

Human Intelligence Cultivation with the 2CG® Poetry Machine

How to Boost Future Skills Development and Idea Generation with Artistic Impulses in Lab 21

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Abstract—Acquiring pure fact-based knowledge is no longer sufficient in today’s fast-paced, globalized world where we have to deal with increasingly complex challenges and realities, such as the degrowth economy, the effects of climate change and a global health crisis. Modern learners who want to interact with the world constructively and responsibly need to cultivate their (human) capabilities, develop what are called 21st century skills and acquire relational knowledge, which implies that they can apply factual knowledge in diverse contexts to solve complex problems. The present paper aims to demonstrate how the 2CG® Poetry Machine, a mixed-method teaching strategy ideally applied in a hybrid hyper-structure for learning that is linked to a professional practice, can support learners in cultivating their (human) capabilities, developing 21st century skills and acquiring relational knowledge. Best practice examples shall illustrate how the 2CG® Poetry Machine combines disruptive impulses from the arts with customized coaching and creativity techniques, thereby enabling learners to tap their full creative potential and develop their skills further. Evaluation is based on qualitative data analysis. An iterative framework allows for continuous reflexive analysis and further development of the practice as new insights emerge or are identified in the data.

Keywords—2CG® Poetry Machine, 21st century skills, communities of practice, social learning, hyper structure for learning, idea generation, hybrid education, professional development, qualitative data analysis, iterative process

1 A humanist vision for education

1.1 Staying relevant in the 21st century

In today’s fast-paced, globalized world, educational institutions, business companies, government organizations and individuals who want to stay relevant and gain a sustainable competitive advantage need to continually reinvent themselves and

adapt their business models to fast-changing circumstances. This asks for permanent upskilling and continuous new-idea generation. In other words, modern learners—executives, employees, workers, students, pupils—need to constantly improve their practice and re-invent themselves, as is suggested in [1]. Increasingly complex realities and challenges, such as the degrowth economy, the effects of climate change and the global health crisis, the threatening decline of democracy, growing inequalities, and—last but not least—digitalization, force 21st century learners to not only acquire factual knowledge, but to apply their knowledge across contexts, cultures and hierarchies.

The current paper aims to present a multi-method teaching strategy and coaching tool that has been designed and developed for human intelligence cultivation and 21st century skills training with a focus on communication skills, collaborative skills, critical thinking skills, creativity and imagination, digital literacy, and the acquisition of relational knowledge or wisdom as defined in [2]. The 2CG® Poetry Machine is grounded in learning science and has been tried and tested in various industries and contexts over the years. 2CG® stands for content- and context-specific generic competency coaching and clearly lays out a humanist vision for education. The multi-method approach emphasizes the benefit of community of practice-based hyper-structures for learning, where learners can train their human qualities in an era where the main focus clearly is on the advancement of technology and AI, as pointed out in [3].

The practice examples given in this paper were evaluated by means of qualitative data analysis as defined in [4]. As we can see from these practice examples, the 2CG® Poetry Machine can effectively support modern learners in developing 21st century skills, in exploring new pathways of action and generating new ideas in hybrid settings. Overall, the approach considers human capability cultivation as a necessary practice for 21st century players who want to deal with complex realities constructively; build good personal and professional relationships; collaborate across contexts, hierarchies, disciplines and cultures; create a sense of belonging; identify and analyze problems that need to be solved; come up with better solutions; know their purpose; and do meaningful work. Learning should be perceived as a way of being; trainers need to act as facilitators, coaches or curators, and learners should be trained to act as multi-disciplinary thinkers, problem-solvers, innovators and caretakers—wise people who can interact with the world constructively and responsibly.

