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Lessons Learned in a Hybrid Environment

Eugenia Kovatcheva

Abstract

In the last two years in isolation, the hybrid environment for education becomes the most normal way to deliver education. The well-known design techniques are not enough for new learners from distance. The common practice from face-to-face training is neither. A lot of lessons are learned. The new combined approach is based on e-learning in combination with nugget education. The design considers learning and personal users' styles. The learning experience design takes a significant role in rethinking the course/training design in the hybrid environment. Nowadays, understanding learners' needs is most important for training design and to motivate them.

Keywords: hybrid environment, nugget education, learning experience design

1. Introduction

In the last two years in isolation, our way of working has changed. The most significant changes are in education for both teachers and learners.

A lot of authors [1–3] share the educational results in a pandemic situation. Deloitte has made several reviews about the pandemic situation [4, 5]. They take into account several factors as shifting to remote learning and students' behavior. Now most of the learners prefer to stay closer to their homes, they prefer to delay their education. Before pandemic students ran away from home to the college. The final decision will be made at the last possible moment. The universities have to be ready for the final decision and have to be more flexible in terms of the management of the enrolment process.

The long-term lessons for high education institutions are made as:

- learning analytics in action because the online training provides easily captured data that can be analyzed and then the new discoveries could be implemented for future training.
- data-driven improvement of the interaction between university/educators and learners reducing gaps between generations.

The strategies for improving learners' success and motivation could be provided as:

- support for sustainable development
- virtual innovative methods for interaction with learners
- using learning analytics to identify the gaps between generations and obstacles to graduation

In the pandemic period, each of the players in the educational process goes out of the comfort zone in terms of the educational process and the mental state. The institutions, educators and learners have to adapt to the new situation – new normal [6]. Certainly, the deepest impact is for the youngest, it is the subject of another study. In this chapter, attention is paid to the teachers, the learning process and used tools.

The migration from in-person education to online express some misunderstandings in high education teachers of the nature of the learning process from one side and unexpected learners' reactions. Different methods are considered, which are not related to specific subjects, but general educational approaches.

2. Online environment challenges

Most of the training before the pandemic was face-to-face and a small amount, of course, were presented in the learning management systems fully designed. The real contact between educators and learners is irreplaceable. The education got together a lot of challenges in the pure online environment [4–9]. Uncertainty was in the first place. The migration from face-to-face to online learning meets unprepared players. In the beginning, there was no clear strategy: how to provide courses, what kind of tools to use, what were the Internet quality access, how to examine learners, how to be sure of their identity, and so on.

Each institution has made its own decisions.

The divide problems in the digital environment cleared:

- divide in terms of access—Internet access or computer ownership
- divide in terms of digital skills and use refers to digital fluency
- divide in terms of digital outcomes—there are correlations between level of digital fluency and learning outcomes [10–12].

The same symptoms are observed, but at different depths for universities around the globe.

Learners' behavior:

- Passive
- Kept muted
- Kept cameras off
- Do not carefully read course instructions

	Digital natives	Digital immigrants
Process information	Quickly	Slowly
Multi-/single-tasking	Enjoy multi-tasking	One thing at a time
Learning	Gaming	Serious approach

Table 1.
Behavior gaps.

Teachers’ problems with:

- digital equipment: computer/laptop, camera,
- internet access
- meeting environment
- learning environment
- digital tools for collaboration

Most learners do not answer the teacher’s questions. There is a difference between bachelor’s and master’s. Younger learners try to remain “invisible” by keeping their cameras and microphones off. Older take more part in the classes. It is important from educators’ perspectives. Another aspect is learner satisfaction [13] which varies.

In order to motivate learners, some additional pedagogical and technological approaches need to be used. There must be a gap [14–17] in the digital behavior of learners and teachers (**Table 1**). They fall into different groups: digital natives and digital immigrants in terms of digital fluency with respect to technology usage in general, rather than on any specific technology [16].

Having in mind these prerequisites, the educators have to design their e-learning courses appropriate for blended and/or hybrid modes. The next section goes deeper into the “learning” terms.

3. Common understandings

The term technology-enhanced learning is introduced to describe technologies for teaching and learning in the last few decades. It is a broader term which has a lot of branches as e-learning, online, blended, flipped learning and so on. On the other side the traditional education or so-called learning in-person, distance learning has a longer history. The main question is what design to use digital immigrants to motivate digital natives in the extreme situation as a pandemic?

