

See discussions, stats, and author profiles for this publication at: <https://www.researchgate.net/publication/360354677>

Attempt at problematization and modeling of "distance learning" in educational didactics of languages-cultures : for an engineering of hybridization

Article · May 2022

CITATIONS
0

READS
7

1 author:



Christian Puren
Université Jean Monnet

52 PUBLICATIONS 550 CITATIONS

SEE PROFILE

**ATTEMPT AT PROBLEMATIZATION AND MODELING OF "DISTANCE
LEARNING" IN EDUCATIONAL DIDACTICS OF LANGUAGES-CULTURES:
FOR AN ENGINEERING OF HYBRIDIZATION**

English translation of *Essai de problématisation et de modélisation
de l'« enseignement à distance » en didactique scolaire des langues-cultures :
pour une ingénierie de l'hybridation*, 1^e éd. électronique septembre 2020, 56 p.,
www.christianpuren.com/mes-travaux/2020e/ and
www.researchgate.net/publication/360354677

Table of contents

Acronyms used.....	1
General introduction	1
1. Re-examine the notion of "distance learning"	4
Introduction to Chapter 1: the autonomy of ideas in the "noosphere"	4
1.1 Some historical examples	4
1.2. The expression and the notion of "distance education".....	6
1.2.1. Hybrid teaching-learning" (HTL)	6
1.2.2. The different modes of teaching-learning relationship.....	8
1.2.3. The question of evaluation	8
1.2.4. The question of use	9
1.2.5. The question of time	9
1.2.6. Presence and absence, distance and proximity,	9
1.2.7. Education at a distance	10
1.2.8. Distance and "new technologies".....	10
Conclusion of Chapter 1: the seven notional pairs of the hybrid teaching-learning (HTL) problematic	11
2. Designing hybrid teaching-learning (HTL) and reorganizing the teaching-learning "system" ..	15
Introduction to Chapter 2: the notion of "system".....	15
2.1. The "school form", a subsystem of the school "system"	18
2.2. An example of an insufficiently thought-out implementation of hybrid teaching-learning (HLT): the "flipped classroom" in language.....	23
Conclusion of Chapter 2: The construction of AHE systems, a complex reengineering process	25
3. Starting from fundamental disciplinary models: two examples	26
Introduction to Chapter 3	26
3.1. The different cognitive models of teaching-learning.....	26
3.2. <i>The different methodological matrices</i>	28
3.2.1. The active matrix.....	28
3.2.2. The communicative-intercultural matrix.....	29
3.2.3. The plurilingual-pluricultural matrix.....	30
3.2.4. The action matrix	31
Conclusion of Chapter 3: <i>A Heuristic Model of AHE Reengineering Crossing Environment Types and Domain Types</i>	31
4. A complex model of face-to-face relationship in hybrid teaching-learning (HLE)	32
4.1 <i>The model table</i>	32
4.2 <i>The different modes of face-to-face and remote networking</i>	33
4.3 <i>Some examples of crossbreeding</i>	33
4.3.1 Continuum # teaching	33
4.3.2 Opposition # learning.....	34
4.3.3 Evolution # usage.....	35
4.3.4 Contact # learning.....	37
4.3.5 Dialogic # face-to-face	38
General conclusion: For a didactic of hybridization	39
Bibliography.....	40

Acronyms

- DLC: Didactics of Languages and Cultures
- HTL: Hybrid Teaching-Learning
- L1-L2: Source language - target language
- MENJS: Ministère de l'Éducation Nationale, de la Jeunesse et des Sports (France)

General introduction

The choice of this theme is explained by the situation created by the current pandemic, which forced teachers in France to suddenly switch all their teaching from face-to-face to distance learning, and to manage this new system for two months, for which neither their institution, nor their school, nor themselves were prepared.

In June 2020, there was the beginning of a resumption of face-to-face teaching. But this resumption was partial, did not concern all the students, and was carried out with such restrictive sanitary norms between teachers and students that some teachers came to prefer, to this sanitary distancing in presence, a "good" distance teaching, which would be able to ensure between them and their students a "real" presence, even virtual.

The new arrangement that was put in place in the last two weeks of the school year was that of alternating between the two modes of face-to-face and distance learning, which will undoubtedly be repeated at the start of the school year in September 2020, more or less punctually and locally, depending on the resurgence of the epidemic. For the coming year 2020-2021, some French universities have already decided to replace lectures in amphitheatres with videoconferences, and all of them are thinking about different forms of "hybrid teaching-learning" (henceforth "HTL"), i.e., half face-to-face, half remote, which they could keep *indefinitely*.

This text, as its title clearly announces, will not address the many concerns and legitimate criticisms that these perspectives of generalization and perpetuation of a partially distance school education raise. In particular, it is likely to open the doors wide to the privatization of public education, to aggravate the relationship, already very strong in France, between school inequalities and social inequalities, to be organized primarily with a view to budgetary savings, and finally - *last but not least* - to weaken the second essential function of the school, as important as that of instruction, that of socialization. In June 2020, two education specialists

signed a "Tribune" in the newspaper *Libération* with the catastrophic title: "The second wave is here, and it concerns the collapse of our public school system"¹.

The problems posed by HTL are not specific to France, as can be seen, for example, in an interview with Luc TROUCHE (2020) on the "Café Pédagogique" website, in which he reports on the results of a field research project, in which he participated, on the response given in Shanghai "to the challenges of teaching math at a distance" in very favorable conditions, with "teaching that relies heavily on the collaboration of the teachers and the monitoring of the students":

A second level of analysis highlights the difficulties encountered: technological difficulties (sometimes a weakness of the network, sometimes a weakness of the microphones); social difficulties (in suburban schools, students are more often alone at home, their parents being required by indispensable tasks, health, transportation, urban maintenance; whereas in the city center, parents more easily telecommute and more easily follow their child's school involvement) ; pedagogical difficulties (how to be sure of the attention of the pupils without seeing them; how to communicate with them without the support of the usual professional gestures); and the slower didactic time (when they return to the schools, the teachers realize that they have to take back some of the notions that they had introduced at a distance) The greatest difficulty seems to be a possible deepening of school inequalities (thus, the presence of the four virtual students who question the knowledge, in the videos, adds an interest for the "good" students, while it adds an obstacle for the students who have "difficulty in following").

In France, where the conditions are, with some exceptions, far from being as favourable, the risks created by partially distance learning are all the more real as the fascination for digital tools keeps some people on the "high plateau of exaggerated expectations"², such as this deputy who, last May, tabled in the French National Assembly a bill³ which reads (I underline) :

The covid19 crisis -has highlighted our telecommuting challenges in both the private and public sectors.

Today, according to the European Union, "Digital distance learning is the use of new multimedia technologies of the Internet to improve the quality of learning, by facilitating

¹ Camille PEUGNY (Professor of Sociology, UVSQ-Laboratoire Printemps) and Philippe COULANGEON (Director of Research at the CNRS, Sociological Observatory of Change, Sciences Po), www.liberation.fr/auteur/20989-philippecoulangeon, 5 June 2020.

² Cf. PUREN 2016d, pp. 4-5.

³ No. 2967 dated May 19, 2020. Online:

www.assemblee-nationale.fr/dyn/15/dossiers/enseignement_numerique_distanciel_ecole.

on the one hand access to resources and services, on the other hand exchanges and collaboration at a distance. [...]

*All these solutions must now be explored in education to **provide students with distance learning as an alternative to the classroom.***

For universities, this could avoid housing and education costs for students whose parents cannot afford long and expensive studies.

This essay develops two main ideas about the problematic⁴ of the face-to-face relationship in cultural language didactics (henceforth "CLD"):

- The first idea is that this issue is not new in itself - the question of the relationship between students' work in class and their work in study or at home has indeed appeared as soon as the teaching of modern languages was institutionalized in French school education, in 1829 -, but that it must be conceived and managed from now on in different terms, in accordance with the current audiences, stakes, environments and pedagogical and didactic orientations, to the point that it requires, in order to be correctly rethought, that the notions and concepts that we still use to think about it be questioned.

- The second idea is that, whatever HTL arrangements are set up in language classes, they will necessarily be very varied from one class to another, and they will even have to be differentiated and variable during the course of the year in the same class, particularly with regard to individual student support. This generates two consequences:

1) These ALE systems should not be built from existing systems, whose elements would simply be divided between face-to-face and distance learning. They must be considered as new *global systems* to be conceived, within the framework of a real *didactic engineering*⁵, starting again from the *fundamental* didactic models (in the strong sense of this qualifier) currently available.

2) Teachers are best able to manage these arrangements for their classes in the most appropriate and flexible manner.

⁴ Note for students: on the notion of "problematic" in research in didactics of languages and cultures (DLC), see chapter 5 devoted to it in the online course "Methodology of research in DLC" (PUREN DLC-MR-5).

⁵ On the notion of didactic engineering applied to the design of didactic units, see PUREN 2011b.

1. Re-examine the notion of "distance learning"

Introduction to Chapter 1: the autonomy of ideas in the "noosphere"

The invention of the notion of "noosphere" (from the Greek *vóoc*, *spirit*, *idea*, on the model of "biosphere", "atmosphere" and "stratosphere") is mainly attributed to the French philosopher and theologian Pierre Teilhard de Chardin (1881-1955). Edgar MORIN took it up and developed it throughout the fourth volume of his major work, *The Method*, entitled *Ideas, their habitat, their life, their morals, their organization* (Paris: Le Seuil, 1991). As we can see from the title, he considers ideas as living organisms. He specifies elsewhere: "[In the noosphere, ideas] live their own life: they are capable of evolving and organizing themselves autonomously according to their own collective logic.

The consequence of this autonomy of ideas is that if we do not master the words we use to name them, it is the words that use us; if we do not think about the notions and concepts we use, it is the notions and concepts that think for us. Some words "make us think" ideas in the strong sense of the verb "to do", different from the one it has when the expression simply means "to evoke". It is in the strong sense that I will use it in the rest of this text, in particular in chapter 1.2. Some words, on the other hand - sometimes the same ones - "make us forget" ideas, as we will see in connection with the expression "distance learning", which obscures the dimensions of learning, use and time.

1.1 Some historical examples

One of the most telling examples of this autonomy of ideas, which I have already had occasion to present in previous publications (in particular PUREN 2003a)⁶, is that of the expression "differentiated pedagogy".

When this expression is used, as is the case in France, it is postulated, without generally realizing it, that it would be up to the pedagogue - the teacher - to differentiate his or her teaching in order to adapt to the so-called *heterogeneity of the pupils*⁷, a term by which a second postulate is made, namely that the differences between pupils would constitute a negative constraint. In other languages and other European countries, the terms are different, and with them the assumptions on which their use is based:

⁶ The title of this article was "Against 'differentiated instruction'! The second level quotation marks ("...") were important, suggesting that my criticism was aimed at the name, not the idea of taking into account differences between students.

⁷ "Differentiated teaching" is generally considered in France as a way of "managing heterogeneity", an expression also commonly used in parallel.

- In Spanish, we speak of *la atención a la diversidad*: the agent is also the teacher (he or she is the one who "pays attention", who takes into account), but the object, namely the differences between students, is thought of positively, as a richness; it is a "diversity", not a "heterogeneity".

- In English and German, we do not speak of "differentiated teaching", but of *Open Learning* and *offenes lernen*: the assumption is that it is impossible for a teacher to know the specific needs of each of his or her pupils and in any case to satisfy them in the framework of collective teaching; the teacher can only allow each pupil, who alone knows his or her own needs at all times, to take them into account himself or herself in work sequences that are "open" to his or her own choices in terms of objectives, content, methods, time and/or place, i.e. presenting a certain degree of autonomy. In other words, in the corresponding countries, we do not think of "differentiated *teaching*" as in France, but "differentiated *learning*".

So that the French trainer who only speaks of "differentiated pedagogy" thinks "teacher-centered", even though he wants to promote "learner-centered"; he thinks of the differences between students as obstacles to teaching, even though he wants to promote them as a wealth to be exploited.

In reality, in the perspective of a complex didactics⁸, and in the absence of common use - which would be logical in CSD - of the all-encompassing appellation "differentiated teaching-learning", the two appellations of "differentiated pedagogy" and "autonomous learning" must be thought of as designating the two extreme limits of a continuum between which the teacher should ideally position himself at each moment for each student, or between which each student should be able to position himself for himself, at the most adequate place according to all the parameters of the teaching and/or learning situation (cf. PUREN & BERTOCCHINI 2001k). Using only the expression "differentiated pedagogy" - or that of "autonomous learning", for that matter - produces in the mind of the enunciator and in that of the recipients, whether they like it or not, a perverse effect of simplification of complexity.

