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Time for Learning

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If there is one experience that is common to everyone, it is the time needed for all types of learning. The acquiring of any kind of knowledge or skill takes many hours, weeks, or even years; for example, it takes many years to learn a trade or profession. What do we know about the temporal dimension of these learning processes? What different types of time are involved? In what ways are learning time and development time linked to each other? What are the concepts of learning time that underlie our educational practices? Apart from testing at specific times to measure the knowledge acquired at different ages, what do we know about the processes by which that knowledge is constructed in the long term, over weeks, years, or even a whole lifetime?'

This chapter refers to three contributions which, in different ways, shed light on our understanding of the temporal dimension of learning. They refer to a variety of educational situations with different timescales and different conceptual approaches. What they have in common is that they show how the learner's own time is an entity that cannot be separated from time specific to the educational situations in which knowledge and skills are transmitted in our society. They show that time for learning is inseparably linked to other times, such as time for teaching (as described in the contribution by Schubauer-Leoni), media time, where the different types of media used for communication within an educational course impose their own timings (Perriault), and also the time related to different stages of an individual's personal and professional life, which are increasingly uncertain and discontinuous (Dominicé).

Studying the temporal dynamic of learning itself involves a number of the challenges related to education, particularly the problem of the educational significance of time use in school. This has been the subject of great controversy, and in the world of education it is sometimes felt that any discussion will just end in deadlock[1]. In particular, such a debate opposes two orders of reality, i.e., school time and the student's own time. School time is the time allocated for learning according to a timetable which has evolved over several hundred years, closely related to the development of different times for work and leisure within society (Carré & Caspar, 2000); the student's own time is the time needed for the student to learn[2]. Framed in these terms, the two orders of reality tend to be seen as mutually antagonistic. School time, a heritage from the past, is seen as a constraint on the progression of teaching and learning, and is seen only as disturbing the students' own personal time. This has led to a continual search for greater flexibility in academic timetables to ensure that as far as possible, they suit the tempo at which each individual learns (Fotinos & Testu, 1996). It is interesting to revisit under this perspective of timetables, time use, and attention to the individuals' rhythms, a number of the educational projects implemented over the last two decades to introduce greater individualization and differentiation in teaching.

Seen from this point of view, school time and the time framework it imposes are perceived as constraints or even shackles that obscure its original function of providing a structure. It is no more than allocated time, an envelope that defines a space where teaching activities will take place, and so provide opportunities for learning. In the field of education, hypotheses relating to the effect of the time framework itself

1 See e.g., the dossier "Les rythmes scolaires" in *Le Monde de l'Education.*

2 Since the 1960s, this concept of the personal time required has been the basis for all research into more individualised learning, and in particular into the teaching of mastery learning. This is demonstrated most explicitly in Carroll's model as presented by Hubermann (1988); the model suggests that what a student acquires in a given time (usually, within an academic year) should not be the criterion of competence, but rather, the time a student needs to arrive at a predetermined level of competence.

on learning have up until now been little studied; the relationship between academic time and actual learning has often been limited, by default, to a quantitative approach, as if it were possible to establish a relationship of simple proportionality between the number of hours allocated to the learning of an area of knowledge, and the extent of the knowledge acquired which ought to result from this.

This is where the contribution by Maria Luisa Schubauer-Leoni *et al.* is so important. In order to explore the relationship between *personal time* and *institutional time*, the authors introduce an intermediate level of analysis, didactic time, which deals with the process of advancing within the teaching program. This advancing is the teacher's prime responsibility; it is a complex process which consists of introducing new knowledge at suitable timepoints, to extend the knowledge previously studied, and which from that point on belongs to the class memory. As the authors say, "didactic time is created from the dialectic between *old knowledge* and *new knowledge*."

The students are the teacher's partners in this advance. What they learn over the course of time is closely related to the passing of didactic time itself. However, learning time does not follow the same pattern as didactic time. We are only too aware that progress in learning does not follow the linear nature of teaching programs.

In addition, didactic time cannot be conceived outside an institutional context. Its passing itself assumes the implementation of a teaching program within an allotted time. It has been shown, in particular from the survey carried out by Husti (1994), that a preoccupation with not losing time is shared by students as much as by teachers. To some extent this preoccupation actually becomes the engine of didactic time, and in this sense, *institutional time* is seen to have a structuring role.

This structuring role is probably easiest to discern in the extreme case where it is completely absent, for example in the many teach-yourself courses available. Such courses very often advance by stages, which paradoxically are called lessons. They suggest that anyone can easily learn a new language in 90 lessons, the piano in 20 lessons, photography in 16 lessons, etc. Experience shows that in the absence of any defined relationship or institutional framework, students soon find they are out of their depth with these courses, unless they have a quite exceptional tenacity and capacity for personal organization. Didactic time needs a teacher and students to bring it alive, because any form of learning involves socio-affective as well as cognitive elements, as we have observed in the context of a technical college (Perret & Perret-Clermont, 2001).

The desire to introduce flexibility into the places and times where learning takes place is probably most clearly shown in the field of distance learning. The various e-learning projects currently being developed as part of a university course are designed to offer direct access to knowledge so that students can work in any specific area of knowledge independently, freeing themselves from the constraints imposed by regular attendance at scheduled classes or weekly exercises. This has now become possible because any help required can be made available at any time on a "just in time" basis. It should be noted that this idealized vision of totally flexible study activity is not shared by the vast majority of students. Surveys have confirmed this; students currently enrolled at university have expressed major reservations about doing away with weekly classes or exercises in favor of more independent study (e.g., Perret & Schubauer-Leoni, 2002). The most common reason given was the fear of losing opportunities for oral communication, which are irreplaceable in that they seem to make the knowledge expounded in them more alive than is possible with written communication. But students also expressed a fear of losing the security of a time framework marked by collective times that provide a structure for the week's work.