1.2 Definition of 21st century skills

The 21st century skills discussed within this work are defined as learning skills (the 4C's), literacy skills (IMT) and life skills (FLIPS) as pointed out in [5]; and as 21st century digital skills as referred to in [6] (see Figure 1 and Table 1), whereby digital literacy is seen as a mindset that enables learners to perform intuitively in digital environments and to both easily and effectively access a wide range of knowledge embedded in such environments. These skills are also referred to as relational knowledge, referred to as wisdom in [2]—knowledge that is successfully applied in different contexts and acquired through multiple changes in perspective. It should be pointed out here that we need to change perspective whenever we successfully interact with the world by applying factual knowledge, and with every shift in perspective, our wisdom grows.

Clayton and Birren as quoted in [7] propose that wisdom consists of several discrete and measurable components: a reflective component involving introspection and intuition, an affective component involving empathy and peacefulness, and a cognitive component characterized by knowledge and experience.

Learning Skills—the 4C’s

			
Critical Thinking	Creativity	Communication	Collaboration

Literacy Skills—IMT

		
Information	Media Literacy	Technology Skills

Life Skills—FLIPS

				
Flexibility	Leadership	Initiative	Productivity	Social Skills

21st Century Digital Skills

	
Core 21st Century Digital Skills	21st Century Contextual Digital Skills

Fig. 1. Beyond the 4C’s: 21st century skills framework

Table 1. Beyond the 4C’s: 21st century skills framework

Learning Skills or the 4C’s	
Critical thinking, creativity, communication and collaboration	Learners need to train the mental processes required for connecting, collaborating and complex problem solving in order to adapt and to improve upon modern work environments.
Literacy Skills or IMT	
Information management, media literacy and technology skills	The ability to discern facts, validate information and transform data into effective stories. Emphasis needs to be put on determining trustworthy sources, factual vs misinformation.
Life Skills or FLIPS	
Flexibility, leadership, initiative, productivity and social skills	Life skills are needed to effectively build relationships, find purpose, adapt to constant change and build inclusive, kind, sustainable and democratic societies.
21st Century Digital Skills	
Core 21st-century digital skills and contextual 21st-century digital skills	7 core skills: technical, information management, communication, collaboration, creativity, critical thinking, problem solving; 5 contextual skills: ethical awareness, cultural awareness, flexibility, self-direction, LLL

1.3 2CG®—A hybrid, mixed-method teaching approach

2CG® stands for content- and context-specific generic competency coaching [8] and is defined as an experiential, learner-centered teaching approach that hones human capabilities with a focus on 21st century skills (see Figure 1 and Table 1). 2CG® targets executives, employees, workers, apprentices, students and pupils who need to develop their skills further so that they can deal with increasingly complex realities and meet new challenges creatively and responsibly. The approach is grounded in learning science and the principles of communities of practice (CoP) as adapted from [9] (see Table 2). It connects learners across hierarchical, cultural and disciplinary boundaries by immersing them in practice-based learning experiences as explored in [10]. The approach has been tried and tested in various industries and contexts over the years and has been very effective when embedded in a hyper-curriculum as outlined in [11] or implemented in a hyper-structure for learning, such as Lab 21 [12]. Overall, the 2CG® approach puts the needs of learners and organizations center stage and enables them to tap their hidden creative potential.

Table 2. 2CG® teaching approach, based on the fundamental pillars of CoP

CoP Pillar 1. Intrinsic motivation is crucial for learning.	
<i>Intrinsic Motivation in a CoP-Based Hyper-Structure for Learning</i>	Learners are enabled to discover their passion and define their purpose. They are guided by the question: What’s the difference we want to make?
CoP Pillar 2. Learners engage in shared practice.	
<i>Shared Practice in a CoP-Based Hyper-Structure for Learning</i>	Learners continually reflect how their learning activities relate to their professional, real-life context and practice. Deep learning can happen when the learning is anchored in a shared practice, a shared interest and a shared purpose.
CoP Pillar 3. All learning is social.	
<i>Sense of Belonging in a CoP-Based Hyper-Structure for Learning</i>	Learning is a social process, both in real life and in virtual settings. Social cohesion, trust and a sense of belonging are the foundations of fruitful learning and collaboration. For deep learning to take place, learners need to define how they want to work and communicate with each other.
Pillar 4. Deep learning follows the principle of impulse—action—reflection.	
<i>Action Learning in a CoP-Based Hyper-Structure for Learning</i>	Social constructivist learning processes are based on the action-learning principles of ‘impulse—action—reflection’ and incorporate the cognitive, emotional and psychomotoric dimensions of learning.