I have had the opportunity in other publications to give other examples of terms or expressions that also "think badly" in the heads of speakers: those of "*learner-centeredness*" (PUREN 1995a)⁹, of "student [too] *academic*" (2006e, pp. 5-6) and of "*teacher/traditional teaching*" (PUREN 2019a, p. 9). I will only include the use of the term "*artificial*" here as another example, because it is directly related to the issue of instructional engineering, which I announced earlier as one of the issues I would address in this essay.

⁸ Cf. my manifesto article PUREN 2003b. on the very notion of "complexity", which will recur regularly in this essay, cf. PUREN 046.

⁹ The whole article is devoted to the criticism of this notion, at a time when it was still one of the key notions of a dominant communicative approach.

Herbert A. Simon is known in particular for being one of the great theorists of engineering sciences, with a work published in 1969 entitled *Sciences des systèmes, sciences de l'artificiel* (trans. fr. Paris: Dunod, 1991). For him, what fundamentally defines the work of an engineer is the design of artifacts, artificial devices such as a bridge, a machine tool or a computer network. A teacher is also an engineer insofar as one of his or her main functions is to design learning devices, which, precisely because they are artificial, will allow guided, accompanied, assisted and progressive learning, which is not the case in a natural environment. It would never occur to anyone to criticize the construction of a bridge on the grounds that the most "authentic" way to cross a river would be to swim; or a person walking with a pair of crutches because his or her gait would not be "natural. It should be equally unthinkable in CSD to criticize grammar or lexicon exercises simply because they are "artificial. Grammar in the language classroom has often been compared to the crutches students need to learn to speak, which they will abandon as soon as they no longer need them.

To design an ALE device in CSD is, to use the three examples given above, to put oneself in the position of an engineer who is building a model of a bridge (in this case the one that the student will have to cross to go from the language-culture of departure to the language-culture of arrival), the diagram of a machine tool (the one that will make the different mechanisms of the two teaching and learning processes work together), or the model of a human and non-human network composed of teacher-student and student-student relationships, of tools such as didactic materials and other technologies, of language and cultural contents as well as of didactic activities

1.2. The expression and the notion of "distance education"

To develop the theme of this sub-chapter, I will list precisely a certain number of questions that we must ask ourselves before constructing any ALE device, starting from the observation that the use of the expression "distance education" tends, if we do not problematize it, to *make us think* certain ideas, and to *make us forget* others"¹⁰.

1.2.1. Hybrid teaching-learning" (HTL)

The term "distance education" *obscures* the fact that it is also, and even primarily, about learning. Why is it that we do not speak, as has been common practice in CSD for several decades, of "distance *teaching-learning*"? The expression "distance learning", which in France dates back to the time of the mailings of courses by the CNED ("Centre National d'Enseignement à Distance") at the beginning of the Second World War, *makes us think*, as does that of

¹⁰ Hence the use of the term "distance education" in quotation marks in the title of this essay.

"differentiated pedagogy", that there are constraints (distance, heterogeneity) and that the solution to the problem lies in the centering of the teacher (of the teaching, of pedagogy).

On the official pages of the Ministry of National Education, Youth and Sports (MENJS 2020) describing the "**pedagogical** continuity plan" for the start of the September 2020 school year, "Fiche 1.5 d'outils et ressources" contains a four-page appendix presenting "hybrid **teaching**" (my emphasis). It includes the following sentence:

The health crisis linked to COVID 19 and then the progressive deconfinement have imposed teaching methods that question the rhythms, the places, real or virtual, and the times of learning. (p. 1)

The wording is very surprising, because one would have expected exactly the opposite: the health crisis has imposed different rhythms, places and times of learning that question the modes of teaching. The wording of this sheet is very representative of the focus on teaching that the words used impose, without us realizing it. On the same page of this sheet, we find this other passage:

This [health] crisis is also an opportunity to question the classroom as a physical space and to reinforce the teacher's role as conductor. It questions what it means to learn and teach in the 21st century. Desynchronization is at the heart of this transformation.

The comparison of the teacher with a "conductor", whose role would be "reinforced", is also very teacher-centred (not to mention that it will inevitably evoke for some a "baton-wielding" classroom management...). One may also wonder about the meaning of the last sentence: a conductor managing desynchronization would be a paradoxical idea, to say the least: desynchronized scores are a sure sign of cacophony... The idea is undoubtedly that desynchronization between teaching and learning¹¹ poses a problem in comparison with synchronous face-to-face teaching-learning sequences, where the teacher would be in a position to control learning closely in real time. If this interpretation is correct, the mental model of reference, conscious or unconscious, of the writer of this text, is clearly directive frontal teaching.

The preferable expression to that of "distance teaching" is undoubtedly, when the teaching is partly face-to-face, that of "hybrid teaching-learning" (henceforth "HTL"), the use of this qualifier "hybrid" neutralizing a negative representation of the distance in relation to proximity which would necessarily be preferable because it would be the proximity of the teacher, and a positive

¹¹ Learning before teaching, as in the flipped classroom in which the student prepares the class in advance, or, conversely, learning after teaching, as when the student takes up or extends at home the work initiated in class.

representation of the presence of the teacher which would necessarily be preferable to his absence.

1.2.2. The different modes of teaching-learning relationship

The expression "distance learning", by obscuring the "learning" dimension, also *makes us forget* that all face-to-face teaching integrates different modes of relationship with learning that will...

- group instruction, when the teacher, for example, explains a point of grammar or culture to the whole class,
- to individual learning of a certain duration, which can be autonomous, when the teacher asks the students in the class to work alone for a while, but which can also be very directed and very punctual, such as each time each student has to look for the answer to an oral question asked by the teacher to the whole class,

... through moments of more or less independent learning in small groups.

These different modes of teaching-learning relationship do not have to be divided between face-to-face and distance learning, but have to be rethought in each device and in the relationship between the two devices. What some sociologists and pedagogues (e.g. BOURDIEU & PASSERON 1970, VINCENT *et al.* 1994) call a "teaching system", in fact functions as a global system composed of a teaching sub-system and a learning sub-system: it is therefore a *didactic* system in the sense that this qualifier has nowadays in the didactics of all disciplines, which integrates teaching, learning, and the teaching-learning relationship. The introduction of an element of distance teaching-learning provokes an overall reorganization of this global system: the naturally greater importance of individual work at a distance thus leads to a rethinking of its place and function in the classroom, but also, for example, to imagine, as in the "flipped classroom", classroom sequences during which the teaching-learning relationship can be different because the student will have previously achieved certain content objectives.

1.2.3. The question of evaluation

The term "distance learning" *overlooks* not only learning, but also the third fundamental term of didactic reflection, "assessment" (cf. the subtitle of the CEFR: *Learning - Teaching - Assessing*). I have the impression, based on what I have read so far, that the reflection is not yet really engaged in evaluation in hybrid teaching, which is hardly surprising, given the "decoupling" that the CEFR has, in spite of its subtitle, installed for years, in educational didactics of languages-cultures, between teaching-learning on the one hand, and evaluation on the other¹². Now, for example, the greater degree of autonomy implied by distance learning leads to a rethinking of

¹² This is in spite of the subtitle of the paper, which is a misleading advertisement: cf. in MAURER & PUREN 2019, the detailed critical analysis developed throughout chapter 1.3.4 entitled "The question of the relationship between teaching-learning and assessment [in the CEFR]", pp. 48-75. Throughout the fourth part of the book, I present equally detailed proposals for reintegrating assessment into the teaching-learning problematic ("Integrated assessment", pp. 197-236).

the relationship between hetero-evaluation (evaluation by the teacher) and self-assessment, by giving the latter a more important place and a real institutional status, with specific tools, some of which already exist, such as the learning diary or the portfolio.

1.2.4. The question of use

The expression "distance learning" also *makes us forget* the fourth fundamental term of didactic reflection, "use". In fact, there has always been a strong link, in language teaching methodologies, between learning and use, the law that has constantly been imposed being that of the maximum homology between the privileged school activity and the social action for which one wanted to prepare the students: in the communicative approach, for example, it was considered that the most effective way of teaching students to communicate in society in a situation of everyday life was to have them communicate with each other in class in a simulated way in comparable situations; and in the actional perspective, the current model of the social action aimed at, namely the project, was naturally imposed as the reference activity. Now, the social "counterpart" of distance learning is distance work, or "telework": both have been very much in demand in companies, administrations and other institutions, during the period of confinement, and both will undoubtedly develop in the future. It is therefore *a priori* interesting to ask ourselves what the connection between these two notions in communication and action situations in the classroom might *look like* in terms of approaches and activities.

1.2.5. The question of time

The expression "distance learning" emphasizes the sole question of place, which *makes us forget* that of time. However, school teaching, in particular language teaching, is generally carried out under the permanent pressure of a feeling of lack of time, with a mode of class conduct marked by rapid successions of very dense activities which do not suit a large part of the students. On this point, how can we make the best use of distance learning, which is open to longer periods of time and allows for greater flexibility in the management of learning rhythms, which we know are different from one student to another, and for all of them vary in duration?

1.2.6. Presence and absence, distance and proximity,

The term "distance learning" *overlooks* the fact that there can be an "absence from learning" in the presence of the teacher: a student in a class can be described as completely "absent" at one point. Conversely, there can be a strong "presence to learning" in distance learning: we can be cut off in the middle of a sentence during a videoconference meeting by a speaker who reacts strongly to our words. Indeed, distance is also a psychological notion. In a frontal, directive classroom teaching, the whole pedagogical device aims to keep each of the students at the same distance from the teacher, which leads the latter to "keep his distance" from each student both physically and psychologically. Conversely, the personalized proximity of the teacher is extreme when, during a videoconference, he or she personally addresses a student who has his or her face right in front of him or her on the screen. The couple "(in)presence/(in)distance" is

notionally unsound and conceptually reductive: it *makes us forget* that presence is to be thought of in conjunction with absence, distance with proximity.

1.2.7. Education at a distance

The expression "distance teaching" *makes us think* that the distance is only from the teacher, whereas what is at a distance is also the class group and the entire school, with all its actors, which function as a *socialization* system. What is "at a distance" is not only the teaching of this or that discipline, but also ethical and civic education, which is thus confronted with a situation where individualism and socio-cultural distinctions and difficulties are more prevalent.

1.2.8. Distance and "new technologies"

Finally, the expression "distance education" often *makes one think* exclusively of the digital environments and tools that this education strongly mobilizes. The bill I quoted in the introduction was entitled "*Distance digital education* in high schools, middle schools and elementary schools" (emphasis added): in the minds of the public and of political leaders, distance education is in fact mainly, if not exclusively, *e-learning*. Jean-François CERISIER, Professor of Information and Communication Sciences at the University of Poitiers, thus notes in an article posted online on March 17, 2020, entitled "Covid-19: heurs et malheurs de la continuité pédagogique à la française" :

Formally present in the academies' plans, pedagogical continuity consists essentially of an inventory of digital resources that can be mobilized, and very little - if anything - is said about how to implement them according to the crises, and how to prepare teachers for them.

This reductive assimilation produces two cognitive biases linked to the prestige of digital technologies, and even to the fascination that they hold for some:

- It *overlooks* the fact that these technologies do not in themselves change the nature of the educational relationship. A handwritten assignment photographed with a smartphone and attached to an email in a photo format, printed on paper by the teacher and then corrected, and sent back by the teacher in the same format by the same means, differs from a corrected paper assignment only by a much lower readability¹³. A videotaped course followed at home is no different from a lecture if the student is not sufficiently motivated and attentive to stop the recording in order to take notes, to reflect, to go back and possibly listen again; and he could already do the equivalent, in a much more convenient way, on a mimeo course. If we want to look for a modification of the

¹³ An authentic anecdote, personally experienced with the student, son of friends abroad, that we hosted at our home in the country during the two months of confinement at the beginning of the year 2020...

pedagogical relationship, we will find that it is the videoscoped course or the so-called "video capsule" of the "flipped classroom" which is necessarily even more transmissive and directive in nature than a face-to-face lecture, since the teacher cannot even see the students' reactions in real time in order to take them into account.

The notions of "synchronous" and "asynchronous" are very connotative of "digital technologies", and I will replace them in the rest of this essay with "live" and "deferred". Another advantage of using the latter terms is that they allow for a broader reflection on all modes of time management, including both those who use and those who do not use these technologies. For example, every time a student makes an oral error in class, teachers have to answer the question of whether or not they correct it, and if so, whether they correct it live or not.

