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A TIME-BASED BLENDED LEARNING MODEL

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ABSTRACT

Purpose: This paper outlines a time-based strategy for blended learning that illustrates course design and delivery by framing students learning opportunities in synchronous and asynchronous modalities.

Design/Methodology/Approach: This paper deconstructs the evolving components of blended learning in order to identify changes induced by digital technologies for enhancing teaching and learning environments.

Findings: This paper hypothesizes that blended learning may be traced back to early medieval times when printed material provided the first asynchronous learning opportunities. However, the digitalization of contemporary learning environments results in a de-emphasis on teaching and learning spaces. When time becomes the primary organizing construct for education in a technology-supported environment, blending possibilities emerge around five components: migration, support, location, learner empowerment, and flow

Research limitation/Implications: This study enables the readers to conceptualize blended learning as a combination of modern media, communication modes, times and places in a new kind of learning synthesis in place of traditional classrooms and technology with the teacher serving as a facilitator of a collective learning process.

Practical Implications- The major implication of this paper is that modern learning technologies have freed students and educators from the lock in of classroom space as the being the primary component of blended learning, thereby emphasizing learning rather than teaching in the planning process.

Originality/Value: This paper proposes a new model of blended learning in which physical teaching environments give way to time. Time and synchronicity become the primary elements of the learning environments. In addition, the authors suggest that the time-based model as an educational "new normal" results in technologies as enablers rather than disruptors of learning continuity.

Key Words: blended learning, new normal, time-based learning

Paper Type: Conceptual Paper

A TIME-BASED BLENDED LEARNING MODEL

1. The New Normal in education

Hinssen (2010) defines the concept "New Normal" as a phase in the digitalisation of society, now about halfway complete, where technologies will not be framed as technology, but rather part of everyday life. In this emerging new conception, there is zero tolerance for failure but a simultaneous acceptance of what he cites as *good enough*. According to Hinssen, two examples are Skype and gmail. Although he develops this notion in the context of information technology, the principle applies to the educational environment as well, where technology has a growing presence in online and blended learning.

The US Market for Self Paced Learning Products and Services predicts a five-year, compound, 22%-per-year decrease in the number of students attending traditional courses exclusively and an 11% increase in students taking an online or blended course (Ambient Insight, 2011). By these statistics, the number of students taking exclusively face-to-face courses will decline from 14.4 million in 2012 to 4.1 million in five years. To channel Hinssen, online and blended courses, programs, and institutions will be the major drivers of this change. No longer will they be viewed as alternative activities but rather as the mainstream of higher education, and combined with emerging technologies will cause autocatalytic transformation.

2. Are online and blended learning the *new normal* in education?

The explosive development of online learning in higher education has been similar to the impact of most technological innovations. Online learning generates considerable optimism because it increases access for students to education, responding to their lifestyles through flexible learning opportunities. The result has been high satisfaction levels and a focus on the educational benefits that this technology provides. Online learning generates controversy as

well (see the hype curve, for example, Linden & Fenn, 2003). Questions arise about its quality when compared to face-to-face classes: the possibility of fostering academic dishonesty and student disengagement, instructors' difficulty adjusting to their changed roles as facilitators rather than transmitters of information; faculty difficulty developing authentic student assessment protocols; technology logistical problems and the non-responsiveness of learning management systems to the innovative aspirations of instructors (Morse, 2003). A growing response to this educational ambivalence is the equally explosive growth of blended learning that has been generally conceived as a combination of online and face-to-face instruction—providing the opportunity for the best of both of these worlds (Dziuban, Hartman, Moskal, Sorg, & Truman, 2004). Blended learning's rapid growth is evident in the growth of books and journal articles dedicated to the topic (e.g., Bonk & Graham, 2006; Garrison & Vaughan, 2007; Picciano & Dziuban, 2007). In addition, a number of conferences and grants have also been focused on blended learning. In 1994, The Sloan Consortium (Sloan-C) conducted an invited symposium on blended learning for 30 leaders. This has grown into an annual workshop of more than 300 international participants (The Sloan Consortium, 2011). EDUCAUSE in cooperation with the Bill and Melinda Gates Foundation announced in 2011 their Next Generation Learning Challenges (NGLC) grant program. One of the targeted funding tracks is blended learning (EDUCAUSE, n.d.). Google N-gram shows an exponential use of the term blended learning in the professional literature over the past few years (Google, 2010). Many of these scientific meetings, professional activities and publications stress that blended learning has the potential to capitalize on the strength of both face-to-face and online learning, increasing the learning flexibility in a demand driven educational environment while maintaining the personal contact of the traditional classroom. Another argument for blended learning is that it offers greater potential for becoming a mainstream educational activity,