1.4 The 2CG® Poetry Machine

It should be pointed out here that the 2CG® approach advocates a mix of methods and the freedom to create new methods, rather than simply using pre-existing and fixed procedures, as underlined in [13]. The Poetry Machine is a 2CG® application that provides learners with impulses from the arts—poetry, puppetry, literature, theater, photography, visual arts, dance and music—thereby enabling them to unlock their creativity, leave their semantic frames behind, ponder new possibilities and disrupt

old thinking modes and systemic patterns. Learners, be it executives, team members, students or pupils, generally act and interact within specific semantic frames that are grounded in domain-specific knowledge and cultural stereotypes. The 2CG® Poetry Machine triggers unconscious emotions, imaginations and wishes in learners by exposing them to disruptive artistic impulses. It inspires them to make new associations and create new mental models, which can help them leave old thinking patterns behind and better understand complex issues, as suggested in [14].

The interactive, iterative learning sequences that are initiated by the 2CG® Poetry Machine (see Figure 2) and guided by the learning facilitator consider both, the learning process (or learning journey) and the learning output (impact or outcome) and follow the well-known action learning principles of “impulse—action—reflection” as discussed in [15]. Learners are immersed in their learning experience and produce artefacts, such as concepts, future scenarios, stories, maps, manifestos and prototypes. During their learning journey, they start to build awareness and get better at identifying and analyzing the problems they need to solve. They continually generate new ideas—always with the goal to find better or alternative solutions to the problem at hand. Through multiple learning loops [16], learners receive relevant feedback from their peers, their facilitator, and from experts. By incorporating both, the emotional and psychomotoric dimensions of learning, social inequalities and different cognitive learning levels that may be observed in certain settings can be balanced to some extent, as is also pointed out in [17]. Best practice examples are given below to illustrate how the 2CG® Poetry Machine has been utilized in government organizations, institutions of higher learning, schools and self-organized CoPs in the context of 21st century skills programs, programming and media literacy curricula, and innovation and wellbeing initiatives.

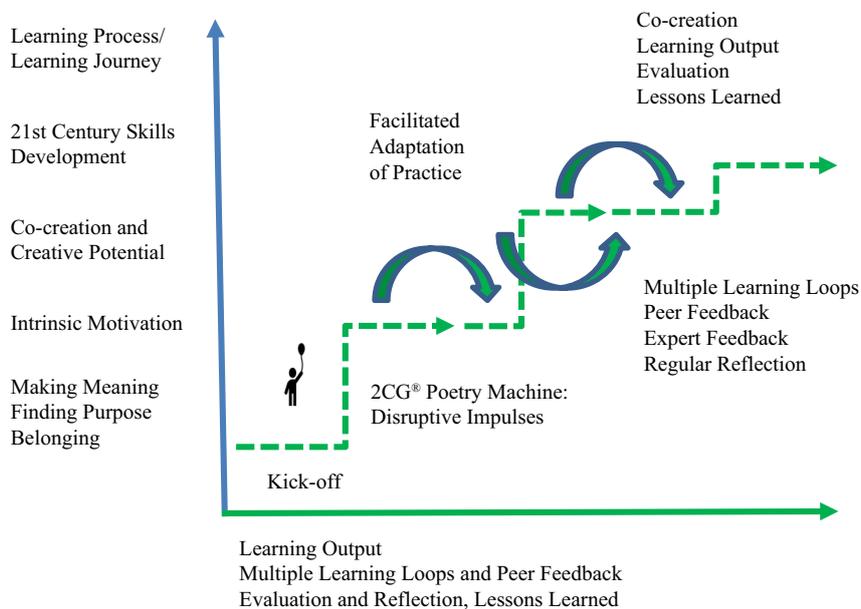


Fig. 2. Iterative learning sequences in Lab 21 as prompted by the 2CG® Poetry Machine