- It *overlooks* the fact that numerous national and international surveys show that the use of these technologies does not necessarily or strongly improve academic performance. For example, in a 2018 conference (PUREN 2018c, slides 14 and 15-16), I cited the author of a November 2012 French Institute of Education brief noting that most of the available meta-research on the issue concluded that "technology has a moderate (or even non-existent, and sometimes even negative) impact on student outcomes" ; as well as the findings of a September 2015 PISA survey where OECD experts conclude that "students who use computers very frequently at school perform worse in reading comprehension, even after controlling for their background. "

The hopes raised by the "flipped classroom", a hybrid device which generally organizes for students the first contact at a distance with content in the form of video capsules available online, are certainly due in large part to the fascination exerted by the combination of digital technologies and the Internet. We will come back later, in chapter 2.3, to this "flipped classroom" device, the systemic implications and consequences of which on the teaching-learning of foreign languages in schools have not been sufficiently thought through, and which thus provides a good example of what not to do in ALE, at least in the educational didactics of language-cultures.

Conclusion of Chapter 1: the seven notional pairs of the hybrid teaching-learning (HTL) problematic

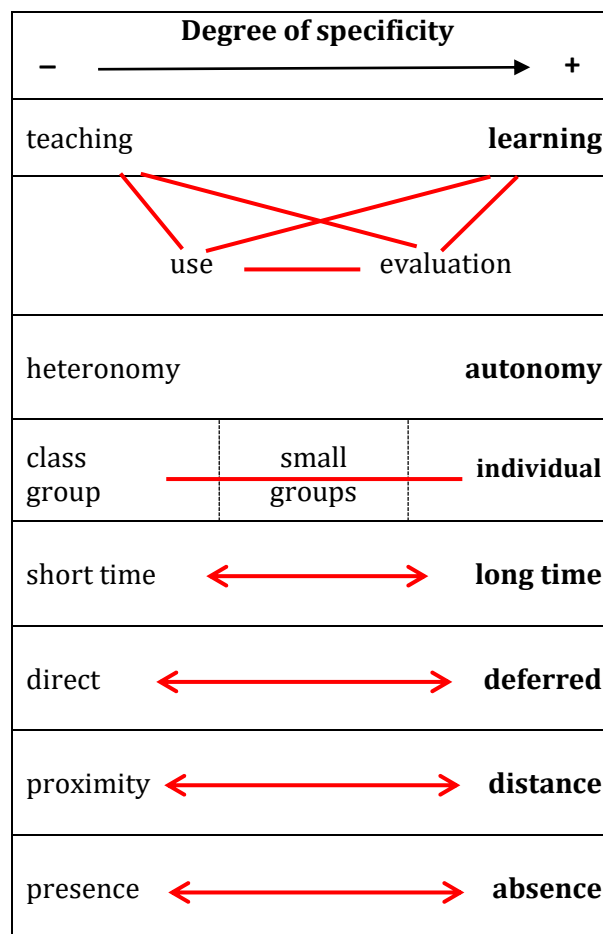
In the file on "pedagogical continuity" mentioned above (MENJS 2020), there is a link to a "video clip"¹⁴ entitled "Conceiving a hybrid education" and produced by an inspector to present what she calls "the *fundamentals* of hybrid education". For her, these consist of the possible

¹⁴ Collège IEN second degré, " Concevoir un dispositif hybride ", Académie de Limoges, <https://vimeo.com/416686536> (last consulted 19 July 2020). This short slide show with sound is called a "video capsule" in the document "L'enseignement hybride" in this file (MENJS 2020, p. 1).

intersections between the two elements of the "face-to-face-distance" pair and the two others of the "live-deferred" pair, which would thus determine "four pedagogical modalities".

However, there is no such thing as "hybrid teaching fundamentals": there are fundamental CSD issues - whose object is not only teaching, but also learning, evaluation and use - which will each arise in different ways, and which are all interconnected, in all teaching-learning devices, including that of HTL. And in this HTL, the fundamental didactic problems are certainly not limited to the two pairs proposed in this video clip, namely (1) face-to-face and (2) live-deferred. We have discussed five other pairs in the course of this chapter. The whole picture can be summarized as follows:

Fig. 1: Analysis by notional pairs of the hybridization problematic in DLC



Among the seven pairs, we see that there is a "four-way pair" (teaching-learning-assessment-use), and a "three-way pair" (classroom group-small group-individual). The lines indicate a relationship. The double-arrow lines indicate a particular relationship along the continuum; for

example: teaching may be more or less directive; the time and duration allowed for an individual learning activity at home may be more or less¹⁵.

There is no notional couple that is specific to AHE. What makes AHE specific is the need to design various devices, but all of them in such a way that they allow one to position oneself as soon as one wishes, within the continuum of each of the couples, as close as possible to the right element.

One might object to my criticism of the video "Designing a hybrid education" that the function of the vignettes is only to introduce a theme, a question or a problem in a "condensed" way. But the verb of its title, "*Designing* hybrid teaching", gave hope to the presentation of a system of didactic engineering; such a system needs an open and dynamic model of production of hybrid devices¹⁶ and not a reductive typology which is moreover centered on teaching. This typology of the video capsule calls for the following remarks:

- The presence is that of the teacher, the distance is that of the teacher (or the educational institution).
- The proposed definition of the live modality is that "students and teacher are together at the same time and place", a definition that links this modality to the presence of the teacher. However, live teaching can also be done remotely (e.g., in a live video lecture), and students can work in independent live groups (face-to-face or remote).
- According to the definition of the off-line modality proposed in this capsule, "the students and the teacher are not together at the same time or in the same place", a definition that links this modality to the teacher's absence. However, let us take the example of group work organized in a class by the teacher, with periodic rereading by the pupils of the written instructions distributed in photocopies by the teacher or put on the board at the beginning of the session: this face-to-face work is indeed deferred in relation to these instructions¹⁷. It is the same - another example - in the case of the correction of written homework when the copies are distributed, reread and reviewed in class: the work of rereading by the students the observations written by the teacher on their copies is done in class after the teacher's prior written correction work.
- In the case of a teacher using a textbook in class with his or her pupils, there is even a combination of off-line distance teaching –that provided by the textbook designers

¹⁵ The teaching-learning relationship is actually much more complex, with seven different possible modes that I will apply further in Chapter 4 to the face-to-face relationship. To define the degree of specificity of the hybridization problem as here, however, the continuum mode is sufficient.

¹⁶ The engineer is by definition a *designer* of devices: see chapter 2.1 below.

¹⁷ This creates an unprecedented difficulty for teachers who are embarking on group work in the classroom for the first time, because they have previously only managed their instructions directly: I discuss this in the introduction to Chapter 2, pp. 23-24.

through the materials and activities they have included– and live face-to-face teaching – that provided by the teacher through the choices he or she makes and the interventions he or she makes with the pupils during the joint use of the textbook.

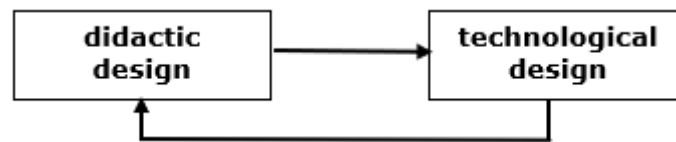
All of these examples show that live and recorded modalities already existed before the arrival of the "new" technologies, and that they were implemented both in the absence and presence of the teacher. What seems to me to be highlighted by the analysis of the contents of this training capsule "Designing hybrid teaching", like all the considerations in chapter 1 of this document, is the weight of a more or less conscious didactic conception which the expression "distance teaching" favors maintaining, characterized by the centering on teaching and on technology, or, said even more synthetically, on *teaching mediated by technology*.

In the list of notional pairs that constitute the fundamental issues of HTL, I have not included the pair that could have been called "old technologies/new technologies", simply because I consider it irrelevant: all technologies must in fact remain available for the design of teaching-learning devices, and be chosen according to various criteria among which is certainly not that of novelty¹⁸. The simplicity of use and the generally superior reliability of the "old" technologies, such as the printed textbook and the chalk or felt-tip board, give them a decisive advantage in many cases. And we have seen above (p. 17) that the "new" technologies do not in themselves guarantee better learning.

Digital environments and the Internet are certainly indispensable technologies in the case of HTL because they make it possible to design new material devices adapted to the constraints of place and time of the distance. This is what explains the exclusivity given to the technical design in the video capsule, the one that relies on the crossings between the face-to-face-distance and live-deferred pairs. But this does not justify it: the *didactic* conception must also be present from the start, with the mobilization of all the notional pairs that are specific to it.

It is frequent among didacticians (and I have been part of it), to counter the discourse of the "technolaters", to take the opposite view by affirming the primacy of the didactic conception. In the case of HTL, the importance of the technological possibilities or impossibilities is such, however, that it is necessary to think about the didactic conception and the technological conception in a complex way, i.e. recursively (one speaks in this case of "dialogic relation"):

¹⁸ It's not the only one, of course, but it's one of the differences that must be maintained between an instructional design space and an advertising space.



It is indeed useless to conceive a teaching-learning device that is not technically feasible, just as much as to conceive a technological device that does not bring anything to teaching-learning, or even that makes it regress. But beyond the necessary compatibilities, it is the *synergies* that must be sought between the two types of design: HTL can rely for this purpose on the numerous "convergences" between the "new technologies" and the new didactic orientations, whether it be the action-oriented perspective (cf. PUREN 2009e, chapters 5 & 6, pp. 11-16), or the various conceivable combinations between it and the other methodological matrices available (cf. PUREN 073).

2. Designing hybrid teaching-learning (HTL) and reorganizing the teaching-learning "system"

Introduction to Chapter 2: the notion of "system"

It is now more than 25 years since I interpreted the rise of eclecticism in CSD, remarkable at the time in contrast to the single methodology dominant at the time among didacticians (the communicative approach), as a pragmatic response of teachers and textbook designers to the complexity of teaching-learning issues (1994e), and that I posed the need for researchers and trainers to respond in turn by constructing a "complex didactics of languages and cultures" (1998b for the passage from the problematic of eclecticism to that of complexity; 2000b and 2003b for the corresponding manifestos). The notion of complexity, in CSD as elsewhere, requires the use of three other notions that are inseparably linked to it:

- *the artificiality*, which we have already approached above: Herbert A. SIMON was able to write, in his quoted work of 1969, that "the questions of the artificiality and the complexity are inextricably intertwined" (ed. 1996, p. XIII); the classic example of artificiality, in the scientific research, is the device of the laboratory, where the complex reality is simplified so as to isolate, among the multitude of the interrelated elements in play, the only ones that one wants to study separately, and so as to manipulate them according to the questions and hypotheses of research;
- *modeling*: complexity can only be understood and managed by means of *models*, indispensable interfaces - and artifacts - between theories and practices (cf. PUREN 014, 015, 2019i-es); I have personally produced a large number of them, for all the didactic problems I have had to deal with (see e.g. PUREN DLC-DR-3) ;
- *the system*, a specific mode of description of the functioning of complexity, so intimately linked to models that Jean-Louis LE MOIGNE published in 1994 a book entitled *La théorie*

du système général. Theory of Modeling; I proposed in 2015 an essay on systemic modeling of CSD research (2015a, see the overall scheme on p. 48), and more recently, going back to the contents of this essay, a description of the "system of models in language didactics" (2020a) valid for research as well as for research training, teacher training, and teachers' practices themselves.

One of the characteristics of the functioning of a "system" is that any new "entry" modifying one of the elements of the system or introducing a new element into it leads to its global reorganization, because all the elements are interdependent; and as these links are recursive – the effect of the first element on a second produces a return effect on the first, which in turn returns to the second, and these "re-entries" into the system can continue indefinitely¹⁹–, any new element can also produce effects on the "outputs" of the whole system. The well-known example in CSD is that of the interlanguage, which can be defined as the system constituted by the set of conscious and unconscious representations of a learner on the functioning of the L2 at a given moment of his learning. The "entry" of a new type of irregular verb into the learner's interlanguage (his "*intake*"), will disorganize his "verbal conjugations" subsystem, which will generate "output" (*i.e.*, in this case, in the learner's language productions) of errors on regular verbs that they did not make before. Another example that all non-native language teachers have certainly experienced during their training: from a certain level of mastery of a foreign language, its system can partially disorganize the "mother tongue" system to the point of producing, "on the way out", errors never ordinarily committed by a native speaker.

The same is true of teaching practices: the main reason for teachers' "resistance" to the innovations that are regularly proposed to them is that they cannot simply be adopted in isolation: they will inevitably provoke a disorganization-reorganization of the whole of their "teaching system", costly in time and energy, until the whole system stabilizes again²⁰. I was able to note a concrete example of this during a "European Cooperation Program" in languages (PCE-LINGUA) on differentiated pedagogy. The "entry" of group work into the system of practices of teachers who had never implemented this technique before, obliged them to strongly modify their micro-system of instructions in order to restore it to a new efficient functioning. In frontal group teaching, teachers can be satisfied with a succession of short, partial instructions presented orally, because they are able to observe the students' activities as they go along and can thus manage them in real time. But the instructions for group work are varied, longer and more complex because they are intended to guide more or less long periods of independent

¹⁹ This is what differentiates "re-entries" from *feedbacks*, which are limited and punctual, so that they do not feed this overall dynamic that is often called "synergy" (cf. the very end of the conclusion of Chapter 1, p. 21).