more so than online learning in higher education because it maximizes the educational potential of a mix of both traditional academy and Internet-based tools and services.

The notion of blended learning as some combination of face-to-face and online learning with a focus on *place* and *space*, was the impetus for developing an effective mental model accommodating the logistical and pedagogical implications of this theory. The positive aspects included the empowering realization that blended learning viewed as this mix expanded the outreach capabilities of universities while greatly reducing the demand for new and expensive infrastructure that, continually, falls behind the demand curve (Dziuban, Moskal, & Hartman, 2005). Blending redirected the conversation on campus toward effective teaching and learning across many disciplines. Clearly, embracing the concept of blended learning changed role expectations for teachers and students. Instructors embraced new roles as educational facilitators. Students had access to a seemingly limitless source of informational assets through the Internet. They could flexibly communicate with the instructor, each other, and others around the world, essentially vaporizing the boundaries of traditional classrooms. These developments severely altered the role of the instructor as merely a dispenser for knowledge and information. At the same time, students experienced fundamental changes as well. Old habits of passively attending class became increasingly ineffective and those who persisted with those behaviours did not fare well in the blended environment. The new classes demanded the motivation for continuous and active engagement as students experienced critiques of their work from their peers on a regular basis, in addition to more consistent feedback from their instructors.

This initial development of blended learning led to deeper reflection regarding its pedagogical implication, spawned by its growing research canon. Research indicated that blended courses

resulted in superior success and lower withdrawal rates when compared to face-to-face and online courses and that student satisfaction levels were highest for this format. Students most often chose blended sections, when given the choice between enrolling in face-to-face or blended sections. Faculty members reported high levels of satisfaction with their blended teaching and that the amount and quality of their interaction with students surpassed what they experienced in their face-to-face courses (Dziuban, Hartman, Cavanagh, & Moskal, 2011; Dziuban, Hartman, Juge, Moskal & Sorg, 2006).

This ongoing research, combined with a growing awareness that a blended mental construct could be a catalyst for meaningful transformation in higher education, gave cause for the authors to search the Internet and professional literature for evolving blended learning theories and models in education, industry and the military. Analysis of the 40+ models found identified three prototypes. *Infrastructure* models involve components such as mixed modalities, development time, cost factors, combined programs, multiple locations, production issues, multiple institutions and landscape considerations. *Learning environment* models are based on issues such as interaction, constructivism, communication, communities, learning management, learning effectiveness, cognition and performance support. Finally, *added value* models are driven by constructs such as synchronicity, enhancement, presence, access, reusability, transformation, replacement and process emphasis. Many blended learning models organize themselves with space as the basic frame for education where technological assets augment or supplant place-bound education. In these models, blending becomes a mix of place vs. non-place events.

3.   Towards an evolving definition of blended learning

 "Blended learning" has shown itself to be a problematic term. What is it that is blended? What kind of blend is it? Does blended learning seem ad-hoc, using a combination of traditional components as the blend? Would it be preferable for a blend to transcend the elements that formulated it?

