

Hybrid learning spaces — a three-fold evolving perspective

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Abstract

Hybrid learning has become increasingly prevalent in the discourse of academic institutions and educational systems. The term has acquired numerous interpretations although it generally refers to different spaces of learning. This chapter introduces a three-fold evolving perspective of hybrid learning spaces, focusing on historical roots and current meanings. We present *hybrid as blended*, a synonymous interpretation commonly used; *Hybrid as a space of merging interactions*, where connected mobile technology enters the space and adds to its dynamic; and last, *hybrid as fluid*, to reflect a compound-like space where the boundaries of formal dichotomies are blurred and learner motivation takes center stage.

Keywords: Hybrid Learning Spaces, Hybrid Learning, Blended learning

Introduction

Hybrid learning has become a buzzword over the course of the Covid-19 pandemic. Google Trends indicates a sharp increase in the number of searches of the term *hybrid learning*, from the onset of the pandemic, with searches peaking during August 2020 (see Fig. 1). The term is used by departments of education, institutions of higher learning, and anyone wishing to introduce an innovative and up-to-date educational service or product to a broad audience. Although widespread use of the term began before the Covid-19 crisis, *hybridity* has become the need of the hour during the pandemic. In fact, there sometimes exists the impression that anything that is not *hybrid* is outdated and irrelevant.

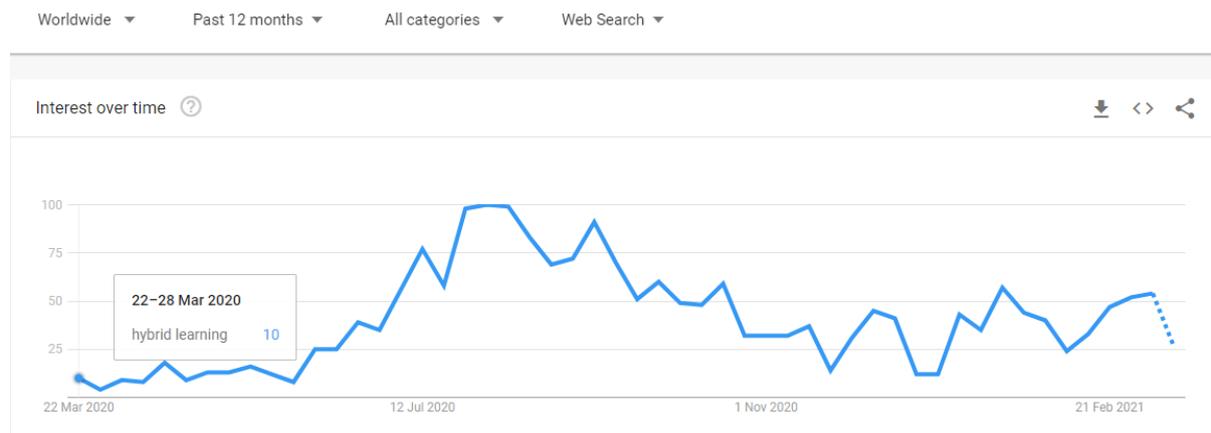


Figure 1 The popularity of *hybrid learning* searches, as reflected in Google Trends between March 2020 and February 2021.

Before moving on to formal definitions of learning, let us explore some examples of the use of the term *hybrid* in our everyday lives and workplaces. Hybrid vehicles are already a familiar concept. These vehicles combine the activity of two engines: gasoline and electric, operating alternately according to driving conditions, intended to reduce air pollution and save on fuel costs. In the field of medicine, hybrid medicine operates in the realm of telemedicine. Current medical services are partially provided at home through digital applications and devices that enable medical diagnosis and monitoring, such as via electrocardiograms, or ear imaging. Another example is a hospitalization room that can be converted into an operating room within minutes. Among the advantages are multi-functional equipment, saved time, reduced costs, and effective treatment. A new trend is also emerging in the labor market, where organizations seek to employ hybrid workers. These are multi-skilled workers who can, for example, combine technical skills, such as programming, with marketing skills, financial savvy, and so on. The ability to view a business from different perspectives holds advantages for an organization, such as the identification of opportunities, the capacity to solve problems and innovate, and also might benefit employees' professional and personal development.