²⁰ This is what differentiates *teaching experience* from experiments, which are also, like *feedback*, limited and ad hoc, and what makes the *change* of a completely different nature and mechanism than *innovations* (cf. Puren 2016d, 2018c).

activity that differ from one group to another. The teachers must then, for example, make sure that they are not only well understood, but also well memorized, which leads them, after various failures and trial and error, for example, to have them rephrased in L1, to have them written down and to check that they are correctly noted, to have them written down on the blackboard, or to distribute them in photocopies to the different groups.

2.1. The "school form", a subsystem of the school "system"

In the early 1990s, a group of researchers identified what they called the "school form," which they described as:

"In a closed space, entirely ordered to the accomplishment by each one of his duties, in a time so carefully regulated that it can leave no room for an unforeseen movement, each one submits his activity to the principles or rules which govern it.

*This is, in essence, the school form*²¹. (VINCENT *et al.* 1994, p. 18)²²

According to them, this school *form* is a "*mode of socialization*" and a "*historical configuration*" (p. 11), notions that correspond in this context to that of "system": this "school form" functions as a subsystem of what they call elsewhere in the same article an "educational system"²³, or a subsystem of this more general system that is called in common parlance, very appropriately, the "school system".

Originally, one of the main functions of this form of schooling was to protect children from their social environment, be it that of the people or that of the bourgeoisie: historically, "distance education" is not education at home; it is, on the contrary, education in a school that stands "at a distance" from the family and from outside society.

This original idea is still very present today among French educationalists, and understandably so, since France is the OECD country where the correlation between the family environment and school results is the strongest; it is even tending to become stronger, as shown by the latest PISA surveys of this international organization. Hence the fear, noted above in the general introduction (p. 5), that in HTL the proportion of learning at home will worsen this factor of inequality.

In the 1994 article, Guy VINCENT defends himself against the criticism that the school had recently "opened up" to outside society, arguing that it is, conversely, outside society that has opened up to the school:

- Educators were only able to participate in the school system because they had the same goal:

²¹ Note that in this "school form", the spatial dimension is linked to the temporal dimension.

²² For a discussion of this concept, see VINCENT, COURTEBRAS & REUTER 2012.

²³ From the very first page of their article (note 1, p. 11), the authors attribute the "theory of the school form" to the very famous work by Pierre BOURDIEU and Jean-Claude PASSERON, *La Reproduction: éléments pour une théorie du système d'enseignement*, Paris: Éditions de Minuit, 1970.

The development of "extracurricular" activities in working-class neighborhoods tends to ensure the systematic occupation of children and young people, with the objective of taking children off the street and removing them from the influence of families whose actions are often considered harmful. (1994, p. 42)

- The same is true of parents:

It is said that the school is also opening up to parents. Here again, how can we fail to see that the parents most present in the schools, expressing themselves on pedagogical questions, are first and foremost parents with significant educational capital and whose socializing practices are not in contradiction, on the contrary, with the school mode of socialization? (p. 46)²⁴

- And when it is, conversely, the teachers who leave the school, it is a matter of feeding the same educational system in another way:

If we consider the activities that teachers carry out with their students outside of school on one-off outings or snow classes, green classes, etc., it should be noted that the work carried out consists of reusing what is observed, what is experienced by the students in school terms: writing, transformation of experiences into formalized, objectified knowledge, etc. (Idem, p. 45). (Idem, p. 45)

It is always the same search for maximum homology between the modes of school intervention of teachers and parents (and not, as one might hope at least in part, the search for a certain complementarity²⁵) that we find in the observation made by the current president of the Scientific Council of the French National Education, Stanislas Dehaene, quoted by the author of the official document on "Hybrid Education":

"The advantage of the lockdown was that it broke down the barrier between families and the school. We created a connection and families saw what teaching was, what role they

²⁴ Research should confirm this, but the overwhelming impression from television reports on the subject of parents helping their children at home during lockdown is of parents seeking to replicate the school form in "homeschooling." How could they do otherwise in the absence of training, or even just information, on specific objectives, contents and learning methods?

²⁵ Divina FRAU-MEIGS (2020), professor of information and communication sciences at the Sorbonne Nouvelle, considers, for example, that parents must "keep themselves in the logic of emotional support and care rather than in the program." One of the most shared ideas to emerge from the lessons of distance learning during the two months of confinement - but this is to be expected - is indeed the even greater importance taken on by motivation to learn in a key component, that of maintaining commitment over time.

could play. Our idea would be for teachers and families to share the same tools." (MENJS. 2020, p. 1)

For a very long time, since it already concerned the teaching of Latin and Greek as dead languages, there has been a form of hybridization of school teaching in France, with a distribution of work in class and work in study or at home which gave priority to the latter. The linguist Michel Bréal, then Professor at the Collège de France, explained it at length in 1872:

See this teacher in his pulpit. While going through and signing the correspondence books, he has the lessons recited. Then a student reads the next day's lessons. The teacher then distributes the corrected papers from the previous days. The homework is corrected: this is the main exercise, which takes the longest time. The last half hour is spent translating the Latin or Greek page that the students had to prepare in advance.

The class, as we can see, controls the work of the study and provides new materials for the study to use. Certainly the teacher demands a certain amount of attention and activity in class: but no one will deny that the main effort is made in the study²⁶. [...] From the various assignments he can extract the best parts to give an answer key; he can even bring his own assignment, which will serve as a model and an ideal. But all this is work done outside the school. The driving force is outside the classroom, which follows in the wake of the study. (p. 187-188)²⁷

And in the rest of this chapter, entitled "Of the Classroom and the Study", he lists the negative effects of this device by comparing it to what it would give if it were applied to the sports discipline:

[It would be] a gymnastics teacher who, sitting in his chair, would describe in words to his students a trick of strength or skill, and would invite them to come and perform it before him in the next lesson. He would then say, "That's good" or "That's not good", and he would show them how to do it. Such teaching would never be worth the clarity, the emulation, the speed of progress, the exercises undertaken in common, the training of the example and the helping hand given immediately by the teacher to the hesitant or lazy pupil. (pp. 189-190).

²⁶ At that time, the students' personal work was done within the school, "in study", that is to say in rooms reserved for this activity. At the lycée, the majority of students were boarders. [note by Ch. Puren]

²⁷ Quoted by BRUTER Annie, "Le cours magistral dans l'enseignement secondaire. Nature, histoire, représentations (1802-1902)", *Histoire & Politique* 2013/3 (n° 21), pp. 22-38, www.cairn.info/revue-histoire-politique-2013-3-page-22.htm#.

This type of criticism, shared at the time by all progressive pedagogues, found a particularly strong echo among the promoters of a modern teaching of modern languages, favourable to the new "direct method" based on the following principle, laid down in an official instruction of September 13, 1890: "A language is learned by itself and for itself, and it is in the language, taken in itself, that the rules of the method must be sought." During a pedagogical conference given in Nancy in 1902, the year the first major direct official instruction was published, Adrien GODART described the traditional methodology, which he wanted to convince his listeners to abandon, in a manner comparable to that of Michel BRÉAL:

[According to the ancient tradition], the reading was exactly modelled on the Greco-Latin explanation. A page of Hermann and Dorothy was interpreted as Homer, Shakespeare as Sophocles, and Schiller's historical works as Livy. The students were told, "You will prepare for the next time twenty verses or thirty lines in a row," and at the next class the indicated task was dispatched, first literally, and then in what was called "good French." (1903, p. 2)

The application of the "direct method" to reading, the theme of this conference by A. GODART, requires, according to him, reversing the relationship between in-class work and out-of-class work, both in terms of their reciprocal importance and their chronological order:

Direct reading eliminates [...] home preparation. How could [the student] prepare, since it is orally, by oral transmission, that he must acquire the meaning of new words and discover the meaning of sentences? To maintain preparation according to the old formula would be to condemn him to the use of the French dictionary as a means of acquisition. Preparation, as understood by the grammar method²⁸, thus disappears. It is no longer the student who prepares, but the teacher. It is quite probable that the pupils, already relieved during the first period²⁹ of an excess of homework, will not be long in judging charming a method which, in the second period, gives them a new relief, by entrusting to the teacher the task of preparations. [...]

The student no longer prepares, but is required to reread the explained text at school or at home and fix it in his memory. We thus end up with a displacement of the preparation which, instead of preceding, as in the past, the reading in class, remakes it and fixes it. The preparation, according to the direct method, becomes a lesson: it consists for the

²⁸ A. Godart thus refers to the traditional methodology of teaching dead languages in schools, known as "grammar-translation". But, as we can see, it is here its "translation" element (more precisely that from language 2 to language 1) that he criticizes. [Note by Ch. PUREN]

²⁹ The "first period" then corresponds to the first two years of learning (classes of 6^e and 5^e), the second to the next two (classes of 4^e and 3^e), and the third, and last, to the classes of 2d and 1^e [Note by Ch. PUREN]

pupil in reviewing the given text in such a way that, without learning it by heart, he assimilates both the words and the idioms. (idem, p. 7)

Half a century later, this system, which assigns most of the teaching-learning work to the classroom, and the simple revision of this work to the home, is still in place. In their 1972 collective work, Maurice ANTIER, Denis GIRARD and Gérard HARDIN analyze the 1950 instruction, the last official text governing active methodology³⁰, heir to the direct methodology of the 1900s, which was imposed by the French language inspectorate from the 1920s to the 1960s:

[This instruction] forbids the preparation by the pupil alone of the texts which will be explained in class, thus eliminating the risk of misinterpretations and errors of pronunciation. [...] Lessons and homework are brief; here again the principle is that what is done outside the presence of the teacher risks leading to bad habits (p. 58).

Neither the audiovisual methodology of the 1960s-1970s nor the communicative approach of the 1970s-1990s, both of which emphasized oral expression in the classroom, have called into question this important element of the school-based teaching-learning system of modern languages, and it is reasonable to assume that the principles that guided the writer of this 1950 instruction are still shared today by most teachers of foreign languages working in primary and secondary schools.

In any case, we can see that the central question of HTL, that is, the articulation between face-to-face and distance teaching-learning, has been posed from the beginning of school language teaching to the present day, because, with the exception of teaching children, the teacher has always asked students to do some work outside the classroom, in study or at home. The authors of "Hybrid Teaching" consider "desynchronization to be at the heart of this [current] transformation of teaching in the 21st^e century" (MENJS 2020 p. 1). What is at the heart of this transformation, then, is not desynchronization itself, but its reconfiguration, which must be done, as I wrote in the introduction to this text, "in accordance with current audiences, issues, environments, and pedagogical and didactic orientations."

³⁰ Cf. PUREN 1988a, *Histoire des méthodologies de l'enseignement des langues*, 4^{ème} part " La méthodologie active ", pp. 140-188.

2.2. An example of an insufficiently thought-out implementation of hybrid teaching-learning (HLT): the "flipped classroom" in language

One could not help but be surprised to see published over the last ten years numerous experiments in "flipped classrooms" in languages without any reference to this history, without any serious evaluation being carried out to validate or invalidate the hypothesis, however very likely in this teaching, of the appearance of negative effects, without any proposals concerning the necessary reorganization of the language teaching-learning system according to its specific constraints and requirements.

In language teaching, the "flipped classroom", whose fundamental principle is that students learn new content at home, before class, reverses the inversion of the 1900s, returning on this point to the pre-direct device of traditional methodology: the "flipped classroom" in classroom language is a device that can be considered objectively as being, *strictly speaking*, "reactionary". The reaction can be salutary when it comes to correcting excesses or drifts. This was the case at the end of the 1900s, when teachers stood up against the dogmatism of certain official promoters of direct methodology in the name of a reasonable eclecticism, half direct, half traditional. One of its most active representatives, Auguste PINLOCHE, thus published an article in 1909 whose title, "Reaction and Progress", becomes clear on reading it: the two notions are not opposed to each other, but are thought of as interdependent: The reaction is necessary, because it is the way to progress.