To answer is necessary to establish a common language (**Figure 1**).

In-person education or traditional classroom- means synchronous learning in a physical classroom when everyone is present. The educators provide new knowledge.

Distance learning describes the asynchronous process of learning. There is no contact between learners and educators. In the beginning, there is no limit to media. In the last twenty years usually, it means that everything is done through a learning management system. The initial effort of design, development of this type of education is more time-consuming.

Figure 1.
From traditional to flipped education. Deliver mode: in-person or online.

Figure 2.
Forms of education.

Online learning is a way of learning where most of the activities are done over the Net. In the pandemic days when most of the courses are online, this definition could be specified.

Blended learning is an approach to education that combine in-person and online modes. It was also known as hybrid learning. In the pandemic period, hybrid mode changes its meaning. **Hybrid learning** merges in-person and online learning synchronously. It happens when some of the learners are presented in the classroom and others are over the Internet.

Flipped learning and **Flipped classroom**– learners have direct access to knowledge, and they work at their own pace independent on time and place. Teachers serve

Type of education		e-learning	In-person education	Distance learning	Online learning	Blended learning	Hybrid learning	Flipped learning	Hybrid flipped education
Type of classroom	Traditional	x	x	x	x	x	x		
	Flipped	x						x	x
Place dependent			x				x		x
Time frame	Synchronous	x	x		x	x	x	x	x
	Asynchronous	x		x		x		x	
Delivery type	In-presence	x	x			x	x	x	x
	Online	x			x	x	x	x	x
	Distance	x		x		x		x	
Learning management system		x	x		x		x	x	x

Table 2.
Forms of education and main indicators.

as mentors. Both have their contact moments in a classroom and educators can go deeper into the learning material [18–22].

The broadest definition of **e-learning** is learning facilitated by information and communication technologies, regardless of which stage of the process: preparation, implementation, delivery, management [23]. It is the more common term. Nowadays most common understanding is that a learning management system (LMS) is in use. In general, e-learning supports any form of education. The design of e-learning courses depends on the goal and abilities of educators.

All terms above are well-known. They are structured in **Figure 2**. The selected criteria from the left side relate to the conditions in the pandemic.

The last column describes the newly introduced form of education—Hybrid Flipped Education. It meets a different type of delivery and the most important support flipped classroom—the most motivating way of learning for digital natives according to the latest research (**Table 2**) [13, 18–22].

The learners' satisfaction increases in a flipped classroom. It is the phenomenon, observed by the author as well. The learning activities in flipped learning could be mixed project-based or case studies. They challenge the learners and develop their topic-oriented skills and knowledge as well as a wide-range of soft skills such as critical thinking and creativity.

In **Figure 2**, the most significant forms of education are presented. In the middle, the most supportive—e-learning. At the base of the triangle, there are two founders: in-present learning—footwear on the left and distance - footwear on the right. Going through the prism of e-learning and new approaches to motivate learners—the result in hybrid flipped learning.

Educators need to know their learners. Approaches in the learning process may be different, but the main thing is to strive to motivate learners with intriguing challenges. Working on real projects in a competitive environment is one of the most motivating [24]. Learners work at their own pace and teachers are just mentors. Creating such assignments requires effort on the part of the educators. Cooperation with business helps.

4. Course design

Course design starts with its syllabus and definition of learning outcomes. In the era of competency development, there are several standards as European Qualification Framework, e-CF and. At the beginning of the learning design process, the competence definition is the objective [25]. During the process of learning design, the competence behaviors are associated with the learning activities. During the assessment, the competence behaviors are used as the measurable indicators of learning progress. After the process, the learning outcome is the extent to which the competence is acquired (**Figure 3**).

After defining the competencies, accurate targeting with appropriate tools follows. The initial requirements for the course are defined, i.e. the minimum knowledge and skills before upgrading. The next step is knowing learners. In higher education, it can begin with knowledge of their personalities according to the Myers-Briggs methodology (**Figure 4**). There are 16 types, arranged in 4 groups. The test, which follows Myers-Briggs' methodology, returns four letters that determine whether a person is Introverted or Extroverted, Intuitive or Observant, Thinking or Feeling, Judging or Prospecting, Assertive or Turbulent.

Figure 3.
Competence, learning aim, and outcome.

Figure 4.
16 personalities.

The main benefits of knowing the personality type are in group work and the distribution of learners according to their type in a group. The goal is to have a normal distribution of all types and especially not to have two or more leaders in a group, in opposite case collisions occur.

