In conclusion, it is an excellent opportunity to make significant changes in the world by returning to the essential from the child, family and nature for a better society. The school is the organisation that must take charge of social reform, and is the institution that represents hope and future. Poverty, famine, violence, corruption, suicides, wars, inequality, pollution, health and many more, are problems that lie and depend on the human being himself, and this has to change. From the school, it corresponds to form and reaffirm that we are all educational players, that each one of us must live the universal principles and values of humanity.

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Unleashing the Potential of Digital Learning: *Framerspace and Libre Pedagogy*

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Introduction

The debates about the education system – its purpose, curriculum and pedagogy or the why, what and how of education are not new. These debates, however have gained center stage as the issues such as climate change, racism, migration xenophobia, violence and conflict rise and we find ourselves asking what we are doing to equip young people to live harmoniously and work towards more sustainable and peaceful societies. In this context, we need to revisit the traditional confines of the education system, particularly curriculum and pedagogy, to equip young people with competencies to address the contemporary social and emotional problems that we face individually and collectively and to shape more sustainable societies.

There is broad agreement amongst educationists on replacing the much-criticized 'banking' model of education, which focuses on the transfer of knowledge with pedagogies that place learners at the centre and focus on meaning making and knowledge construction. There have been numerous and deliberate attempts to develop pedagogies that take into account learner diversity and agency to foster critical thinking, problem-solving, collaboration, creativity, empathy, cross-cultural skills and other transversal skills. Even though these alternative pedagogies have gained traction at a policy level or scholarly circles, actual shifts on the ground are happening in small pockets and have not transformed the educational landscape.

Are we then to assume that these pedagogies that offer enriching learning experiences will only be accessible to a small segment of students? **Technology may provide one promising way to scale up enriching learning experiences.** Technology can be a great enabler to equalize access and actualize progressive pedagogical ideals for a large number of people simultaneously.

The education sector has seen massive uptake of digital technologies in light of the COVID-19 crisis, but we should not be too quick to celebrate this as indicating any important pedagogical shifts. We have to ask if we can call what has largely happened—namely, replacement of a lecture with a video, books with pdfs, classes with video conferences, classroom instruction with written instruction on a learning management system (LMS)—as providing more enriching and empowering learning experiences. Are we witnessing growth in 'online learning' or a mere 'emergency' in 'remote teaching' (Hodges, 2020)? At the heart of this discussion lies the application of scientifically informed digital pedagogies in online learning.

Rooted in the theory of constructivism, digital pedagogies can be difficult to define. The term largely refers to the use of digital technologies in teaching and learning. These technologies maybe applied in varied learning contexts and have the potential to address issues of 'one size fits all approach'.

Digital pedagogies, when implemented intentionally, may stimulate imagination, develop critical thinking skills, provide learners agency and allow for self-paced, personalized and collaborative learning, all while allowing the students to take an active role in their own learning and make learning interactive, experiential and immersive.

It is worth exploring how purposeful use of technology combined with principles of learning design can augment or even redefine the learning experiences for a large number of people at the same time. Below are some examples of enriching learning experiences facilitated by digital technology.

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Personalized learning: Personalized, adaptive learning, differentiated or individualized learning refer broadly to an approach where the content, medium, level, pace of learning are customized for each student. Unlike traditional education where a standard learning content or exercise is offered to all learners at the same time, this approach personalizes learning experience based on the strengths, needs, skills and interests of each learner. By using affordances of technology and flexibility of asynchronous learning, learners can be offered a choice of medium (audio, video, images and other digital tools) to acquire knowledge, engage with content and demonstrate their understanding (Eagleton, 2008) when they feel ready. Further, by employing artificial intelligence and machine learning, many LMSs are able to offer customized learning pathways to learners based on their performance or preference.