The above examples demonstrate the organizational, personal, economic, and social benefits of hybridity for at least some stakeholders. However, the frequent use of the term *hybrid* does not suggest that it holds the same meaning in all cases. Moreover, there are various interpretations of the term, even within a single field. With regard to education, the Covid-19 pandemic has presented an excellent opportunity to discuss *hybrid learning*. What are the

different meanings of the term as they appear in the research literature? Are the meanings found related to technological developments?

In the following sections we map out the various meanings of the term *hybrid learning*. The main perspective is on teaching and learning processes and environments, rather than highlighting aspects relating to educational institution management and economic efficiencies. In addition, we suggest an updated meaning of *hybrid learning* to create a common language among researchers and educators. Finally, we examine the contribution of the term to teaching, learning, and learning design.

Hybrid as blended

In the research literature, *blended* and *hybrid* learning often appear as interchangeable or synonymous terms. Some authors are uncertain which term to use and mention them both. As stated in one study, “these two terms *blended* learning and *hybrid* learning are used alternatively but refer to the same concept” (Olapiriyakul & Scher, 2006, p. 288). The ERIC Thesaurus refers to *hybrid* learning as an obsolete term and synonym for *blended* learning. Thus, temporarily, blended learning replaced hybrid learning, residing under “Teaching Methods.”

Garnham and Kaleta (2002) define hybrid courses as “courses in which a significant amount of the learning activities has been moved online, and time traditionally spent in the classroom is reduced but not eliminated.” Most courses that were taught at that time (i.e., the start of the 21st century) started off as face-to-face (f2f) courses. The authors’ definition was based on the experiences of four academics from different disciplines at the same institution, who transformed their teaching into a hybrid model. The number of students in their classes ranged from 15 to 200. The purpose of hybridity was to “reduce class seat time” and “promote active independent learning.” The instructors reported that this kind of learning enabled them to better achieve course goals than in regular f2f courses, measured by the level of interaction and engagement of learners, flexibility, reduced commuting time, and the quality of learning outcomes. At the same time, the instructors asserted that they had to invest significant time in planning their lessons and learning to work with the technology. Students reported their experience with this model of hybrid learning as positive, stating that it required more effort than passively sitting in a class and that they were required to better manage their time.

Other researchers have similarly defined *hybrid* learning as combining f2f learning with access to online learning tools (e.g., Hall & Davison, 2007; Hrastinski, 2019; Watson, 2008). “Hybrid or blended learning refers to a combination of face-to-face learning, including but not confined to lectures, and online learning” (Garrison & Kanuka, 2004; see also Lack, 2013; Means, Toyama, Murphy, Bakia, & Jones, 2009; Reasons, Valdares, & Slavkin, 2005).

So far, the term *hybrid* appears to imply a somewhat technical change in study methods, as a result of external technological developments that allow for altered learning environments, without any specific reference to the complexity that might be involved in teaching/learning. It is a continuation of learning rather than a profound change. This is true for the Macmillan Dictionary 2007 Buzzwords list, where *blended learning* is defined as “a method of learning which uses a combination of different resources, especially a mixture of classroom sessions and online learning materials” (Macmillan Dictionary, n.d.).

It was initially assumed that *blended* learning, or diverse teaching methods utilizing online environments, would be a key factor in disruptive innovation in education (Christensen, Horn, & Johnson, 2008). Christensen, Horn, and Johnson (2008) claim that the traditional educational system suffers from intrinsic problems such as teacher-centered methods and curricula, unified and fixed learning approaches, and inaccessibility of quality education. They maintain that hybrid/blended learning will successfully solve at least some of these challenges by creating tailor-made teaching adapted to students’ needs in terms of level, style, topics, and schedule. Using the internet, students will be able to consume quality content even if there are no such services in their residential area. However, despite the increased number of learners in the blended approach and the variety of possibilities it offers, it seems that a fundamental disruption has not occurred.