Equipping learners with appropriate tools and challenging them is next in the course.

Design thinking is a very powerful tool in various fields [26, 27]. It is a non-linear process with 5 stages (see **Figure 5**).

One of the tools wish to support the process is Bono's thinking heads (**Figure 6**), which can be associated with the stage of the design thinking process.

The tools especially for:

Empathy one as an empathy map. The responsibilities are to the Blue and Whitehats.

Define and Ideate stages could be covered by Green, Yellow, Red and White. Tools here are:

- Interview/questionnaires
- Observation/immersion

Figure 5.
Integrated design [26].

Different thinking styles for different situations

Thinking Style	Description	Associated "Thinking Hat"
Organised, controlled	Organises thinking & actions, lays out and controls objectives, purposes & processes	Blue Hat
Creative, new thinking	Puts forward new ideas, lays out options and alternatives, modifies & improves ideas	Green Hat
Optimistic, positive	Focuses on capturing the opportunity, seeks out value, reasons for taking chances	Yellow Hat
Cautious, critical	Focuses on detecting risks and faults, reasons for caution	Black Hat
Analytical	Focuses on information and facts required and how to obtain them	White Hat
Emotional	Expresses feelings, emotions and intuition	Red Hat

Figure 6.
Bono's thinking heads.

- Brainstorming
- Research

Prototyping—Blue, Black, White and Red hats. Possible tools are:

- Get visual
- Journey map
- Rapid prototyping
- Storyboard
- Role play
- Co-creation session
- Mindmap

Testing—Blue, Black and White. Tools could be:

- Live prototyping—a chance to run your solution for a couple of weeks out in the real world.
- Keep iterating—help you get a great solution to market and let you know where to push it when you do.
- Build partnerships—stakeholders/partnerships map.
- Roadmap—timeline and a plan of action to get your idea out into the world
- Sustainable Revenue—financial spreadsheets and forecasts on how the revenue of a certain product/solution/service would look like.
- Measure and evaluate—design the ways that you'll measure and grow it into your solution.

There are a lot of free or academic purposes tools for collaborative work. That means that learners can work together at the same place or from distance.

5. Activity design

The key to setting challenges is the clear instructions that learners need to receive: What the goal is, what is expected as a result, and how they will be assessed. It is important to see the real contribution, to be an important topic for them, to be able to empathize with it, regardless of their inner attitudes. And most of all to have fun in the process of work.

One example for Activity Design is presented in **Table 3**. The Abstract is not necessary to be. It is a summary of the full activity.

Efforts to design a course are great, the results are important in the eyes of motivated learners.

6. Conclusions

The isolation, the digital natives and the lack of in-person courses give birth to a new form of learning and teaching. The educators as digital immigrants have to see

Abstract	Write a short (up to 60 words) description of the assignment, which should include: the topic, the age of the target group, the subject area, the style of work (individual or teamwork), the recommended time and the expected product.
Title	If possible, write a challenging title!
Introduction	Write a motivating, short, challenging introduction.
Task	Write a short description of the task. Try to formulate it in a meaningful way for the pupil.
Goals	Formulate the learning goal/objectives (what is your goal as a teacher and/or what the pupils are expected to achieve by carrying out this assignment - with respect to subject knowledge, skills (ICT, cooperation, writing, etc.), attitudes.
Process	Describe the process step-by-step. Suggest the style of work (individual, teamwork)
Time	Give recommended time (in minutes, hours, days, weeks, ...)
Sources	Recommend appropriate sources for your pupils (websites, books, guides, activity planners)
Help	Recommend to your pupils what to do if they need help. Use instructions of the kind given below to stimulate pupils to attempt solving problems by themselves. Think about what you need to proceed further with the task. Look at the sources for help and ask your teammate for help. Only if you both do not know, ask your teacher for help.
Products	Formulate what you expect the pupils to produce.
Evaluation	Formulate the criteria to be used for evaluating the process and the product.
Appendices	Describe what needs to be developed or enclosed.

Table 3.
Examples for activity design.

insight into the situation and apply. The learning experience design takes a significant role in rethinking the course/training design in the hybrid environment. Nowadays, understanding learners’ needs is most important for training design and to motivate them.

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Thanks to my sister-in-law, with whom we share similar cases in universities on both sides of the Atlantic, as well as to colleagues from the seminar on IT Innovation in Higher Education, Varna, Bulgaria October 2021, with whom we exchanged valuable ideas.

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