Active and immersive learning: Active Learning is often defined as 'learning by doing'. Unlike the traditional learning, experiential or active learning requires students to be active and engaged. Digital Game based pedagogies and virtual reality are leading the way in this domain. In an effective game-based learning environment, the learner works towards a goal, chooses actions and experiences consequences. They are free to make mistakes and learn from those mistakes by experimenting. This process creates a 'low risk' environment for the learners and helps them to be engaged and learn through experiences. This helps them develop problem solving and critical inquiry skills. Similarly, the virtual reality content creates avenues for the learners to engage deeply and retain more through immersive and interactive means; "it enables learning by allowing multiple perspectives, developing awareness of different situations and by facilitating utilization of learning acquired in a specific context to another 'unrelated' context" (Dede, Salzman, Loftin & Ash, 2000)

Collaborative learning and cross-cultural dialogue: **Collaborative learning is a pedagogy that uses groups to enhance learning by working together.** It entails collective problem solving, task completion, discussion and dialogue on concepts, building resources or presentations. Research has shown that peer discussion enhances understanding, even when none of the students in a discussion group originally knows the correct answer (Wood, Adam, Wienman, Knight, Guild&Sul, 2009). With use of digital tools, collaboration is neither limited by geographies nor time available in the class. The biggest advantage however is being able to collaborate asynchronously this means that learners from different time zones can be working on the same blog, wiki or other digital tools in their own time zones.

Continuous assessment and feedback: While some institutions are making a switch from the much debated standardized assessments to more constructive assessments, limited availability of teacher's time and other implementation issues make this transition difficult (Zainab Abbas, 2012). Digital assessments can enable this switch through easy integration of strategies like measuring student engagement, peer assessments, formative and continuous assessment. By use of automated assessment in blended or online environments, learners are able to get frequent, timely, and specific feedback. Stealth assessments are showing ways to make performance based assessments possible through digital games (Shute, 2011; 2013). **The biggest advantage of well-designed digital assessments however, is the fact that the system can use learner's performance data to reset a suitable learning pathway for them.**

UNESCO MGIEP's Framework to Enact Digital Learning: Libre process and FramerSpace

To build a new ecosystem for digital learning that can enable enriching learning experiences, we have advocated for integrating evidence-based digital pedagogies with interactive digital platforms. At UNESCO MGIEP, we advocate the use of a pedagogical framework called Libre (explained below) and an artificial intelligence (AI) powered digital co-creation platform called FramerSpace.

FramerSpace (FS), developed in house at UNESCO MGIEP, is designed to allow learners to experience enriching learning experiences through its multitude of features. For instance, active learning can be seamlessly realized through the subjective tools of FS such as audio, video, textual journaling, fill in the blanks, and the objective tools of multiple choice questions and match the following available on the platform. Content can be made more engaging and immersive through the platform's ability to integrate audio/video/comic stories, alongside simple and complex games. Along the same lines, collaboration, which is a strong motivator of peer learning can be incorporated using FS's ability to allow intra and intercultural dialogues and discussions among vast varieties of groups. Similarly, personalized education can be realized partly through the ability of FS to embed multimodal content and interaction tools.

The Libre pedagogical framework integrates the five transformative pedagogies of Storytelling, Games & Gamification, Inquiry, Reflection and Dialogue to create a multisensory, rewarding, interactive and engaging learning experience for learners. Below we share the seamless integration of the Libre process on Framerspacce to redefine learning experiences, drawing on the courses we created on FS.

Storytelling: **Storytelling is an age-old tradition that has been used to pass culturally relevant information from time unknown.** Apart from invoking multi-senses, and increasing the likelihood to retain information, stories also incite desirable emotions, and enhance the skills of perspective taking (Brudner, E., 2019).

The Global Citizenship course is a theme-based course on FS, aimed at building empathetic, compassionate, mindful, and rational global citizens, uses cartoon strips and code embedding on Framerspace to integrate in-house developed stories and video journals. A glimpse of this feature is shared below.

Reflection: Often in life, we engage in trivial or complex layered tasks without the awareness of the reasoning behind it. This behaviour over time may lead to a superficial understanding of things that matter to us as well as to others. It is here that reflections can help us in self-monitoring (Hubbs, D. L., & Brand, C. F. , 2005).