The current emphasis on blended learning in teaching and learning evolved it into what Susan Leigh Star terms a *boundary object* (Bowker & Star, 1999). Those objects are ideas, things, theories or conceptions that resonate and hold together a large community of practice where each member has some intellectual or emotional investment in the idea. Interestingly, when members of this community assemble, however, the separate constituencies tend to differ the object's definition and application. Boundary objects are malleable enough to satisfy the needs of the individual constituencies, but cohesive enough to hold the larger community of practice together. They tend to support what Johnson terms *liquid networks* (2010). Therefore, boundary objects are generally constructed in the larger common community, but much more precisely developed by the individual constituencies. The advantage of boundary objects is their ability to maintain the interaction among several separate communities of practice. In many respects, blended learning is a prototype boundary object, pulling together faculty members, students, administrators, instructional designers, chief information officers, librarians, evaluators and journalists. Each one has a somewhat different definition and agenda for the concept but together they subscribe to the generalized notion of blended learning and participate in the continuing developmental conversation.

4. But is blended learning really about learning, and is it new and digital?

What is discussed as "blended learning" seldom reflects learning from the student's perspective, but more precisely describes teaching and course organization (Oliver & Trigwell 2005). In addition, it becomes conceptually difficult to understand what "unblended" learning might be. (Oliver & Trigwell 2005) If blended learning can be plainly understood, is it still "new?" Human learning comes from a combination of sensory experiences of different media and is always blended (Masie 2006). Accordingly, there might be better candidates for the term "blended learning." For example, ambitious and technology-savvy students often organize Internet-based learning environments themselves in parallel to participation in a traditional lecture-based course (Kearns & Frey 2010).

Most would agree that learning, not teaching, is the primary objective of education. Why, then, is "teaching" often called "learning," (as in "blended learning") or why are "teaching and learning" metaphorically attached at the hip? There can be teaching without learning, and learning without teaching. The words are not semantically identical, nor are the processes they stand for always synchronous or co-located. However, at one time they once were more entangled conceptually: teaching and learning were basically thought to take place here (space) and now (time). Technology has more or less separated the processes in time and space in complicated ways. To find functional patterns for "teaching" and "learning" in "space" and "time" seems to be an important task. One important factor is that information access is no longer a problem. On the contrary, the abundance is itself both problem and possibility. This affects teaching and learning and their time and space conditions.

5. Teaching, space and time

The teaching space itself was once a technological innovation, known from Sumerian sources 2000 B. C. and the organised education of scribes (Kramer 1949). Education had moved from apprenticeship or personal tutoring to a publicly organised rational form with one teacher who knew and mastered the art, and a number of learners (more learners than a master could have as apprentices at work) were provided a designed space and a devoted time to learn. Ideally, in this intersecting space and time there was isolation for teaching and student focus on learning. The teaching space has been an enduring and powerful concept, a metaphor for education.

Predominately, early medieval universities, course lectures comprised the aloud reading (*dictatio*) of Aristotle, Euclid and other authorities augmented with the lecturers' comments. A course was identical to a book. In this environment, students had limited access to texts, and even note taking was dependent on expensive materials. In other words, there was a lack of media for enabling personal asynchronous learning. The teaching and learning processes had to be largely co-located in space and synchronous in time. However, with Gutenberg's printing press and moveable type, texts became more accessible. This was attractive for universities that were collectors of those texts, and worrying for their faculty: in the future would people learn only from books? But a combination of teaching and books evolved into a kind of "blended learning 1.0" and few have since, before the Internet age, questioned the value of books for asynchronous learning in courses. The printed material was not the primary content acquisition mechanism but rather a supplemental resource for the student's asynchronous learning. Slowly, learning began to drift apart in space and time from the act of teaching that decreased in time due to new technologies as obvious means of quality and effectiveness. This phenomenon resulted in expanded learner flexibility and more effective teaching (a book takes time to read aloud).

The teaching space is still a common perspective for understanding courses. A common perspective in that new technologies are unneeded if enough students can attend the space. But if there is a shortage of students, spaces or teachers, new technologies can facilitate outreach or access of teaching. Often, this becomes a university management imperative, with lectures broadcast along with the standard book readings (that are no longer considered technology). As a result, questions become how much and what parts of the teaching must still be "here" (in the classroom) and how much of it can be experienced "anywhere." Space and non-space events are blended resulting in a kind of "half-distance" course, not so different from the blending when introducing print into education. In the blend, one-way lectures that once were old-fashioned can experience a renaissance because they can be broadcast or recorded. Interestingly, even very recent constructions tend to keep the classroom metaphor. "Virtual classrooms", "Classroom 2.0", Second Life classrooms and learning management systems often attempt to replicate the classroom structures.

