottom-up approaches. The most daunting challenges relate to mindset and attitudes because systemic changes are required. Hence, human capital is crucial in cultural change, which includes ownership, inclusiveness, trust, and participation. A key issue for leaders is thus to promote a culture. Leaders should also promote a culture of passion and persistence. Rethinking the culture of quality as it applies to open pedagogy, situated learning, and the move toward self-directed learning includes the rethinking also of quality enhancement, and assurance. Internationally recognized quality models of open online education use a holistic approach, focusing on not only the learning and teaching processes but also policy, strategies, curriculum, course design, course delivery, infrastructure, and support for staff and students (Ossiannilsson et al., 2015). The dimensions of quality relate to efficiency, the satisfaction and engagement of learners and faculty as well as short- and long-term effects. In addition, the work and study conditions of both learners and staff should be considered.

According to Gulliksen et al. (2015), there is often a causal connection between the high usage of digital tools, the lack of ICT support, and the lack of incentives, infrastructure, recognition, accountability, and leadership. Many of these problems could be minimized or prevented if leaders and managers had insights into and knowledge about the causes of problems. that occur in boundaryless work environments.

Leaders and managers can and should make a difference related to higher education's offerings, services, processes, quality, and their effects, and impact on individuals and the global society.

There is a need for people who have the knowledge, abilities, competences, and attitudes to lead this process and to analyze and evaluate digital work environments. Such potential leaders should also become experts in the methods used to analyze complex digital environments.

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