Schank (2001) offers a cynical view on *blended learning*. He describes it as being taught both conventionally and partially online, but the emerging *blended-hybrid* product neither disrupted education nor lived up to expectations. In most cases it preserved classical pedagogy. Educational institutions still control the monopoly of content in teacher-centered curriculum resources. While there are digital versions for some of these resources, teaching methods remain basically the same. Christensen et al. (2013) retreated from their own earlier prediction: “The models of blended learning that follow the hybrid pattern are on a sustaining trajectory relative to the traditional classroom. They are poised to build upon and offer sustaining enhancements to the factory-based classroom system, but not disrupt it” (p. 3).

The term *hybrid* perhaps naturally evolved, from a term that was used temporarily but later discarded. So far, *hybrid* and *blended*, when used synonymously, have focused on the place- and time-dimensions of learning. In other words, they refer to the varying ratios between f2f, physical meetings, and online learning via digital platforms/resources. Yet the term *hybrid* is moving towards gaining a different dimension. In a widely cited paper, Garrison and Kanuka (2004) distinguish between *blended* and other forms of learning that include opportunities for online learning. They present these learning forms on a continuum: enhanced f2f that incorporates technology, blended learning, and online learning (Fig. 2). Their conclusion is that *blended* is more complex since it represents a fundamental reconceptualization and reorganization of the teaching and learning dynamics.

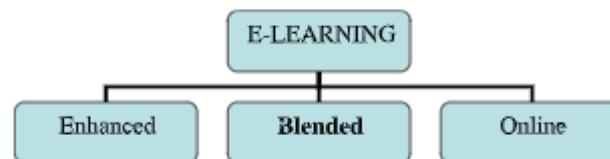


Figure 2 A continuum of e-learning (from Garrison & Kanuka, 2004).

Twigg (2003) classifies *blended learning* as five models: In the **replacement model**, lectures that are f2f are substituted partially or fully by online material (the flipped classroom). In the **supplemental model**, students are asked to attend the same number of class meetings, but to access technology or web-based materials as additional resources. The **buffet model** provides participants with a list of learning activities that includes both f2f and online formats. Selecting activities and materials depends on what is beneficial to learners' objectives and interests. The **emporium model** states that the ideal time for learning is when a student wants to study rather than when an instructor wants to teach; therefore, it eliminates all classroom meetings and allows students maximum personalization. The **fully online model** assumes that an instructor must be responsible for all tasks, interactions, and evaluations.

The above-mentioned review of what might be called the “first generation” *hybrid* definition indicates that there are two distinct worlds: one in which learning occurs f2f, and the other in which learning takes place through digital means, through distance learning and in the online environment. Each is a separate and distinct entity, and their combination is a heterogeneous mixture. That is, there may not be a uniform distribution of session types, and their ratio/quantity may vary as necessary. In some respects, the properties of each of these

learning modes are kept separate, like oil and water, which are immiscible. Furthermore, in this mixture, the instructor or institution controls the online versus f2f ratio and course content, to the most part. The considerations are often related to the convenience of operating an academic institution curriculum or to economic factors, but they are usually not pedagogical considerations.

However, the ERIC Thesaurus describes *blended learning* with more elaborate pedagogical consideration, adding to this approach other combinations, such as individual and group instruction, self-paced instruction, and the lecture method. Therefore, the questions to be answered are, what makes the combination more than a technical platform, a mode of knowledge communication, beyond time and space? How does the pedagogical design of learning fit into this and is there more to *hybrid* than *blended*?

At this point, we suggest referring to the commonly used term *hybrid-flexible*, or the *hyflex* approach (Beatty, 2008). *Hyflex* is an instructional approach for course formats that combines f2f and online learning. Each class session and learning activity is offered in person, synchronously and asynchronously online. Thus, students can choose the time and place in which to study.

In the COVID-19 crisis, numerous institutions transformed regular classes into classes adapted for teaching in these times, by reducing the number of students per class and implementing social distancing. Furthermore, they added technological platforms that allow f2f and remote participants to join in online, enabling the students to choose from where to join the session. This can be viewed as a type of hyflex - blended learning, since it allows flexibility in the technical aspects of learning, similar to the **replacement model** (Twigg, 2003). In both formations, hyflex is not a pedagogical sought-after aim or an ideal, but rather an attempt to answer current needs, giving each student equal opportunity to participate with ample flexibility.