This title, with this meaning, can quite well be assumed nowadays, in my opinion, with regard to higher education, if the reaction there consists in reacting against the lecture in the amphitheatre by setting up for the students a preliminary and remote transmission of at least a part of the contents. This "entry" into the university teaching-learning system then obliges teachers to rethink their entire pedagogy on the spot, at the university, insofar as it is still centered on this lecture-based transmission. This is why my first publication on the "flipped classroom" - a blog post dated December 23, 2014 that summarized an article by Sophie BLITMAN published a few days earlier on the EDUCPROS.fr website (BLITMAN 2014) - presented six arguments in favor of this device at the university, and concluded with these lines:

All of these considerations constitute, in my opinion, a fairly convincing argument in favor of the implementation of the "flipped classroom" in universities: this implementation can perfectly well be limited at the outset to a very simple and very limited technical modification of the university teaching system most representative of the "tradition": it could concern, as Marcel Lebrun suggests, only one hour of his lecture out of the 14 hours of the semester: for this one hour, the contents will have been transmitted beforehand

to the students and worked on individually by them from a few instructions of activity. Depending on the evaluation, with the students, of the whole sequence (preliminary work + hour of lecture), the professor can decide to repeat the operation, modifying it if necessary, and then "graft" to it at will, in a flexible and progressive way, other more or less important pedagogical elements (preparations and presentations by groups, debates organized in different forms, insertion of projects with publication objectives, etc.).

We can see that the interest of the flipped classroom is there to allow a progressive reorganization of the whole teaching system led by the teachers themselves³¹. In a 2018 lecture (PUREN 2018a, slide show with written commentary), I reiterate my positive view of the "flipped classroom" at the university, but I immediately warn against an unthinking transfer of this device into school language teaching. I will be forgiven for quoting myself at length below, but I see nothing to add to or subtract from my argument (nor from the bibliography I cite in support of it in this document) at this point:

In school language teaching, on the other hand, the interest is much more questionable. There are many reasons for this, but the main ones seem to me to be the following (the last two are valid for all school disciplines):

1. The lecture has never been very important in the teaching of modern languages in schools: even in the so-called "traditional" methodology (modelled on the teaching of Latin and Greek as dead languages), the transmission phase, the "lectio" (the grammar "lesson"), was limited to the presentation by the teacher of the new point of grammar, and the most important working time was devoted to the application translations made by the pupils, and then to the collective correction of these translations. The objective of language teaching in schools is not to transmit language knowledge: this is only a means to the acquisition of know-how, which in turn is a means to the acquisition of competences, of "knowing how to act" in a foreign language and culture in the classroom and in society at large.

2. The break between traditional teaching and modern teaching - between traditional methodology and direct methodology, at the very beginning of the 20th century^e - consisted precisely in reversing the traditional system, in which students prepared the translation work in their study or at home before the collective correction in class: it is now the teacher who prepares the work in advance so as to help and guide the students in their discovery and immediate commentary of the document in class, the only system

³¹ And, at the university, with the students themselves (cf. PUREN 2017b, chap. 8, p. 14). But shouldn't we also imagine that at least the fine-tuning of the AHE is done with student participation, integrating these adjustments into the content to be managed in what is called "contract pedagogy"?

that guarantees that the recourse to the mother tongue (to the indirect method) is as limited as possible for the students. This is the first of three reasons why the flipped classroom in languages can be called a "reactionary innovation".

3. The prior contact of the students with the knowledge is done outside the presence of the teacher, who, in the face-to-face class, can at least see the students' reactions, and has the possibility of interacting with them in real time. This is a second reason why the flipped classroom can be qualified, in language and in all school disciplines, as a "reactionary innovation".

4. Last but not least, in project-based teaching - and this is one of the characteristics that make it so interesting from a pedagogical point of view - the resources are sought by the students themselves according to the needs they define during the development of their project. In the flipped classroom, on the contrary, these resources are predefined and prepared in advance by the teacher, and this is a third reason why the flipped classroom can be called, in languages as in all disciplines using project-based pedagogy, a "reactionary innovation." (2018a, slide 2, pages 2[1]-2[2])

Conclusion of Chapter 2: The construction of AHE systems, a complex reengineering process

We have seen in Chapter 2 that any significant "entry" into a teaching-learning system introduces a disruption that requires a complete rethinking of the system in order to reorganize it as a whole: the implementation of an ALE is therefore a matter of what is called "*reengineering*". In fact, ALE not only increases the amount of work done by students outside the classroom, and thus the use of their individual resources (commitment and level of autonomy, in particular), but it also modifies the modes of relationship between the teaching process and the learning process by introducing learning activities that are no longer limited to the simple repetition or revision of teaching activities. This implies taking into account the problematic of HTL in all the complexity of the seven notional couples that constitute it, as we saw in the conclusion of Chapter 1: teaching-learning-evaluation-use, heteronomy-autonomy, individual-small groups-class group, long-short time, direct-differed, proximity-distance, presence-absence.

The reengineering operation consists in undertaking the construction of AHE devices "from the ground up", i.e. from the fundamental disciplinary models. In the following chapter, I propose to experiment with the didactic models of two of its major domains: cognition and methodology.

3. Starting from fundamental disciplinary models: two examples

Introduction to Chapter 3

I have chosen two models from those available in my previous publications. I will implement one of the main functions of models, the heuristic function (cf. PUREN 014). In concrete terms, this means using these models as *brainstorming* supports, as machines for producing ideas in all their possible forms: remarks, considerations, questions, hypotheses, the mechanics being fed here by the intersection between each of these models and the HTL problematic with its seven notional couples.

One of the advantages of models, linked to their level of abstraction, is that they allow all users to immediately activate or generate personal ideas according to their own knowledge, experiences and reference environments, ideas that they will then have to select - some of which may indeed turn out to be of no real interest, or impossible to follow - in order to widen or deepen them at will, and to link them to each other, individually and/or collectively, if possible in more or less elaborate written productions³². It is these productions that I will outline here.

In order not to lengthen the present essay unnecessarily, the two models proposed in this chapter will not be reproduced or commented. My readers will excuse me for referring them to the corresponding referenced documents, immediately accessible from their Internet links, where they will find not only the diagrams, but also comments and bibliographical references that may be useful to them.

3.1. The different cognitive models of teaching-learning

"Évolution historique des modèles cognitifs d'enseignement-apprentissage des langues en didactique des langues-cultures",

www.christianpuren.com/bibliothèque-de-travail/016/

Reception. The "flipped classroom" is characterized by a significant implementation of this model in the distance and at the beginning of the learning sequences. However, this is the model systematized in traditional pedagogy. How then can we take into account active pedagogy by ensuring that the content is at least partly sought by the students?

Impregnation: This is the classic function of distance work in direct and active methodologies: cf. above the quotation from A. GODART, p. 28: "[The home lesson] consists of the student reviewing the given text in such a way that, without learning it by heart, he assimilates both the words and the idioms." This is a time-consuming teaching-learning model, so it is probably best implemented outside the classroom, given the limited number of class hours.

³² This is, in fact, a real research process that can only be carried out through a writing process (cf. PUREN DLC-ER-1).

Activation: This is a model that is especially suited to face-to-face learning, since it involves students responding directly to the collective requests of the teacher and other learners. This model is essential to encourage, help, guide and thus maintain the participation of the weakest and/or least motivated students.

Reaction: This is a model that is *a priori* much more suitable for distance learning, since exercises of this type can be programmed in digital form and be self-adjusted, as in "exercises", which were in fact one of the main activities imagined in CAE (Computer-Assisted Instruction) in the early days of computing.

Interaction: On the one hand, this model is easier to implement collectively in class, where the interlocutors are present: this is what has been done since the direct methodology by means of commentary on so-called "authentic" documents, and since the communicative approach in simulated communication situations. But on the other hand, interaction is more motivating if it is carried out with native speakers. Whether the interaction is done individually (one student with a foreigner) or collectively (in inter-class meetings), the cost in terms of organization and articulation with class work is however much higher.

Co-construction: This model is only really feasible in the classroom in a systematic and effective way in the classroom. However, this is the currently dominant cognitive model ("in theory", if not in actual classroom practice). The author of the law proposal who wanted to "provide students with distance learning as an alternative to face-to-face teaching" (cf. above, in the introduction) is certainly neither a didactician, nor a pedagogue, and even less a specialist in the psychology of learning...

Proaction: This model, which has become the cognitive model of reference when the actional perspective is implemented in its strong version, that of the (micro)project (cf. Puren 053), allows *a priori* for multiple forms of articulation between the classroom and the distance learning, since its fundamental principle is to take into account the micro-society of the classroom and the outside society in the same way, by articulating or combining activities in both: collective design of the project in class, individual research outside the classroom, collective selections in class on the basis of prior analysis at home, etc. Project-based pedagogy also presents multiple "convergences" with digital environments (searching for documents on the Internet, working on documents shared online, social projection of productions on the Internet, etc.). The flexibility that the project allows in terms of time and resources is a key factor in the success of the project. The flexibility that the project allows in terms of different relationships between face-to-face and distance learning is reinforced by the fact that it naturally functions as a didactic integrator, *i.e.* it allows the implementation of different methodological matrices (see chapter 3.2 below). I come back to the interest of project-based pedagogy at the very end of my general conclusion.

3.2. The different methodological matrices

Methodological matrices currently available in school didactic of languages and cultures in France³³

	TARGETED SOCIAL COMPETENCES		Targeted using act ¹	Privileged learning act
	Language competences	Cultural competences		
1. Reading matrix: active methodology (1920-1960)	Ability to maintain contact with the foreign language from a distance through authentic documents	Ability to mobilize and extract knowledge about the foreign culture from and about authentic documents: metacultural component.	reading, speaking out on (" <i>parler sur</i> ")	Collective oral explanations in class of authentic documents
2. Communicative-intercultural matrix: communicative-intercultural approach (1980-1990)	Ability to exchange information with visiting foreigners on an ad hoc basis during initial contacts or short stays	Ability to control cross-representations in interaction with others: intercultural component	meeting, talking with (" <i>parler avec quelqu'un</i> ")	Interactions in class in simulations and role-playing
3. Plurilingual-pluricultural matrix: plurilingual-pluricultural approaches (1990-...)	Ability to "live together", <i>i.e.</i> , to manage linguistically the permanent cohabitation with allophones in a plurilingual and pluricultural society	Ability to understand the attitudes and behaviors of others and to adopt common attitudes and behaviors acceptable in a culturally diverse society: pluricultural component	living with, talking to each other (" <i>se parler</i> ")	Cross-language conceptualization activities
4. Social-action matrix: co-language and co-cultural perspectives (2000-...)	Ability to "make society" and to work in a foreign language in a long-term with native and non-native speakers of that language.	Ability to developing with others common conceptions of collective action on the basis of shared contextual values: co-cultural component	acting with, consulting with (" <i>en parler avec quelqu'un</i> " = " <i>se concerter</i> ")	real or simulated social actions carried out in project mode in class society and/or outside society

1. With the appropriate expressions in French.

The "methodological matrices" correspond to the methodologies that are currently available, either entirely or by "objects"³⁴, to configure modular devices that can be adapted to any type of AHE environment.

3.2.1. The active matrix

What characterizes this matrix, heir to the direct matrix of the 1900s (as we saw above in chapter 2.2 with the quotation from A. GODART 1903 and the analysis of the 1950 instruction by M. ANTIER, D. GIRARD and G. HARDIN), is that teaching is essentially done in the classroom, face-to-face, and that work at home, in the distance, is devoted only to revision. On the other hand, if we look at it not from the point of view of teaching-learning, but from the point of view of use, everything is done in this methodology matrix *for* and *through* distance learning. The objective it pursues, in fact, is to give students the ability to maintain contact with the foreign language-

³³ Table extracted from page 20 of : "Integrative Functions of the 'Mini-Projects' of the Didactic Units of Language Textbooks in the Social Action-Oriented Approach (SAOA)", pp. 9-24 *in*: ACAR Ahmet (ed.), *Training social actors in ELT* [English Language Teaching], Ankara: Akademisyen Kitabevi A.Ş., 231 p.

³⁴ On the notion of "methodological objects," parts of constituted methodologies that are sufficiently autonomous to be "copy-pasted" from one program to another or between them, see PUREN 2012f pp. 4-5 and 2019g pp. 11-12.

culture from a distance by reading novels, magazines or newspapers at home, listening to the radio or watching television³⁵; and it prepares students for this by having them do the same thing in class, i.e., by having them collectively comment on authentic L2 documents in order to extract new linguistic and cultural knowledge, and to have them mobilize their already acquired linguistic and cultural knowledge on this occasion.

In the active matrix, learning takes place through a remote academic use and for remote social use of the foreign language-culture. It is a perfectly coherent matrix, and perfectly adapted to the school language teaching-learning system in which it was conceived, because there is a perfect homology between the learning device installed and the intended situation of use. The fact that its objective is a remote use of the foreign language-culture makes it likely to bring interesting elements to the engineering of HTL, in connection with distance work and in relation to the actional perspective (cf. above point 1.2.4, p. 14 and below chapter 3.2.4, p. 39). In order to link face-to-face and distance activities on textual documents, for example, we can think of an articulation and/or a combination between the "documentary logics" of these two matrices, respectively the "document logic" and the "documentation logic" (cf. Puren 066).