1.5 Three-dimensional learning in Lab 21

Qualitative data analysis with a focus on iterative questions and content analysis as laid out in [4] has suggested that effective and sustainable learning with the 2CG® Poetry Machine can take place in hybrid hyper-structures for learning that are linked to a professional practice, and where peer exchange learning happens in an environment of trust and mutual respect. Lab 21 [12] is such a hybrid hyper-structure for learning where learners can develop 21st century skills, cultivate their human capabilities, connect with their creative power and experience learning as a way of being. One key priority of Lab 21 is to provide a safe, non-judgmental and respectful culture of “learning how to learn,” as defined in [18]. This implies connecting learners and experts across hierarchical, cultural and organizational boundaries and is based on the assumption that success in today’s knowledge economy is driven by multidisciplinary interactions from different fields and areas of expertise, as suggested in [19].

It can be said that learning experiences in Lab 21 consist of three dimensions or overlapping layers: 1) the practice (shared interest, shared undertaking); 2) the social collaborative dimension (peer learning, multiple learning loops); and 3) the reflective dimension of learning (evaluation and assessment). Through these dimensions of co-creation, peer exchange and reflection, learners become part of a peer coaching culture where they can trust and rely upon each other and connect to what they do. While developing new skills and improving their practice, they become aware of what skills they have and of what skills they will need to further develop in order to stay relevant.

2 2CG® Poetry Machine practice examples

2.1 Target groups, learning goals and evaluation method

The 2CG® Poetry Machine has been tried and tested in diverse professional and cultural, urban and remote contexts for many years with different age groups, mixed gender and multi-cultural, as well as cross-generational, learning communities. The practice examples given in this paper are related to 21st century skills programs and workshop series designed and delivered in the past five years. They have been implemented in the framework of 1) a part-time bachelor program for industrial engineering and systems engineering (age group: 20–38); 2) a full-time bachelor program for cross-cultural business management and intercultural communication (age group: 19–23); 3) a full-time bachelor program for media management, marketing and communications consulting (age group: 19–23); 4) regular workshop series in technical colleges for programming and media literacy (age group: 17–18); 5) a 21st century teacher training program (age group: 28–58); and 6) government initiatives to advance new work and digitalization, health and wellbeing, innovation, and continuing education (age group: 35–57).

The programs and workshop series have been provided as hybrid, live online, face-to-face and blended learning formats. All of them are aimed at 21st century skills development. The majority of participants needs to upskill or has the explicit

goal to advance professionally; some participants' motivations to participate in the programs and workshops are based on the goal of self-development. Duration of workshops and programs varies between half-day and full-day workshops implemented in the framework of semester programs or annual programs. Some of the learning communities, both sponsored and self-organized, have been active for many years with core members and peripheral participants.

The evaluation and analysis of the practice examples given in this paper are based on qualitative data analysis as laid out in [4]. For this, data were collected on a regular basis over a period of five years by means of one-on-one interviews, anonymous learner feedback, participant observation, focus groups, skills assessment practices and expert opinions, depending on the needs and preferences of clients.

More specifically, the data material collected for evaluation and analysis in the context of part-time and full-time bachelor programs (groups 1, 2 and 3) includes video material, audio recordings and photographs, in addition to regular electronic mini polls on the subjective learning experience of learners, including their satisfaction with the course content, impact, design and delivery, as well as technological tools utilized. Learner assessment is based on traditional test and assessment methods via Moodle, oral presentations, audio and video recordings.

Evaluation of the self-organized CoP workshop formats, such as the teacher training program and the school workshops (groups 4 and 5), is based on qualitative feedback, such as focus groups, one-on-one interviews, participant observation and expert opinion. Participants of these programs are asked to deliver written reflective reports that are considered in their overall assessment by their school.