Hybrid as a space of merging interactions

Hybrid as blended presents an approach that focuses on the location of the learner: in a classroom or in an online learning environment. Yet when students have a smartphone connected to the internet, their physical location is irrelevant. Thus, two somewhat static and differentiated states — f2f and online — progress into a more dynamic environment: “Hybrid spaces are dynamic spaces created by the constant movement of users who carry portable

devices which are continuously connected to the Internet and other users” (de Souza e Silva, 2006, p. 262).

The state of being “always on” changes our perception of the two environments and defines our communication as either f2f or f2-computer. Thus, the distinction between physical space and digital space is somewhat obscured. A *hybrid* learning environment utilizes a mobile digital interface that obliterates the barriers between f2f and f2-computer, blurring confined limits.

A state of constantly being connected adds a social dimension to the learning experience, reflected in interfaces such as chat rooms, online games, and social networks. Thus, another version of hybridity is manifested in a combination of three overlapping spaces: mobile (virtual), social, and physical spaces. As such, “*hybrid* spaces merge the physical and the digital in a social environment created by the mobility of users connected via mobile technology devices” (de Souza e Silva, 2006, p. 263).

Metaphorically, hybridity might be moving away from the concept of “mixture” towards that of a “compound.” In a compound, the materials do not retain their initial properties, but rather blend with each other, forming a new material with properties different from the properties of each constituent material. For over a decade, young people have not considered the web as a space separate from their daily lives. Rather, this space is part of their vivid reality (de Souza e Silva, 2006), a reality characterized by overlapping environments, and created by their integration via mobile devices. Since then, the impact of mobile devices and internet availability continues to unfold, and intermixed reality perceptions are at present more widespread and relevant.

As early as the 1930’s, Dewey (1976) emphasized the importance of learning environments in the educational and learning process. According to Dewey, one of the important roles of a teacher is to create a learning environment suitable for raising children, by arranging the tools and materials that may be used as stimuli and by activating those strengths and interests of the child that are conducive to learning and developing. By the term “learning environment” Dewey meant the immediate environment of the child, for example, a farm environment or one that is rich in equipment and allows space for movement and action. This approach has inspired a location-based mobile learning approach, tailored for current technology and demand. It adopts the benefits of mobile technological methods (e.g., inquiry-based, visually displayed information and location-relevant information) for learning outside the formal

classroom. Thus, the premise that the learning process can take place anytime and anywhere, through local interaction, enables the design of open-ended learning environments that provide ample possibilities for creating meaningful learning experiences. Learning tasks can be varied, including, for example, location-specific research projects, building place-based learning paths in a historical context, application development, mapping urban information, and contributing to the community. The environment may also contain resources locatable with mobile technology. However, the environment seems to be a key component in learning engagement, as Goodyear (2020) explains that hybrid learning spaces or novel complex learning spaces are “spaces in which students’ activity is situated and supported by rich mixtures of material and digital tools and resources” and goes on to refer to the important role students play “in co-configuring the learning spaces and/or the learning tasks,” referring to the ways students work with their peers.

The term *situated learning theory* is relevant to our discussion. This theory suggests that learning can be unintentional and exist within authentic activity, context, and culture. In contrast with most classroom learning activities that involve knowledge learned out of context, Lave and Wenger argue that learning is situated within a certain activity, context, and culture and that learning is also usually unintentional rather than deliberate (Lave & Wenger, 1991; Wenger-Trayner & Wenger-Trayner, 2020). It is this greater context of both deliberate and unintentional learning that play a role in hybrid learning and the various spaces it encapsulates.

An additional implication of the combination of mobile, social, and physical components is that learning becomes anchored in a context of social meaning. Learners do not engage in intellectual discussion only with regard to a specific topic, but are involved in human interactions as part of a social environment. Learning takes place with social participation (Lave & Wenger, 1991; Wenger-Trayner & Wenger-Trayner, 2020). Instead of asking what types of cognitive processes and conceptual tests are included in the process, they ask what types of social involvement provide an appropriate learning context. The social context for learning plays a central role in Trentin’s (2015) perception of hybrid learning systems (HLSs): “HLS-teaching concentrates on the **relationship among learners**, and that between learners and the knowledge to be acquired. Students are helped to be more **autonomous, proactive** and responsible towards their own **learning processes**” (p. 6, emphasis added).