When new technologies are considered natural and good enough, they are used in courses by teachers and students, primarily for quality and effectiveness enhancement. Eventually, then, the "here" versus "anywhere" distinction can give way to something else. Transportation of what is happening in the teaching space is no longer the ultimate goal and the sole use of new digital technologies. Therefore, the evolving imperative becomes *synchronous communication,* we in the same time, rather than physical co-location (same space).

6. Learning, time and spaces

When a student acquires information or a concept, we know that it demanded time and that it was a process, but we cannot know much about spaces involved, other than the simple fact that there was a learning space. The expressions "distance education" and "online education" are interesting, because there is no doubt that learning takes place where the learner is.

Tacitly, those terms imply that the learner has to relate to a geographical source or an originating delivery point for knowledge –a teaching space or in broader meaning a campus. However, those expressions say "you don´t have to be here (on campus) to learn any longer, as you did before." Time seems more fundamental than space for learning. The implication appears to be that newly built "learning spaces" on campuses become social with technology intended for collaborative learning, rather than enhancing teaching spaces.

The industrialisation époque introduced clocks and schedules as necessities for rational activity, and university courses reflect that with the scheduling of spaces, teachers and students for scaffolding learning in a "one size fits all" manner. Earlier research on "instructional time" concentrated on how institutions might be more effective with teaching time and how it interacts with learning time. With current technology, however, this relationship is being reassessed because of increased IT communication and media, as well as diminished control over student learning options. Also, students learn in different ways and at different paces. Bloom (1968) argued that given enough time with quality instruction, almost all students will learn; this will not happen when time is a limited resource. Possibly as a result, learning space considerations might be deemphasized and replaced with time-related distinctions, building on synchronicity and asynchronicity, and focusing on a learning process.

Michael Power has directed and researched a 3-year project at Laval University in Canada, developing and testing "blended online learning," a concept that, at first glance, can appear as a paradox. How can a blended course be online? But in Power's concept, video conferencing and synchronous desktop applications are used in place of the classroom. This project was intended as a way of improving distance courses and making education more accessible. Power developed a working template for course planning: the regular weekly shift between

activities in synchronous mode, and individual or team assignments in an asynchronous mode (Power 2008).

7. A time-based blended learning model

This distinction (synchronous/asynchronous) seems useful for categorisation and understanding the time dimension of courses, technology-enabled or not. Here, blended learning combines various synchronous elements (face-to-face meeting, video conference meetings, chats, webinars) with various asynchronous elements (book readings, assignments, recorded lectures, asynchronous research, discussion, and collaboration, for an optimal blend adapted to the course content, students' needs and teacher strengths. As this new environment develops, certain considerations come into play.

- Often, campus-based courses are called synchronous, but they contained many asynchronous activities long before the Internet age (book readings and assignments). Already, they are blended and can continue this development with the help of a synchronous/asynchronous approach instead of a here/anywhere distinction.
- Video-conference courses broadcasted to learning centres are almost identical, but the synchronous part is technology-enabled and the medium presents some challenges in terms of interaction.
- Asynchronous courses have no particular times or places, but rather general time frames. Correspondence courses, CD courses and asynchronous online courses are not blended in this sense. They are solely asynchronous and thus more flexible but lack synchronous learning interaction. Now, with help of communication technology, some of these are adding synchronicity and becoming more blended in this sense.

- Lecture capture courses are effective because they can offer students both a synchronous alternative (attend the lectures) and an asynchronous (watch recorded lectures later) or a combination (attend lecture and review later if needed). However, they tend to conserve a lecture-based knowledge transfer pattern that can become increasingly diminished when the Internet, not the teacher, is seen as the source of knowledge by young people (Tapscott 2008).

The blends can be traditional with conventional media and communication – or new and technology-supported with an increasing range of possibilities for blending. This indicates a shift toward anywhere *synchronous* learning, with fewer physical classrooms meetings, but more learning interaction.