An electronic survey tool and data analysis software are used by the government organization for evaluating the 2CG® workshop series (group 6) at the end of each term. Course participants are asked to rate and evaluate the workshop series by means of mini polls, as well as qualitative input. Survey questions range from satisfaction with the course content and job-related learning impact to course design, delivery, platform solution, technological tools and overall learning experience. Participants of these government programs are not assessed.

As stated above, the data for evaluating and assessing the 2CG® best practice examples as given in this paper have been collected during the past five years. Iterative analysis of data has shown that participants across all contexts—universities of applied sciences, government organization, schools and self-organized CoP—mainly benefitted from the CoP-based learning environment where the teacher acts as facilitator, coach or curator and where shared purpose and practice, as well as peer coaching, help learners to build trust and intrinsic motivation. Furthermore, learners of all programs pointed out that they benefitted from the customized disruptive artistic impulses and creativity techniques that helped them change perspective and explore new ways of thinking while developing relevant future skills and exploring new pathways of thinking and doing.

Since the outbreak of COVID-19 two and a half years ago, almost all 2CG® Poetry Machine interventions have been provided live online, in blended or hybrid settings. Learners of the part-time bachelor program (group 1), aged 20–38, said they mostly enjoyed the benefits of live online sessions, while government officials (group 6),

aged 35–57, reported that bad internet connectivity, poor platform functionalities and equipment were the main hurdles to their engagement. The group of 19- to 23-year-old full-time students (groups 2 and 3), as well as teachers and pupils (group 4), clearly preferred face-to-face or at least hybrid settings, mainly due to short attention span, overall lack of motivation and lack of social contact. A small number of participants across all contexts and all age groups dropped out because they did not have the proper technical equipment or felt overwhelmed by the overall situation. These results reflect what has also been found in other research, such as [20], where the lack of self-management, lack of time management skills or specific learning styles are mentioned to have had an adverse effect on students’ performance. The majority of participants considered in the 2CG® practice examples generally showed high motivation, which can be linked to their level of awareness, clear purpose and learning goals.

2.2 2CG® Poetry Machine practice examples

Practice 1: Case clinic for learning workers (group 1)

<p><i>Method and Target Group:</i></p> <p><i>Case Clinic and Values-Based Communication for Working Learners of Different Cultural and Ethical Background</i></p> <p><i>Live Online Format</i></p>	<p>The case clinic and values-based communication method was implemented in the framework of a part-time bachelor study program for industrial engineering and systems engineering. Learners were provided with a real-life case where trust had been misused in a team structure.</p>
<p><i>Learning Goal and Practice:</i></p> <p><i>Exploring and Understanding the Impact of Communication Behaviors on Building Trust</i></p>	<p>Working learners should learn to put themselves into the shoes of others, develop empathy, think strategically, give peer advice, and consider the role of communication behaviors in team-building processes.</p>
<p><i>Learning Impact and Artefacts</i></p>	<p>In a live online half-day workshop, learners developed concrete ideas and an understanding of the role trust plays in team processes and collaboration. They defined core values of their organizational and institutional structures. Some divergent thinking between participants of European and Asian background drove participants to further investigate the matter and find ways to overcome this hurdle as it might impact the collaboration, innovation, and productivity of their community.</p>
<p><i>21st Century Skills Acquisition</i></p>	<p>Change of perspective, different viewpoints, empathy, strategic thinking, collaboration skills, social intelligence, communication skills, critical thinking etc.</p>

Practice 2: Teacher training college (group 5)

<i>Method and Target Group:</i> <i>Photo Journalism as part of a Language Teacher Training Program</i>	Photo stories were used to help participants gain unexpected perspectives, create a multiple perception of reality and get access to past experiences and future hopes.
<i>Learning Goal and Practice:</i> <i>Teaching 21st Century Skills in Secondary Schools</i> <i>Face-to-Face Format</i>	Language teachers should experience in a full-day workshop how they could integrate the method of photo stories into their teaching program. Visualizing different realities, perspectives and viewpoints of one and the same space helped them understand how they can immerse their students in a shared practice and support them in developing relevant future skills.
<i>Learning Impact and Artefacts</i>	Participants watched their peers’ photo stories and appreciated the diverse layers of one and the same reality. They learned how photo stories can help learners express their thoughts, broaden their horizons, and understand that there is not one true story and perception.
<i>21st Century Skills Acquisition</i>	Understanding how they can teach 21st century skills, build awareness among students, active listening, media literacy, creativity, storytelling, empathy, etc.