This socio-constructivist paradigm that focuses on the relationship between learners as autonomous, proactive entities responsible for their learning, combined with their constant

online presence, produces an infinite potential of learning possibilities, but not necessarily those realized in an educational, institutional context. When institutions, accustomed to adopting curricula and having their teachers implement or at most interpret the curricula, realize that another world of unrelated learning is occurring outside the institution's walls, they try to close the gaps. One way to do this is the Bring Your Own Device (BYOD) approach (e.g., Alberta Education, 2012). Although this strategy allows individuals to use their private devices within an organization or educational institution, it also has clear economic benefits, and it changes the rules of the game by altering the institution's learning environment itself.

Trentin (2015) seems to support the dynamic aspect of hybrid spaces and the constant movement of users carrying portable devices. He asserts that if we want to create sustainable models for education, we need to understand both the conditions and the challenges for learning that exist in *hybrid* learning spaces. For example, teachers do not have enough training to plan activities suitable for such an environment. While in traditional teaching, the teacher conveys knowledge, the teacher's role in a hybrid environment should be to guide learners. Learners are not passive when they interact with content, the teacher, and their peers, autonomously and in groups. Learning is characterized as active and collaborative, and the content has a flexible attribute to it. The role of technology here is to encourage learners and contribute to the learning environment. Trentin (2015) presents hybrid learning space as a bi-dimensional model on the crossing axes of 'onsite–online' and 'individual–collaborative' learning.

However, there is a distance between this discussion and the designing of hybrid learning by teachers in educational institutions. Teachers require scaffolding to help them understand what learning structures are possible in hybrid environments in order to be able to achieve the required learning goals. In our opinion, teachers must compromise between the learning goals set by the academic institution and the variety of options available for learning. This seems to provide a path towards enabling sustainable teaching innovation, and leads to the term *design pattern*, which refers to practical knowledge formulated by experts that can be applied in different contexts and shared with others (Warburton & Mor, 2015).

Köppe, Nørgård, and Pedersen (2017) suggest a fresh look at *hybrid* education that utilizes educational design patterns. According to them, *hybrid* education is

the use of educational design patterns that actively strive to cut across, circumvent or upheave traditional dichotomies within education such as **physical-digital, academic-nonacademic, online-offline, formal-informal, learning-teaching** and **individual-collective**. In doing so, hybrid education invites uncertainty, open-endedness, risk-taking, experimentation, critical creativity, disruption, dialogue and democracy (back) into the heart of education. (p. 1, emphasis added)

Their definition provides tools for the teacher planning his or her lessons to utilize educational design patterns. The practical aspect of the definition is the use of design patterns into which every teacher can mold their subject material and learning goals. Within these design patterns there is a continuum, from traditional teaching to educational methods in the digital age. Köppe et al.'s definition reflects critical pedagogy, utilizing democratic values that seem to have been neglected in traditional learning methods. It attempts to break down a homogenous reality into multiple meanings and possibilities. The result is an eclectic, multi-dimensional reality with a broader pedagogical potential. This potential may be realized through the choice and combination of dimensions and is repeatedly redefined within a design pattern for learning (Köppe et al., 2017).

Hybrid as fluid

So far, the discussion of hybridity, both *hybrid as blended* and *hybrid as a space of merging interactions*, has dealt with the way in which the term “hybrid” addresses learning as a part of a formal framework, usually bound by systems and circumstances, and constraints such as place, time, and budget. Institutions need to translate learning to the framework and learner needs such as degree certificates, curricula, goals, assignments, and grades. Whether f2f or digitally, institutions use various systems to monitor students’ learning processes, and determine academic eligibility accordingly.