Therefore, most courses are a blend of synchronous meetings and asynchronous activities, and both can be technology-enabled. Not new, but a perspective within which the following five features (Figure 1) can be described when new media and communication integrates in mainstream courses.

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Insert Figure 1 about here
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Support

1) The students' asynchronous work can now be supported much more effectively with learning management systems, blogs, assignment drop boxes, forums, Twitter, and other tools. At times these assets function as the new core of the course with synchronous meetings serving a support function. Traditionally, the asynchronous work was minimally supported by the institution. It fell to the students to learn and manage their time. The examination would reveal the result. Now, there is much to gain by getting more out of asynchronous work and having synchronous support communication between meetings. A question for discussion can be how transparent the learner's habits should be. "Learning

analytics" enables more detailed information about engagement than a glimpse of a student face in a lecture hall.

Migration

2) Traditional course elements can move between the synchronous and asynchronous domains. For example, a clear opportunity for resource saving is to deliver a one-way orientation lecture on the learning management system in a streaming video format, have the students view it, then assemble them in a synchronous meeting for discussion and application. New tools give birth to new practises and wiser use of times and places.

Synchronous location

3) Synchronous meetings are not always co-located. A face-to-face meeting is only one possible form for a synchronous event. Video and telephone conferences, online chats, e-meetings, and other formats are equally effective in many situations if it is pacing and support we want. If a teacher should wish to introduce something new and difficult in the course, get deeper in the analysis of a concept, check all that has transpired thus far, or use the event as a milestone for turning in assignments, then synchronicity, without co-location, often suffices.

Flow

4) The connection and mutual support between activities in synchronous and asynchronous modes can more easily be optimized in a coherent course flow. The effectiveness of blending lies in the timely mix of modes, communication and media that transcends the blend. An interesting discussion may start synchronously in class and be developed in depth in an Internet forum where all post contributions and the corresponding discussion continues at the next meeting, etc. Preparatory text reading

can be facilitated by a community of practice among students before a synchronous meeting.

<u>Learner empowerment</u>

5) Learners can use their abilities and resources more effectively if they can access all course content anywhere, anytime. They can have rich social communication possibilities when studying, while still being helped and guided by synchronous meetings and learning interaction.

When courses are developed in this direction, a scalable and adaptable continuum emerges from a *blended* classroom course to a *blended* online course that is able to respond as the context changes. Conventional and technology-supported courses are not separate entities. All courses contain both synchronous and asynchronous elements and can feature an intelligent shift pattern between them, able to accommodate multiple needs simultaneously. Groups and individuals at multiple locations with varying time conditions can interact while learning together in a blended format. As a result, universities might reduce the number of separate course formats to perhaps two (blended and asynchronous). Using a space perspective for courses complicates combined teaching groups and the associated planning. Seeing learning in a time and process perspective with space as an augmenting resource among many others for leading a group, new possibilities emerge for reframing the teaching and learning paradigm.

8. Conclusion

Often, it becomes easy to be caught up in dualism: Campus or distance course? Blended or asynchronous? Both the place perspective on the blending of courses (here/anywhere) and the time perspective (synchronous / asynchronous) are dualistic as well. Technology integration in courses will not stop with scheduling and transportation issues and the question of location

for teachers and students. Nor will it stop with increased alternatives for shifts of time modes

in a course. In technology adoption we have a long history of accomplishing the traditional

more effectively by perfecting technology for transferring knowledge in and from the

classroom. When education abandons this practice, we enter a new normal period when we no

longer think of digital tools as technology and when even blending becomes an irrelevant

concept. Combining modern media, communication modes, and times/places will become

more natural for both teachers and students in a new kind of learning synthesis in place of

juxtaposed traditional classrooms and technology-enabled education concepts. A teacher as

the facilitator and leader of a collective learning process seems as a more sustainable structure

than both classrooms and courses. Figure 2 depicts some of those possibilities.