3.2.2. The communicative-intercultural matrix

We can immediately see the difference between the active matrix and this communicative-intercultural matrix. The latter prepares students for face-to-face encounters with foreigners, a situation of use which is in opposition to the school learning situation, where students are neither abroad nor with foreigners. Hence the function, indispensable in the corresponding teaching-learning system, of simulation, which aims at artificially re-establishing a homology between the two situations. But the common situation thus created by the simulation is paradoxical: one asks the students in class, in presential, to make as if they were in a foreign country, at a distance of the language class, and as if they were in the presence of speakers of this language which they are precisely learning at a distance in class.

It is difficult to imagine a more artificial device, which is not a criticism on my part in itself (cf. my remarks on the notion of "artificial" at the end of chapter 1.1, pp. 6-7). But it should have led at least the communicative methodologists to be more reserved in their claim to "authenticity" (cf., in their discourse, their constant references to "authentic documents" and "authentic situations of communication"), and to understand why some students had difficulty entering such a sophisticated game. Before the communicative approach, the methodological matrix in force was adapted to the school teaching-learning system, and we will see that the two

³⁵ This is another use of "distance" in school language-culture didactics, which is that of the distance from the societies where the L2 is spoken (in this case we speak of "exolingual" teaching). Another use is that of the distance between the L1 and the L2. In the projects of joint teaching of reading comprehension in several Neolatin languages ("Galatea" and "Galantet" projects), we have thus spoken of "neighbouring" languages.

following matrices are also adapted: this communicative approach will undoubtedly go down in history as an astonishing parenthesis...

- ... where the teaching-learning of communicative competence in L2 was done without recourse to the already installed communicative competence of the students in L1 ;
- ... where the teaching-learning of the L2 was done in a unilingual mode while they were being prepared for communication situations that were by nature multilingual, since they would be abroad or would meet foreigners at home;
- ... and where it was claimed that the best way to get students to learn a language in class was to ask them to pretend they were somewhere else.

The system of the communicative approach is essentially based on the face-to-face, either in the classroom, through direct oral exchanges between students, or in simulation in the foreign society. Even if the said digital communication technologies and the Internet allow for communication at a distance, the shift to partially distance teaching must lead to a review of this communicative approach, as required moreover by its indispensable combination with the actional perspective (on this last point, cf. Puren 2014a and 2018f).

3.2.3. The plurilingual-pluricultural matrix

This matrix, which is in the process of being established, is very flexible in that its implementation must necessarily be highly contextualized³⁶, is based on several converging observations:

- Students have or will increasingly have to deal with multilingual situations in their society.
- The classroom, like the outside world, is a naturally multilingual environment.
- The learning of a new language is done by mobilizing the knowledge and skills already acquired in the other languages learned or being learned.

In HTL, the time for personal distance learning is extended, during which nothing prevents students from using personal multilingual strategies, and tools such as automatic translators. It is therefore essential to teach them to manage, in particular:

- L1 translations ↔ L2 (on the 12 possible functions of the use of L1 in the teaching-learning of a L2, cf. Puren 2003);
- cross-language comparisons;
- transfer of learning skills from one language to another.

³⁶ Cf. MAURER & Puren 2019, Conclusion of Part 5^e (B. MAURER), pp. 286-288.

To this end, the "integrated plurilingual methodology" (IPM) as presented by Bruno MAURER in Part 5 of MAURER & PUREN 2019 offers many ideas that allow the plurilingual-pluricultural matrix to make a valuable contribution to HTL engineering.

3.2.4. The action matrix

We have just seen it above at the end of the previous chapter 3.1, in relation to its cognitive model of teaching-learning, the proaction, and in relation to its reference learning and use activity, the project: this actional matrix is the one that makes the strongest and most immediate link not only between learning in the classroom and use in the outside society (like the active matrix), but also between use in the classroom and use in society (like the communicative matrix, but in a real and not simulated way). I refer to my modeling of the different possible intersections between learning action and use action (PUREN 025) and to the very last comment of this document (p. 4) concerning the actional perspective, which allows to mobilize all of them. In the framework of HTL engineering, the actional matrix can be exploited to create relationships between distance learning at home and distance work in society, which the health situation has led, and will undoubtedly lead in the future, to develop.

Conclusion of Chapter 3: A Heuristic Model of AHE Reengineering Crossing Environment Types and Domain Types

The presentation of all the ideas presented in this chapter 3 led me to develop the following model, in the form of a table crossing the types of environments (horizontally) and the types of domains to be taken into account in HTL (vertically): see next page.

Fig. 2: Crossing table between domain types and environment types in HTL

	The classroom as a school environment	The study hall as an intermediate environment	The home as a personal environment	The classroom as a micro-society	The student's society	The foreign society(jes)
	1	2	3	4	5	6
A. Teaching	A1	A2	A3	A4	A5	A6
B. Learning	B1	B2	B3	B4	B5	B6
C. Use	C1	C2	C3	C4	C5	C6
D. Evaluation	D1	D2	D3	D4	D5	D6

In this table, each box is referenced by a code generated by crossing the type and the corresponding environment domain (1a, 1b, etc.). All of these boxes should make it possible to place all of the ideas presented in this chapter, those that my readers will have generated themselves, as well as all of those that can be generated by their reflection on HTL from other

fundamental models of CSD, such as those of "experiential techniques"³⁷, of the school teaching procedure of grammar³⁸, of didactic units or sequences³⁹, or of mediation⁴⁰. Users will then be able to activate or generate new ideas by trying to fill in all the boxes, and fill in as many as possible. All these activities will obviously be more productive if they are carried out collectively. For example, in D4, the question of how to make the microclassroom a place for evaluation will be placed. We will then certainly link this question with the one, in C4, concerning the classroom microcommunity as a place of use.

4. A complex model of face-to-face relationship in hybrid teaching-learning (HLE)

4.1 The model table

The table below takes up the different domains of the previous diagram (fig. 2, p. 40) on its vertical axis, crossing them not with the environments, but with the seven modes of relating the teaching-learning processes. Like the central object of CSD - which is made up of three elements, teaching, learning and the teaching-learning relationship - the face-to-face and distance modes must be completed by that of the face-to-face-distance relationship (see fig. 3 below):

Fig. 3: Complex model of face-to-face relationships in HTL

PRESENIAL	RELATIONSHIP FACE-TO-FACE	DISTANCIEL
1. Education	9.	5. Education
2. learning	10.	6. Learning
3. Use	11.	7. Use
4. Evaluation	12.	8. Evaluation

Compared to what is suggested by the expression "distance education", which is found in box 5 of the above table, we can already see the real complexity of the problem.

³⁷ Reproduction of the diagram with comments and bibliographical references: "Les enjeux actuels d'une éducation langagière et culturelle à un monde multilingue et multiculturel", PUREN 052 (diagram p. 1 and note 5 p. 4).

³⁸ Reproduction of the diagram and comments throughout the article, "The Standard Procedure for Exercising in Language," PUREN 2016c.

³⁹ See PUREN 2011b, 2019g pp. 9-10.


⁴⁰ Cf. PUREN 2019b. Among the seven notional pairs that make up the "mediation paradigm", we find two components of the "HTL problematic": "proximity-distance" and "long-short time" (the latter, in the mediation paradigm, under the name "immediacy-duration"). Hybridization leads the teacher to assume a new and decisive function of mediation, that between the face-to-face and the distance learning, which teacher training will have to take into account from now on because it becomes more complex, and more decisive, than when the distance learning only served as a simple resumption of the face-to-face work

4.2 The different modes of face-to-face and remote networking

This complexity increases enormously when the face-to-face relationship in each of the four domains is broken down according to each of the "different possible logical relationships between two opposing boundaries": this is the title of the PUREN 022 document, where this model of relationships is applied successively to the "complex relationships between teaching methodologies and learning methodologies", to the "research training process" and to the "complex relationships between teaching culture and learning cultures".

These modes are seven in number...

Fig. 4: Different modes of logical relationship possible between face-to-face and distance learning in HTL

1. The continuum:	$x \leftrightarrow y$
2. The opposition:	$x \rightarrow \leftarrow y$
3. The evolution:	$x \rightarrow y$
4. the contact:	$x [-] y$
5. The dialogic:	$x \rightarrow y$ 
6) The instrumentalization:	$x]- y$
7) The framing :	$x [y]$

... that is a total of $4 \times 7 = 28$ points of intersection to be tested concerning the face-to-face relationship in HTL. Some of these points, certainly, will not activate or generate any idea, or any original idea, or any interesting idea, or any concretely feasible idea : as I indicated above - unlike those terms and expressions that *make us think* or *forget* what they themselves have chosen in their little corner of the noosphere, unlike also theories that lock us in their coherence, that is, in their exclusive, closed and limiting logics - models are machines, available in self-service, to multiply our own ideas and generate new ideas.

4.3 Some examples of crossbreeding

Here are some ideas produced from these crossings, indicated by the sign "#". I will limit myself to a single example for the first five crossing modes, and limit the few concrete examples I will give to a basic activity of school teaching-learning, namely document work.

4.3.1 Continuum # teaching

There may be more "teaching" in distance learning than in face-to-face learning, or the opposite, and this "more" may be quantitative and/or qualitative. The "flipped classroom" is based on the idea of shifting the cursor as far as possible towards remote teaching for one type of teaching activity (the transmission of knowledge) in order to produce effects that reorganize the entire

teaching-learning system and that are beneficial for face-to-face teaching, because they will allow the teacher to devote himself or herself to facilitation activities, collective reflection, support, etc. We have seen (cf. point 2 of the quotation above, pp. 31-32) that this idea is not appropriate for language teaching, in which there has not really been "teaching" in the traditional sense of transmission of knowledge by the teacher for a long time, who provides the knowledge during learning activities, at the moment when the students need it, or makes them discover or search for it.

There is, however, one type of pre-teaching activity that is common in CSD document work, and that is the teacher's initial input that will put students in a situation known as "active reading/listening". This activity aims to provoke hypotheses in the learners prior to the first contact with the document: the teacher provides the students with the title of the newspaper article, or the key words of a story, or the parameters of the communication situation corresponding to the dialogue that will then be listened to. These techniques could simply be placed in distance learning, but one can imagine in HTL to give more importance to these individual preparations, for example by making the students work at home on the lexical fields that they will meet later in the documents, or by making them search on the Internet for information that they will be able to mobilize in the interpretation of these documents: This would be a work on what was called in the communicative approach the "referential competence", which is known to be a very efficient help for the comprehension of the written or oral language. This can also be done by having them perform what I have called, in an essay on the notion of global comprehension in CSD (PUREN 2017f), an "armed approach" to documents⁴¹. The HTL also allows, by moving the cursor towards the distance, to consider a differentiation of this preparation prior to the discovery of the documents, according to the level of the students, or according to different tasks by groups.

4.3.2 Opposition # learning

We have seen that the traditional "school form" in French education was based on an opposition between face-to-face and distance learning, with personal work at home being considered to have negative effects on learning (cf. chapter 2.1. above, pp. 27-29). This opposition can no longer be maintained in such a clear-cut manner because of social evolution - the rise in the level of education of parents, their desire to follow and even accompany their children's studies - and also because of the forms of hybridization that digital technologies and the Internet allow.

But the students' learning styles - those that they implement during the initial contact with the documents, to continue with the example chosen here - may be very different from those that the teachers implement in class. It is likely, for example, that few students make the effort at

⁴¹ Cf. PUREN 2017f, chap. 7.5 The "armed" approach to texts in document logic, pp. 29-32).

home to do several initial readings or listenings to successively refine their "global understanding". The idea generated by this crossover between face-to-face and distance learning in the mode of opposition is that it is neither possible nor desirable for the teacher to try to reproduce face-to-face learning modes in distance learning - learning modes are necessarily and strongly modelled in class by teaching modes⁴², whereas they are modelled at home by individual cognitive profiles - ; but that, on the contrary, it is interesting to use their differences as enrichments of a *global methodology of HTL*⁴³. From this perspective, there is an urgent need for empirical research on the actual learning practices of students at home. The hypothesis that I formulate for my part is that they are very diverse and call upon other languages known or being learned, so that to describe them, and to exploit them, the plurilingual and plurimethodological approaches will prove to be the most adequate.

4.3.3 Evolution # usage

This intersection reveals the main objective of teaching a language-culture, namely that the students acquire competence in its use following their training. And if we apply this cross-reference to the face-to-face relationship, we obtain the following "ideal" model of distance versus face-to-face progression,

recovery → preparation → extension → use

Homework can no longer be conceived as a *repetition of work done in class*, but, as in the "flipped" classroom, as a *preparation for classwork*. Giving it more importance means entrusting it with activities that *extend* the work done in class. This is what teachers are already doing⁴⁴ when, following a study of documents in class, they ask the students, at home, to write a text by imagining the continuation of the story, or by modifying it according to the change of certain parameters, or by reacting to one or other of its aspects.