Practice 3: Self-organized CoP of cross-cultural city dwellers (group 6)

<i>Method and Target Group:</i> <i>Applied Strollology + Sequential Learning Experiences for City Dwellers of Different Cultural Background</i>	We perceive a cityscape in sequences, and we are biased through infrastructure, advertisements, images, videos and our own personal experiences. In other words: We see what we have learned to see, create an overall impression of the city and adopt helpful and less helpful behaviors.
<i>Learning Goal and Practice:</i> <i>Developing the 4C’s (communication, critical thinking, creativity, collaboration) and Feeling at Home in the City.</i> <i>Blended Format</i>	City strolls, including café and museum visits, were used as an archaic instrument to perceive and experience the city in sequences. Participants should learn to perceive their city with all their senses—vertically, in a linear way and fictitiously—and understand its history and culture, feel at home and adopt constructive communication behaviors. They were guided by their facilitator, experts, and artists.
<i>Learning Impact and Artefacts</i>	Curiosity, new ways of seeing, new perspectives and new sensory experiences have changed the way participants of different cultural background perceive and move in their current city. Sharing their stories and feelings and learning more about the city’s history and traditions has allowed for deep learning as well as new communication behaviors. Artefacts produced included film material, poems and collages that represent participants’ perspectives.
<i>21st Century Skills Acquisition</i>	Attention to detail; analytical skills; awareness of factors that have an impact on wellbeing; change of perspective; understanding complex situations; connected thinking; creativity; reflective skills and building an optimistic mindset.

Practice 4: Strategy workshop series (group 6)

<p><i>Method and Target Group:</i></p> <p><i>Impulses from Poetry, Puppetry, and Performance Art for Public Officials</i></p> <p><i>Hybrid Format</i></p>	<p>Three half-day workshops per term with customized content and impulses from the 2CG® Poetry Machine; poetry, puppetry and performance art helped learners to disrupt their thinking patterns, think out of the box, explore new pathways of thinking and generate new ideas.</p>
<p><i>Learning Goal and Practice:</i></p> <p><i>Creating Healthy Ecosystems of Work and Wellbeing</i></p>	<p>Department leaders, team leaders, and team members of a public sector organization should identify what wellbeing means for them in their hybrid ecosystem of work; what they would need to create a culture of wellbeing; what factors have an impact on their wellbeing; and how this relates to productivity, creativity and innovation.</p>
<p><i>Learning Impact and Artefacts</i></p>	<p>Participants identified which problems they needed to solve and developed a manifesto for wellbeing at work that served as a basis for further action steps.</p>
<p><i>21st Century Skills Acquisition</i></p>	<p>Awareness, critical thinking, analytical thinking, connected thinking, empathy, change of perspective, social intelligence, collaboration, creativity, initiative, communication skills, etc.</p>

3 Discussion

3.1 Main findings

As can be seen from the practice examples, the 2CG® Poetry Machine can push effective 21st century skills development and idea generation by combining disruptive artistic impulses with customized creativity and coaching techniques. Qualitative data analysis suggests that high learner engagement and impactful learning outcomes are obtained if the approach is applied in a CoP-based hybrid hyper-structure for learning, such as Lab 21. Furthermore, it can be said that language and communication programs, innovation and wellbeing programs, coding and media literacy programs in government and business organizations, institutions of higher learning, schools, and self-organized CoPs can provide an excellent context for 21st century skills development and human capability cultivation with the 2CG® Poetry Machine. Shared purpose and practice, as well as a sense of belonging, seem to help the majority of learners to stay motivated and engage in the learning experience, even if technical solutions are not ideal. Overall, it can be argued that effective 21st century skills development and fast idea generation are achieved in hybrid, live online and blended, as well as face-to-face, settings. Immersing learners in a context-specific, practice-based learning experience and providing them with disruptive artistic impulses can help them leave old thinking patterns behind and explore new pathways of action fast and effectively.