However, *hybrid* in its fluid meaning emphasizes something else. **It is the learners’ choice that crosses boundaries, rather than being limited with constraints.** The choice is the result of individual motivation and is not dictated by institutions or prescribed rules. True choice is possible only when there are no boundaries, or more precisely, when boundaries are blurred. Only then can the individual be fully autonomous. In this sense, *hybrid* has the characteristics of self-regulated learning.

In a like manner, “fluids, [...] neither fix space nor bind time,” suggests Bauman (2013), describing a characteristic of this era. Fluids are substances capable of flow, depending on changes in the environment, which may be rapid and numerous. Fluids are also less predictable than solids. They are constantly able to change form, and thus adjusting to space, over time. Such is hybrid learning at present, illustrated by a colorful imaginary fluid mixing (see Fig. 3).



Figure 3. Colorful fluid mixing in Fluid Simulation app, illustrating hybrid as fluid.

Stommel (2018) claims that “**all learning is necessarily hybrid**,” and says “In classroom-based pedagogy, it is important to engage the digital selves of our students. And, in online pedagogy, it is equally important to engage their physical selves.” He makes a distinction between *blended* learning, which he relates to as tactical, referring to different combinations of change in the learner’s position, while *hybrid* pedagogy is a strategy that changes the concept of place and brings the types of learning that occur in physical and virtual spaces into a dynamic place. Therefore, Stommel asserts that the term *hybrid* in hybrid pedagogy is not just hybrid learning, and he suggests that we think holistically about the variety of types of hybrids that result from the ways we live our digital lives, both in academic and nonacademic spaces. In this somewhat philosophical observation, Stommel refers to an educational conception as a whole, which regards the formation of individuals’ human identity as the center of the educational act. It is not the result but the process itself.

In *hybrid as blended*, the meaning of hybridity is rooted in the somewhat “physical” location. In *hybrid as merging interactions*, the meaning is rooted in the environment, while in *hybrid*

as fluid, hybridity is rooted in a learner's autonomous identity. In support of Stommel's view of "process," a person does not belong to only one cultural group, but forms his or her identity in various, changing cultural circles, while each sharpens and changes the individual's identity (Burke, 2006). The process emphasizes identity as an unfinished process which is revealed gradually to the person and his or her environment throughout life. People undergo this journey of discovering and shaping their identities throughout their lives. The role of education, formal or informal, is to help the person discover and shape his or her identity. As Stommel (2018) explains: "Hybridity is about the moment of play, in which the two sides of the binaries begin to dance around (and through) one another before landing in some new configuration" and goes on to state that it is expressed in the crossroads of binary pairs:

Physical Learning Space / Virtual Learning Space; Academic Space / Extra-academic Space; On-ground Classrooms / Online Classrooms; Permanent Faculty / Contingent Faculty; Institutional Education / Informal Education; Garden-walled Academia / Open Education; Scholars / Teachers; Academic Product / Learning Process; Disciplinarity / Interdisciplinarity; Performed (School-y) Selves / Real (Vulnerable) Selves; Individual Teachers, Students, and Scholars / Collaborative Communities; Learning in Schools / Learning in the World; Analog Pedagogy / Digital Pedagogy; Use of Tools / Critical Engagement with Tools; Machine and Machine-like Interaction / Human Interaction; Passive Learning / Experiential Learning; Teaching and Learning / Critical Pedagogy.

These dichotomies and the continual crossover between them create a network of possibilities in which every node is temporary for the specific need in real time. Autonomous learners continuously make decisions about their own learning. They determine what and when to study, manage their own time, decide what resources are appropriate for the learning goals they have set for themselves, adapt learning strategies, and create valuable new knowledge for others in the world. They expect to contribute to the learning of others as well as to their own learning, and see themselves as experts in specific contexts. This learning shapes a learner's identity which in turn creates further learning. Unique identity is the unifying factor in any framework in which learners find themselves. There is a mixture of work groups and leisure groups, between which learners move easily. They gain new knowledge and incorporate it into their current understanding so that their expertise changes dynamically to suit their current needs. This is part of being a lifelong learner. Since identity is fluid, learning is fluid, too.