At the end of this evolution-progression, the students achieve use of the language-culture both in the classroom and at home. One of the fundamental principles of the actional perspective, borrowed from project-based pedagogy, is precisely the homology between the classroom micro-society and the outside society as environments of use, the classroom being considered as a naturally plurilingual and pluricultural space where real situations of use can be set up in close connection with social uses. This actional perspective makes it possible to go as far as to erase

⁴² The "learner-centeredness" would require the "respect of his individual learning strategies" - to use the consecrated expressions of the communicative methodologists -, the constraints and requirements of a collective teaching-learning limit in class the application of these principles to the point of making these expressions purely incantatory (cf. PUREN 1995a).

⁴³ One of the strong ideas of complex epistemology is that opposites can be complementary. For the application of this idea to the joint management of the communicative matrix and the actional matrix, see PUREN 2014a.

⁴⁴ We saw earlier (see Introduction to Chapter 3, pp. 33-34) that one of the benefits of modeling is that it serves to generate new ideas. They also allow teachers to put ideas into practice that they are already doing in their classrooms.

the face-to-face-distance distinction, following the example of what happens in remote work, where the employee's office at home is a social workspace in the same way as the one he or she has in the company's premises. In some companies, even, the main function of the face-to-face meeting is to maintain the employee's psychological link with his company and his colleagues⁴⁵.

One can thus imagine that class activities consist - to continue on the example of document processing - of exchanges on the documents studied outside the classroom, in study (by ensuring that this device can also accommodate group work) and/or at home (where collective activities are also possible at a distance). We then reach what is *a true inversion in CSD, which consists in HTL of moving from the remote resumption of face-to-face activities to the face-to-face resumption of remote activities*. This is indeed what teachers⁴⁶ already do in project-based pedagogy when they use in class a project carried out outside the classroom, for example a visit to a museum or a trip abroad.

The above diagram of evolution-progression of the face-to-face-distance relationship (from recovery to use) is strongly reminiscent of the one that Adrien GODART, in the conference cited above, conceived⁴⁷ in 1902 for the direct methodology:

Fig. 5 Progression of the "direct reading" (GODART 1903)

1 ^e period	2 ^e period		3 ^e period
<i>Read more</i>	<i>Reading explained</i>	<i>Cursive reading</i>	<i>Spontaneous reading</i>
(from the teacher's oral contributions in class)	(in class, under the direction of the teacher)	(in class, under the teacher's supervision)	(outside the classroom)

Table borrowed from PUREN 1988a, p. 111

In it, he presented the terminal goal of "spontaneous reading" in this way:

After the years of slow learning will come the years of free curiosity. In the third period, the student will free himself from the narrow discipline of the early years and his initiative, which was formerly exercised by the preparation of papers, will be asserted by personal reading, which will give the measure of his zeal. The good student was once the strong

⁴⁵ We can see that the greater the amount of work done at home, the more time the face-to-face sequences must devote to maintaining the link between the teacher and his or her students, i.e., to activities in the language classroom that fall within a domain that some communicative methodologists have called the "affective domain", alongside the "cognitive domain" and the "communicative domain". For a description of components of this domain, see PUREN 2017h.


⁴⁶ See note 44 above.

⁴⁷ It is indeed a question of conception: at the time of his conference, in 1902, the first students trained in direct methodology and its application to the reading of texts ("direct reading", the title of his conference) were beginning their year of 6^e. They would not reach the "3^e period" (classes of 2^{de} and 1^e) until 5 years later.

one in theme. From now on, he will be a great reader. Let us hope to have classes of great readers as soon as possible. (quoted in PUREN 042, p. 11)

As I report in my *History of Methodologies* (PUREN 1988a, pp. 111-113), the results of direct methodology did not live up to these expectations, and at the end of their six years of school learning, the vast majority of students did not exceed the required level in explained reading, which thus became, by default, the exclusive activity of the 2^e and 3^e periods. The later addition of the senior year has not changed this, nor, it seems to me, has the addition of four or five more years of primary education.

Adrien GODART's design error, and that of his (overly) enthusiastic colleagues promoting direct methodology, lay not in their scheme (repeated/explained/cursive/spontaneous reading), but in its limitation to the single mode of evolution. At the very least, a realistic adaptation to the real level of the students should have been ensured by adding the continuum mode:


reading-recovery - explained reading - cursive reading - spontaneous reading

The same is true for the model of the evolution of recovery to use presented at the beginning of this chapter 4.3.3, p. 44:


recovery - preparation - extension - use

All of these positions must remain available, because each may be the most appropriate for managing the face-to-face-telephone relationship in context, but it is nevertheless important to keep the objective in mind, and that it be ambitious even if it is unattainable, because it sets a direction and gives coherence to the action: these are the two functions of what is more accurately called a "goal."

4.3.4 Contact # learning

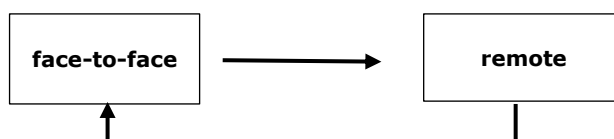
I will use the following example of implementing this crossover. A part of the class prepares the document in advance - either by limiting itself to activities such as those suggested above in chapter 4.3.1, p. 43, of "active reading", or in a more thorough manner, by means of guided and assisted commentary tasks, such as those I have proposed as training exercises on each type of commentary task (cf. PUREN 2006e, pp. 16-17). In the following class hour, the teacher can thus organize contact between face-to-face work (that of the group that will be discovering the text at that time) and distance work (that of the other group that will have prepared it in study and/or at home). I am sure that many teachers have already set up this kind of arrangement. But in addition to my remarks in note 44, p. 45, a given practice does not have

the same meaning or effect, in CSD, if it is isolated, or if it is part of a coherent system thought as such.

4.3.5 Dialogic # face-to-face

The reflection here is on the face-to-face and distance learning as such, thus encompassing each of their areas of relationship (cf. above fig. 3, p. 41).

To consider the face-to-face and the distance learning as two subsystems of a complex global system implies considering them in a dynamic way, i.e. maintaining between them a dialogical relation similar to the one we have seen above about the relation between didactic design and technological design (cf. above the conclusion of chapter 1, p. 21):



It is not only a question of establishing complementarities between the two systems, but also of creating *synergies*, and therefore of asking not only how distance learning can help face-to-face learning (as in the "flipped classroom" system), but also how, conversely, face-to-face learning can help distance learning: this last question, and the answers that will be given to it, are essential if we want to prevent HTL from worsening the impact of social inequalities on educational results.

In this perspective, it will undoubtedly be necessary to institutionalize, as the writer of the ministerial "continuity plan" mentioned above proposes, regular tutoring sessions within schools (MENJS 2020, Fiche 1.5, p. 4), one of the priority objectives of which will be to work with students in a reflective manner on this global methodology of ALE to which I alluded above in chapter 4.3.2, p. 44, concerning the opposition # learning crossover. It is undoubtedly necessary to interpose between the classroom and the home, which are too "distant" from the functional point of view⁴⁸, the mediation of a third place, that of study. The Language Centers and the University Resource Centers have a long experience in the field of tutoring which has given rise to numerous publications, many of which are accessible online⁴⁹. They are rich not so much in lessons - the audiences and the university and school systems are very different - as in questions, in particular on the function of mediation, which is becoming a central function of the teacher in HTL since it will deal precisely with the complex management of the face-to-face relationship. As I wrote

⁴⁸ This is yet another use of the notion of "distance" (cf. note 35 above, p. 36): no longer that of the home in relation to the classroom - the latter then serving as a place of reference, because the teacher is present there - but between the two places thought to have equal status.

⁴⁹ To see this, one only has to type in a search engine, after "language centers" or "resource centers" (including quotation marks), then "guided autonomy" or "semi-autonomy". One will find, in particular, a link to an article by Nicole Poteaux (POTEAUX 2014) which traces 20 years of evolution in the conception of these devices, with references to complex thinking and systemics.

above in note 40 p. 40, a cross-referencing of the mediation issue - and its seven notional couples: cf. PUREN 2019b - with the three models of the face-to-face-distance relationship proposed here (fig. 1, p. 18, fig. 2 p. 40 and fig. 3 p. 41) would certainly generate many ideas, some of which could prove interesting.

General conclusion: For a didactic of hybridization

The general introduction already announced (pp. 7-8) the two main ideas that I have developed and illustrated throughout this essay. I propose here to draw the main conclusions in terms of practical consequences for the design and implementation of HTL:

The integration of a greater share of distance teaching-learning cannot be properly managed by simply reallocating the practices currently in place. This integration necessarily has complex repercussions on the whole teaching-learning system, and it is therefore the whole system that must be revisited, which requires revisiting the fundamental didactic problems, mobilizing for this purpose all the ideas that can activate or generate the available disciplinary models.

The design and management of an ALE system is not limited to questions of teaching, learning and the teaching-learning relationship. It is also necessary to take up anew, as the complex didactics of languages and cultures requires, the related questions of evaluation and use. The three constituent perspectives of this complex didactics - methodological, didactical and didactological - will be strongly solicited for this conception and management⁵⁰.

As with all reorganizations of the teaching-learning system of languages and cultures - and this is the case for all school disciplines - several levels of responsibility interfere in the realization of such a global project, from the MENJS to the teacher in his or her classroom, including local authorities, inspectors, trainers, schools and teaching teams. The transition to HTL leads to a very strong increase in the complexity of the teaching-learning-evaluation-use systems, which makes didactic engineering all the more important, since a large part of it will have to be carried out permanently by the teacher, who is the only one able to make the appropriate adjustments in the field and to modify them according to the differentiated evolution of needs. But it will not be possible to avoid, in the more or less long term, a revision of the official programs and pedagogical and didactic orientations, nor a reconsideration of the support of these programs to

⁵⁰ On these three constituent perspectives of CSD, see PUREN CSD-DR-1. All of the examples of classroom activities offered in this essay fall under the methodological perspective. The two disciplinary models used in Chapter 3 - that of the different cognitive models and that of the methodological matrices - implement the didactic (or meta-methodological: see also PUREN 044) perspective. The didactological, or meta-didactic, perspective is obtained from epistemological, ethical and ideological positions: in the present essay, the considerations on the notion of "system" belong to epistemology. Finally, I announced in the general introduction (p. 5) that I would not deal with the concerns and criticisms concerning the effects of a poorly thought-out and poorly carried out ADE: it can be seen that they would have strongly mobilized the other two didactological, ethical and ideological positions.

a CEFR, already necessary before⁵¹, this document proving to be even more obsolete in relation to the problematic of HTL⁵².

At the level of didacticians and trainers, the elaboration of a *didactic of hybridization*⁵³ is indispensable, in order to propose to teachers, as is the function of this perspective in the sense of the discipline "didactics of languages-cultures", not ready-made answers, but questioning tools to be used constantly in combination with those of research, namely the tools of observation, analysis, interpretation and intervention (cf. PUREN DLC-DR-1, point c p. 3).

Without too much risk of being wrong, we can already suggest that the stakes, the problems and the risks linked to a greater share of individual learning decoupled from the place and the time of the classroom will make it indispensable, in HTL engineering the design and management of a system that resolutely implements the principles of "explicit teaching", as well as a combination of the major orientations that are still called "pedagogies", even if the focus is conceived in a much more complex way, also concerning the learner, the group, the contents, the institution (cf. PUREN 1995a) : "contract pedagogy", "group pedagogy", "differentiated pedagogy" and "project pedagogy".

Bibliography

All web links valid as of the publication date of this essay, August 2020.

ANTIER Maurice, GIRARD Denis, HARDIN Gérard. 1972. *Pédagogie de l'anglais*, Paris : Hachette, 208 p.

BOURDIEU Pierre & PASSERON Jean-Claude. 1970. *La Reproduction. Éléments pour une théorie du système d'enseignement*, Paris : Éditions de Minuit, 280 p. Extraits disponibles sur le site numilog.com, <https://www.numilog.com/LIVRES/ISBN/9782707302267.Livre>.

BREAL Michel. 1972. *Quelques mots sur l'instruction publique en France*, Paris : Hachette et Cie, 411 p., <https://gallica.bnf.fr/ark:/12148/bpt6k205247d/f1.image.texteImage>.

CERISIER Jean-François. 2020. « Covid-19 : heurs et malheurs de la continuité pédagogique à la française », 17 mars, <https://theconversation.com/covid-19-heurs-et-malheurs-de-la-continue-pedagogique-a-la-francaise-133820>.

⁵¹ This is the central thesis of MAURER & PUREN 2019, announced right from its title, *CEFR: this way out!*

⁵² At no point does the February 2018 *Supplemental Volume* address the issue of ALE. This is not surprising, because the only thing that the private organizations that controlled the writing of this document, as with the previous one (the 2001 CEFR), are really interested in is certificate assessment, which by its very nature is only interested in the performance of candidates at the time and place of the tests.