In fact, the distance learning systems currently being tried out in university courses require very precise planning of study activities, following a schedule that shows the student what they have to do at each stage to ensure regular progress in their studies. In some ways, the timing and discipline involved in distance-learning courses are far more of a constraint on the student than the traditional course framework. Advocating distance learning as a way of freeing yourself from constraints of time and place is just an empty slogan. What is involved here is in fact a transformation of the system of constraints, particularly time constraints, but there is no question of just doing away with them.

Jacques Perriault's contribution begins by tackling this question of the new temporal dy-

namic involved in communicating knowledge through distance learning, based on a case study. This involved a system designed to allow several groups of students located in five European universities to follow a distance-learning course simultaneously, with the key factor being common meetings conducted by interactive video conferencing. The author analyzed these multisite meetings by remote communication. It was shown that managing verbal exchanges in this situation was a very demanding task; the method of communication and the design of the interactive system imposed their own tempo and created "temporal compression," as the author puts it, which the participants were strongly aware of. In particular, for this specific situation, the analysis demonstrated how important it was for students to be able to manage cognitive tasks in parallel (simultaneous listening, co-operating, formulating questions, etc). It is also interesting in this type of situation to see who is responsible for advancing the work. In the last resort, students' questions for experts in the subject being taught were managed by a coordinator on the platform, who selected them and forwarded them at an appropriate time, to maintain a coherent debate. The process of coordinating this question-asking process was based more on the model of television broadcasts than on a traditional class situation. However, in this situation too there is one person (a trainer? a coordinator? a discussion leader?) whose key role is to decide whose turn it is to speak and to move the debate forward, within a defined model and within a timetable which by its very nature must be fixed (video conferences lasted for an hour and a half).

It is not only younger students who want a framework for studying; they would tend to want the familiarity and reassurance of a traditional timetable, as they have not been taught how to study independently. The adults described by Pierre Dominicé who were in continuing education also frequently asked for this type of framework, even though this type of learning is based on a completely different timescale. Apart from early periods of training, the biographical approach adopted by the author measures learning processes in terms of an individual's whole lifetime. In a constantly changing socio-economic and professional situation, careers become increasingly uncertain and disjointed with frequent changes of direction, which involve the individual in further learning each time. In these circumstances, the act of learning is not defined as such simply because it is part of didactic time or an educational program with a defined course. The time in question is the time of life events and the psychosocial transitions which adults have to deal with, reconstructing themselves each time with the help of new ways of understanding and taking action (Baubion-Broye, 1998).

Requests for support expressed in this situation are different from those expressed by younger students; adult students need to find reference individuals whose role includes the important task of explaining possible forms of learning in the light of knowledge and skills already acquired, which the adult may not necessarily be fully aware of. Starting to learn something new always involves taking risks; obviously there is the risk of not achieving it, or only partially achieving it, but there is also the risk of having to change one's way of doing things and one's thinking. This risk is easier to cope with if someone experienced and confident feels that it is not unreasonable. What Dominicé has shown us, from his wide experience as a researcher and educator, is that lifelong learning is far from being a smooth, flowing process.

In conclusion, we would like to make three points about the temporal dimension of learning.

(1) The educational situations analyzed are related more closely to the dynamics of learning than to the learning process itself. Experimental laboratory situations traditionally make it possible to isolate specific learning processes (e.g., learning by imitation, memorizing, problem-solving, thinking, discussion, comparing points of view, etc). When a wider timescale is used to analyze actual situations of teaching and learning, a number of cognitive activities are actually found to be involved. Learning new knowledge and skills implies a succession of times for listening, thinking, imitating, reading, questioning, writing, memorizing, practising, and discussing. Activities are sometimes conducted in a group, sometimes individually, and they may be closely guided or carried out independently. In addition, knowledge is not developed cumulatively by adding successive information or skills, but by integrating them. Learning interweaves both pro-

spective and retrospective thinking, or to put it another way, times for discovery and times for reviewing previous experience. It is through these multiple practices, through sequences that are codified to a greater or lesser extent according to the rules, expectations or educational plans involved, that new knowledge is formed over time.

In this sense, it is more appropriate to use the term "learning dynamic" than "learning process." By linking the situations and activities that it assumes, a learning dynamic is necessarily a long-term entity, and its temporal dimension therefore becomes a fundamental part of it, as a time for cognitive restructuring.

(2) Our second point is that a learning dynamic does not seem to have its own specific time, but is always interwoven within other times. It could be said that any approach to learning dynamics has to be "situated." As our authors have shown, learning time is part of the didactic time guided by a teacher, or the time imposed by video-based communication systems, or one of the high points of an individual's journey through life. Like Pineau (2000), we can analyze these various nestings of multiple times in terms of synchronisers.

(3) The last aspect is that because of the multiple cognitive and socio-cognitive activities that it involves, a temporal dynamic of learning appears to require a professional figure in all situations, a person who has the difficult task of organizing, facilitating, explaining or even ensuring the advancement of learning. The learning dynamic considered here, specific to different educational contexts, requires the involvement of a more expert, more highly-skilled individual, who attempts to create over time the conditions in which new knowledge can be constructed. These conditions are designed to encourage the learner to reappropriate the questioning of their knowledge, and this reappropriation will in turn involve that individual in a dynamic of knowledge.

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