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Insert Figure 2 about here
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Time-based blended learning from a social systems perspective (Getzels, Lipham and

Campbell, 1968) suggests fundamental changes in the expectations for both teachers who

move into a more facilitative role, and students who must become much more engaged with

content, their peers and the instructor. As we interpret Shirky (2008), the boundaries of the

"classroom" will disintegrate in a time-based blended model where it will no longer be

possible to metaphorically close the door requiring that most of the information and

knowledge in a course emanates from the instructor. In a real sense it becomes possible that a

course has a specified beginning but no formal ending. This issue is continually raised by our

students when they ask, "Why do we need semesters?" Fundamentally, this is an excellent

question for which we have no good answer-especially when we deemphasize space in the

course equation. As matter of fact, this phenomenon appears to be eliminating boundaries

among disciplines as well and in the possible future students might be asking, "why do we

need separate disciplines?" Lanier (2010) suggests answers to both of these questions when

he talks about software lock ins and Web 2.0 stinkers. He points out that the brittle nature of computer programs can cause designs to become frozen in place because they continually build on old platforms. The metaphor for data storage is the individual "file" which may not be the best information solution as technology evolves. However, because of lock in, probably files will be with us for the duration. Perhaps we are experiencing a bit of *lock in* by assuming that the "course" is the best vehicle by which students might learn and forcing them to build on what has come before. If we continue to build learning technologies on top of old scaffolding, genuine transformation will be difficult.

Finally Meyer (2005) warns us to be very careful in the metaphors we choose to describe what we do. By modifying learning with "blended" we are tacitly implying that it is something fundamentally different from "regular learning." She poses what if we simply dropped the blended and evolved into "plain old education?" (p 1263). She argues that this would create a new educational reality that education occurs though a multiplicity of sources, and is at all-times personal, technological, social, constructivist and pedagogical. Perhaps in the future we will be able to discontinues conversations about, space, blending and perhaps even time

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Figure 1: Constructs in a time-based synchronous-asynchronous blended environment

SYNCHRONOUS

Migration

Location

Flow

THE COURSE EXPERIENCE
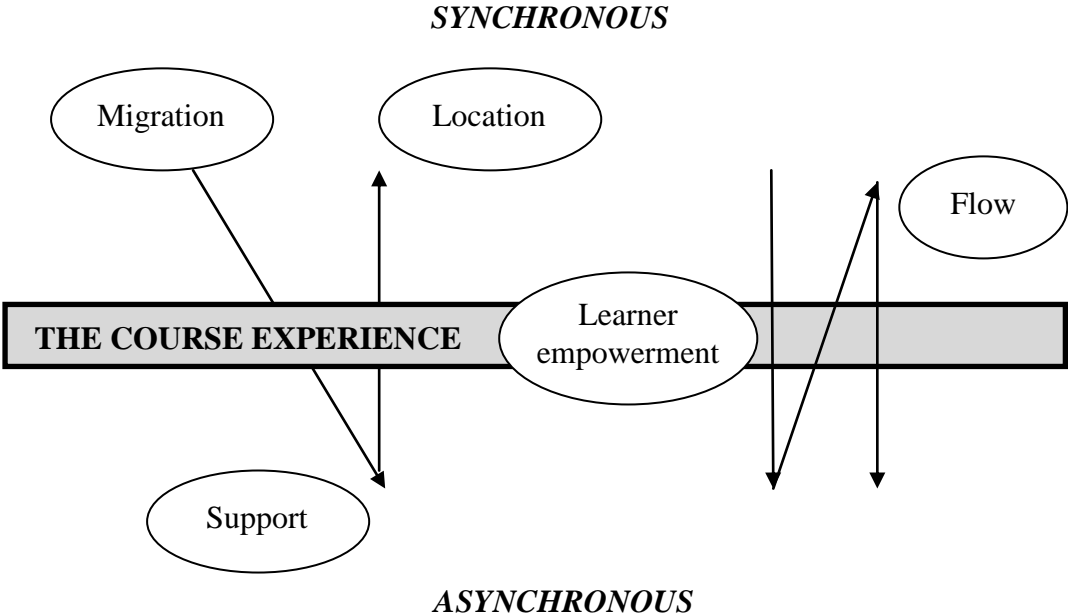
Learner empowerment

Support

ASYNCHRONOUS

Figure 2: Some possibilities for time-based blending