The Pandemics course on FS is a theme-based course, which aims at building knowledge, skills and dispositions for combating COVID-19. To incorporate reflection pedagogy, the course uses two features of FS. First, FS's ability to integrate multi-modal objective and subjective response features, and second its ability to keep learner reflection inaccessible to other users. A glimpse of this is shared below.

Inquiry: Inquiry-oriented learning is a pedagogical approach that encourages learners to find answers to questions either through their own or through common observation, thinking, reasoning, and their rational judgment and experience(ThinQ, 2014). It is an integral part of many transformative pedagogical approaches like project-based, problem-based, collaborative learning, where it takes a center stage in facilitating discussions, dialogues and reflections.

In the course of Pandemics on FS, an inquiry into an article's validity has been visualized through the features of objective and subjective responses on FS.

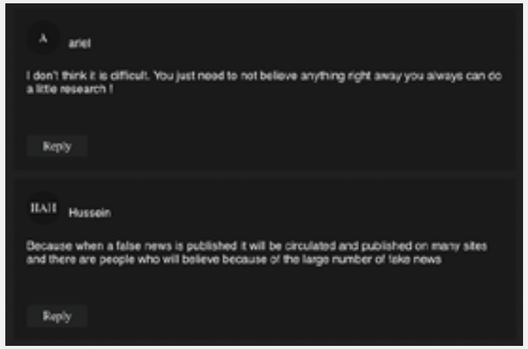
Games & Gamification

Unlike traditional rote and lecture based learning, wherein a learner is a passive consumer of knowledge, games and gamification pedagogies require students to be more active and engaged (Muntean, C. I. 2011). They, through their game design and motivators (intrinsic and extrinsic) provide a safe learning space for learners, where making mistakes is acceptable (Burguillo, J. C. ,2010; Koepp, M. J., Gunn, R. N., Lawrence, A. D., Cunningham, V. J., Dagher, A., Jones, T., & Grasby, P. M. ,1998).

Another course on Math and SEL aims to build Data Handling capabilities using SEL framework. It thrives on FS's ability to integrate external codes (using the 'embed code' feature), and integrates meaningful interactive games and gamified activities. A snapshot of a gamified activity on FS is shared here

Dialogue: The dialogic/discussion strategy adopts a safe, yet collective learning approach to arrive at new, and often improved understanding of concepts and ideas. It encourages people to share their opinions while recognizing the potential of difference in perspectives (Burbules & Bruce, 2001).

On the same course on Pandemics, dialogue has been realised through the 'discussion block' feature on FS. What is also worthwhile to acknowledge is the platform's ability to hide the user's personal identification information, thereby facilitating a safe space for participation without the fear of judgement.



STEPS FOR DESIGNING A DIGITAL COURSE

The flowchart below summarises 12 simple steps that can be used to create a digital course on a platform. Note that learning outcomes, assessments, and content development and platform affordances are moving pieces that impact each other in the process of course development and the liner steps below are only indicative.

1. Decide course topic & end goal
2. Understand your Target audience & their needs
3. Research on existing courses, curriculums and frameworks
4. Set Learning Outcomes
5. Design assessments
6. Understand the capabilities of your digital platform
7. Design platform supportive interactive digital learning resources & integrate
8. Conduct a pilot test
9. Use feedback to improve the course
10. Deliver the course to all learners
11. Continuously evaluate the effectiveness of the course
12. Use feedback to improve the course

Conclusion

There is an increasing recognition of the power of digital pedagogies to augment learning in K-12 as well as higher education globally. **However, this integration needs to be executed with caution; mere uptake of technology may not help in achieving the much sought-after pedagogical ideas of personalization, collaborative learning, enquiry based learning or continuous assessments.** Just as great content knowledge requires sound pedagogy for impactful learning, digital competencies of educators need to be enhanced so that they can effectively implement digital pedagogies to create engaging and meaningful online learning. ▶

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