3.2 Limitations: quantifying transformational change

The overall goal of the 2CG® mixed-method approach is to prepare modern learners for dealing with increasingly complex realities and challenges creatively and responsibly.

Accordingly, the transformational change of learners and organizations should manifest itself in their creative problem solving abilities, behavior and daily work routines, and in the organizational structures themselves. While qualitative feedback of learners as well as participant observation and expert input suggest that the 2CG® Poetry Machine and peer learning in Lab 21 can enable learners to explore and develop new thinking patterns and come up with new insights and ideas fast and effectively, quantifying transformational change in (learning) behaviors and organizational structures has not yet been achieved. So far, transformation and change processes have been expressed through learner feedback, new insights, changed worldviews and powerful stories about improved practices. For example, learners report that they have incorporated new feedback structures into their team culture; they have learned to identify what needs to be changed in their context; they get better at adopting new practices in their team and discovering blind spots; they adopt mindfulness practices; and their insights create internal discourses or trigger further conversations with team members.

3.3 Summary and future research directions

Numerous Lab 21/2CG® Poetry Machine projects have been implemented and assessed in institutions of higher education, schools, public sector organizations and self-organized CoPs over the past five years. The following assumptions could be validated:

1. Effective 21st century skills development and human capability cultivation need to be considered an essential practice of 21st century learners, as they promote new idea generation and complex problem-solving strategies;
2. Communication skills programs, innovation and wellbeing initiatives, coding, and media literacy programs can serve as an ideal context for 21st century skills development;
3. Lab 21, a CoP-based hybrid hyper-structure for learning, can provide a safe space for cross-contextual learning, sharing and innovating;
4. Deep learning—a high learning impact, positive learning outcomes, and learner satisfaction—can be obtained if learners get the possibility to emotionally connect with the topic at hand;
5. The 2CG® Poetry Machine, a learning application that makes use of artistic impulses and customized creativity and coaching techniques, can enable learners to connect with their creative power and leave their semantic frames behind, thereby pushing them to disrupt old and unhelpful thinking patterns and come up with new solutions;
6. Educators and trainers need to act as facilitators, activators and curators. They need to create learning environments where trust, peer learning, meaning-making, identity-building, sense of belonging, collaborative team spirit and the continuous improvement of the shared practice are essential;
7. Learning needs to become a way of (well-)being; complexity and chaos need to be embraced as they allow for creativity and innovation; cultivating an optimistic mindset, meaning-making, belonging and constant exploring are part of the learning process;

8. Small hyper-curricular activities and pilot-projects can give learners and organizations the opportunity to work and collaborate on projects that they can control and implement;
9. Effective ways to measure progress in 21st century skills development and behavioral change, including qualitative and quantitative indicators and parameters, need to be further explored and developed with the help of comparative studies in multiple contexts;
10. In the 21st century, everyone needs to take the role of learner, just like everyone needs to experience learning as a way of (well-)being in hybrid environments.

4 Concluding remarks

Effective 21st century skills training and human intelligence cultivation that prepares learners for dealing with complex realities creatively and responsibly and helps them effect change in the real world is ideally embedded in hyper-curricular learning activities and anchored in hybrid hyper-structures for learning that are linked to a professional practice. To stay relevant and gain sustainable competitive advantage, learners and learning organizations need to tap their hidden creative potential, which they can do with the help of disruptive artistic impulses as utilized by the 2CG® Poetry Machine in Lab 21. More fieldwork, comparative studies and cross-sector projects are sought to further advance the 2CG® mixed-method approach and to find adequate ways to measure learning progress and quantify learning outcomes and transformations of individual and organizational behaviors and structures.

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