Nørgård & Hilli (This volume) interestingly relate to *hyper-hybridity*, which may reside at the meeting point between *hybrid as a space of merging interaction* and *hybrid as fluid*. They assert that "multiple hybrid dimensions are engaged and hybridized at the same time", and "demand that we rethink and hybridize time, space, and structures so they become neither time-bound nor space-bound" (p. 8). However, they do not see the learner's motivation as necessarily central to this process.

Let us zoom-in on one example to demonstrate the fluid aspect of hybridity. This example occurred in a class in a course relating to future/active learning spaces, taught by the second author for M.Ed. students in the first wave of the Covid-19 pandemic in Israel. In this synchronous class, we hosted a lecturer from abroad who spoke about the design and impact of active learning environments. One of the students joined the Zoom meeting from her phone in her car, and during the presentation, we actually could observe her attentive participation from the car, then the walkway, elevator, and finally, as she switched to her computer at home — where she asked an extremely relevant question. Furthermore, she took some of the insights presented (about learning spaces) to her principal at school, because the student saw the knowledge as so relevant and practical as to be applicable (changing the library to an active learning space), and corresponded with the class and guest lecturers about it.

This example demonstrates how the learning process continues almost uninterrupted through different spaces, formal and informal, from theory to application, college and school, and over different digital platforms, resulting in enhanced learner motivation to bridge them all.

Metaphorically speaking, a 3D container holds hybrid learning in its fluid state, dictating its limitations. Educational systems try to adopt the fluid hybridity components via learning innovation trends rooted in understanding this perception. Examples would be micro-accreditation that makes it possible to study mini-courses to be fulfilled from any place and time; MOOCs, where one can choose a subject, lecturer, and university to study (often) free of charge; and flexible learning environments, in schools or flipped classrooms. These are attempts by educational systems to adapt their understanding of fluid hybridity and apply it so as to remain relevant and adapt to the needs of learners. Yet a truly fluid hybrid resists fixed boundaries of teacher, time, place, curriculum, goals, and methods of teaching, learning, and assessment. In fact, the attempt to define the concept of hybridity as fluid would be a contradiction to its meaning.

This raises questions about the future of higher education, particularly around how to increase its relevance to all three interpretations of hybridity and accommodate them with appropriate learning spaces.

Discussion: Integration of insights

In the attempt to encapsulate *hybrid* learning and the space in which it operates in higher education, we presented an evolution of interpretations and meanings of the concept, as related to education and learning. We first looked at *hybrid as blended*, emphasizing the interchangeability between the meaning of the terms. Essentially, *hybrid as blended* focuses on the place in which learning occurs, whether online or f2f, and the need to replace one with the other, sometimes due to technical or economic considerations. In this domain, the hyflex model (Beatty, 2008) blends in seamlessly.

We then presented *hybrid as a space of merging interactions*. Here, *hybrid* learning spaces are created by the constant movement of users who carry portable, internet-connected devices, and thus are dynamic spaces (de Souza e Silva, 2006). This hybrid beyond blended reflects the merging of the physical and the digital together with a social network and environment. It might be supported by design patterns and/or diverse learning environments. Hybridity here is not a mixture but more of a “compound.” There is a greater relevance of learning as being situated in a specific context and HLS teaching concentrates on the relationship among learners, and between learners and the knowledge to be acquired.

Thirdly, we looked at a new proposed interpretation: *hybrid as fluid*. Here, fluidity represents a greater flow in and between dichotomies such as formal/informal, with/without technology, homework/no homework, and so on, with an emphasis on a motivated learner identity that moves autonomously across dichotomies. In these *hybrid* spaces of learning, there are no “just-in-time rules.” Rather, learning proceeds in and beyond technology and space, instigated by the drive for learning and curiosity. Fluid hybrid learning is an ever-changing hybridity that is not bound by conformity and is characterized by breaking boundaries as necessary.

In this respect there is something about *hybrid as fluid* that has a threshold nature, being transient and lacking marked signs. Since we constantly need to learn quickly, in real time, this learning is always instigated from a question or an inquiry. In the same way that water uses or can be freed from conduits to sustain it, learning can be freed from previously accepted norms or confining scaffolds.

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