⁵³ "Didactic" here has the limited meaning it has in the term "didactic perspective" (cf. PUREN DLC-DR-1 and PUREN 044).

- FOREST WOODY HORTON Jr. 2008. *Introduction à la maîtrise de l'information*, Paris : UNESCO, 112 p., <http://unesdoc.unesco.org/images/0015/001570/157020f.pdf>.
- FRAU-MEIGS Divina. 2020, « Pédagogie à distance : les enseignements du e-confinement », site theconversation.fr, 3 mai, <https://theconversation.com/pedagogie-a-distance-les-enseignements-du-e-confinement-137327>.
- GODART Adrien. 1903. « La lecture directe. Conférence pédagogique du 27 novembre 1902 à Nancy », *Revue de l'Enseignement des Langues Vivantes*, n° 11, janvier 1903, pp. 471-486. La pagination des citations dans le présent essai est celle de la republication en ligne : www.christianpuren.com/bibliothèque-de-travail/042/.
- LE MOIGNE Jean-Louis. 1994. *La théorie du système général. Théorie de la modélisation*, Paris : PUF, 338 p., www.intelligence-complexite.org/inserts/ouvrages/0609tsgtm.pdf.
- MAURER Bruno, PUREN Christian. 2019. *CECR : par ici la sortie !*, Éditions des Archives Contemporaines, <https://eac.ac/books/9782813003522>.
- MENJS. 2020. (Ministère de l'Éducation nationale, de la Jeunesse et des Sports). « L'enseignement hybride », Rentrée scolaire 2020, Plan de continuité pédagogique, Fiche 1.5, « Les outils et ressources pour la continuité pédagogique, B.O. du 10 juillet 2020, <https://eduscol.education.fr/cid152893/rentree-scolaire-2020-plan-de-continuite.html>.
- MORIN Edgar. 1991. *La Méthode : Les idées, leur habitat, leur vie, leurs mœurs, leur organisation*, Paris : Le Seuil, 264 p.
- PINLOCHE Auguste. 1908. « Réaction et progrès », *Les Langues Modernes*, n° 4, avril, pp. 129-134. En ligne sur le site de la BNF : <https://gallica.bnf.fr/ark:/12148/bpt6k9684255c/f19.item>.
- POTEAUX Nicole. 2014. « Les langues étrangères pour tous à l'université : regard sur une expérience (1991-2013) », *Les Dossiers des Sciences de l'Éducation* n° 32, pp. 17-32, <https://journals.openedition.org/dse/644>.
- PUREN Christian. 014. « Modélisation et modèles. Bernard WALLISER 1977 », www.christianpuren.com/bibliothèque-de-travail/014/.
- 015. « Théories externes versus modélisations internes. Selon Richard RORTY », www.christianpuren.com/bibliothèque-de-travail/015/.
 - 022. « Un "méta-modèle" complexe : typologie des différentes relations logiques possibles entre deux bornes opposées », www.christianpuren.com/bibliothèque-de-travail/022/.
 - 033. « Fonctions de la traduction L1 ↔ L2 en didactique des langues-cultures », www.christianpuren.com/bibliothèque-de-travail/033/.
 - 042. Voir GODART Adrien 1903.
 - 044. « Le champ (de la perspective) didactique : illustration du fonctionnement par deux expériences mentales », www.christianpuren.com/bibliothèque-de-travail/044/.

- 046. « Les composantes de la complexité », www.christianpuren.com/bibliothèque-de-travail/046/.
- 048. « Les quatre références épistémologiques d'une didactique complexe des langues-cultures », www.christianpuren.com/bibliothèque-de-travail/048/.
- 050. « Grille d'analyse des différents types actuels de mise en œuvre de l'agir dans les manuels de langue », www.christianpuren.com/bibliothèque-de-travail/050/.
- 052. Les enjeux actuels d'une éducation langagière et culturelle à un monde multilingue et multiculturel, www.christianpuren.com/bibliothèque-de-travail/052/.
- 053. « Le projet pédagogique comme intégrateur didactique », www.christianpuren.com/bibliothèque-de-travail/053/.
- 066. Les cinq logiques documentaires actuellement disponibles (modèle), www.christianpuren.com/bibliothèque-de-travail/066/.
- 069. « Comment intégrer la démarche de projet dans le travail en classe sur les unités didactiques des manuels de langue », www.christianpuren.com/bibliothèque-de-travail/069/.
- 073. « Matrices méthodologiques actuellement disponibles en didactique des langues-cultures (tableau) », www.christianpuren.com/bibliothèque-de-travail/073/.
- 1994e. *La didactique des langues à la croisée des méthodes. Essai sur l'éclectisme*, 3ème édition électronique, octobre 2013, 139 p. [1ère édition papier : Paris, Didier, collection CREDIF-Essais, 1994, 139 p.], www.christianpuren.com/mes-travaux/1994e/.
- 1995a. « La problématique de la centration sur l'apprenant en contexte scolaire », *Études de Linguistique Appliquée* n° 100, oct.-déc. 1995, Paris : Klincksieck, pp. 129-149, www.christianpuren.com/mes-travaux/1995a/.
- 1998b. « Éclectisme et complexité en didactique scolaire des langues étrangères ». *Les Cahiers pédagogiques* n° 360, janvier 1998, pp. 13-16, www.christianpuren.com/mes-travaux/1998b/.
- 2000b. « Pour une didactique complexe », pp. 21-29 in : MARQUILLO LARRUY Marine (dir.), *Les Cahiers FORELL* (Revue de la Maison de l'Homme et des Sociétés, Poitiers), Actes des Journées d'Étude de Poitiers des 20-22 janvier 2000, « Questions d'épistémologie en didactique du français (langue maternelle, langue seconde, langue étrangère) », www.christianpuren.com/mes-travaux/2000b/.
- 2003a. « Contre la "pédagogie différenciée" ! », *Lengua e nuova didattica* n° 2/2003, www.christianpuren.com/mes-travaux/2003a/.
- 2003b. « Pour une didactique comparée des langues-cultures », *Études de Linguistique Appliquée* n° 129, janvier-mars 2003, pp. 121-126, www.christianpuren.com/mes-travaux/2003b/.
- 2006e. « Explication de textes et perspective actionnelle : la littérature entre le dire scolaire et le faire social ». Première publication sur le site de l'APLV, www.aplv-languesmodernes.org/spip.php?article389. Reproduction papier in : *Le Langage et l'Homme, revue de didactique du français*, vol. XXXXIII, n° 1, juin 2008, Bruxelles : E.M.E. « Intercommunications », pp. 143-166. Reproduction en ligne : www.christianpuren.com/mes-travaux/2006e/.
- 2009e. « Nouvelle perspective actionnelle et (nouvelles) technologies éducatives : quelles convergences... et quelles divergences ? » [Conférence donnée au Colloque Cyber-Langues 2009 à Reims le 25 août 2009. Première publication en ligne sur le site de l'APLV : www.aplv-languesmodernes.org/spip.php?article2673. Reproduction en ligne : www.christianpuren.com/mes-travaux/2009e/.

- 2011b. « Projet pédagogique et ingénierie de l'unité didactique ». Conférence au XXXII^e Congrès de l'APLIUT (Association des Professeurs de Langues des Instituts Universitaires de Technologie), « Les enseignants de langues, ingénieurs de projets », IUT de Vannes – 3, 4 et 5 juin 2010, www.christianpuren.com/mes-travaux/2011b/.
- 2012f. « Configurations didactiques, constructions méthodologiques et objets didactiques en didactique des langues-cultures : perspective historique et situation actuelle », www.christianpuren.com/mes-travaux/2012f/.
- 2014-12-23. « La "classe inversée" à l'université comme moyen d'y amorcer le changement pédagogique », Billet de blog, www.christianpuren.com/2014/12/23/la-classe-inversée-à-l-université-comme-moyen-d-y-amorcer-le-changement-pédagogique/.
- 2014a. « Approche communicative et perspective actionnelle, deux organismes méthodologiques génétiquement opposés... et complémentaires », www.christianpuren.com/mes-travaux/2014a/.
- 2015a. *Théorie générale de la recherche en didactique des langues-cultures. Essai*. À propos d'un article d'Albert DAVID : « La recherche intervention, un cadre général pour les sciences de gestion ? », www.christianpuren.com/mes-travaux/2015a/.
- 2016d. « La didactique des langues-cultures face aux innovations technologiques : des comptes rendus d'expérimentation aux recherches sur les usages ordinaires des innovations », www.christianpuren.com/mes-travaux/2016d/.
- 2017b. « Culture numérique et culture universitaire en filière langues, littératures et cultures étrangères (LLCE) : quelle stratégie de changement durable ? », pp. 21-49 in : ROUISSI Soufiane, PORTES Lidwine & STULIC Ana (dir.), *Dispositifs numériques pour l'enseignement à l'université. Le recours au numérique pour enseigner les langues, les littératures et civilisations étrangères*, Paris : L'Harmattan, 2017, 204 p., www.christianpuren.com/mes-travaux/2017b/.
- 2017f. « Approche globale et compréhension globale des documents en didactique des langues-cultures : de la méthodologie traditionnelle à la perspective actionnelle », www.christianpuren.com/mes-travaux/2017f/.
- 2017h. « Évolution historique et gestion complexe actuelle de la relation entre langue et culture en didactique des langues-cultures » [diaporama commenté par écrit], www.christianpuren.com/mes-travaux/2017h/.
- 2018a. « La "classe inversée" : une analyse critique d'un point de vue de didactique des langues-cultures », www.christianpuren.com/mes-travaux/2018a/.
- 2018c. « Innovation et changement en didactique des langues-cultures ». Conférence vidéoscopée (en français, 1h00) au XXVII^e Coloquio de la AFUE, Asociación de Francesistas de la Universidad Española, Universidad de Sevilla, 9 mai 2018. Enregistrement vidéo + reproduction du diaporama au format pdf, www.christianpuren.com/mes-travaux/2018c/.
- 2018f. « L'actualité de l'approche communicative dans le cadre de la mise en œuvre de la perspective actionnelle : une affaire de construction située et finalisée », www.christianpuren.com/mes-travaux/2018f/.
- 2019b. - 2019b. *L'outil médiation en didactique des langues-cultures: balisage notionnel et profilage conceptuel*. Première édition électronique décembre 2019, 122 p., www.christianpuren.com/mes-travaux/2019b/.
- 2019g. « L'élaboration de la perspective actionnelle et la situation méthodologique résultante en didactique des langues-cultures », www.christianpuren.com/mes-travaux/2019g/.

- 2019i-es. "La didáctica en la formación del profesor: entre las teorías y las prácticas, los modelos", pp. 23-32 in: LEAL Antonio, OLIVEIRA Fátima, SILVA Fátima et al. (dir.), *A Linguística na Formação do Professor: das teorias às práticas*, Porto: FLUP, 2019, 256 p., www.christianpuren.com/mes-travaux/2019i-es/.
- 2020a. « Le système des modèles en didactique des langues-cultures : modèles pratiques, praxéologiques, théoriques, didactologiques », www.christianpuren.com/mes-travaux/2020a/.
- DLC-DR-1. Cours en ligne « La didactique des langues-cultures comme domaine de recherche », Dossier n° 1 « Les trois perspectives constitutives de la DLC », 8 p., www.christianpuren.com/cours-la-dlc-comme-domaine-de-recherche/dossier-n-1-les-3-perspectives-constitutives-de-la-dlc/.
- DLC-DR-3. Cours en ligne « La didactique des langues-cultures comme domaine de recherche », Dossier n° 3 « Modèles, théories et paradigmes », 29 p., www.christianpuren.com/cours-la-dlc-comme-domaine-de-recherche/.
- DLC-ER-1. Cours en ligne « L'écriture de la recherche en didactique des langues-cultures », Chapitre 2 « Recherche et écriture de la recherche », 7 p., www.christianpuren.com/cours-ecriture-de-la-recherche-en-dlc/chapitre-1-recherche-et-ecriture-de-la-recherche.
- DLC-MR-5. Cours en ligne « Méthodologie de la recherche en didactique des langues-cultures », Chapitre 5 « Élaborer sa problématique de recherche », 14 p., [www.christianpuren.com/cours-méthodologie-de-la-recherche-en-dlc/chapitre-4-elaborer-sa-problématique-de-recherche/](http://www.christianpuren.com/cours-methodologie-de-la-recherche-en-dlc/chapitre-4-elaborer-sa-problematique-de-recherche/).

PUREN Christian, BERTOCCHINI Paola. 2001k. « Entre "pédagogie différenciée" et "apprentissage autonome" », *Les Langues modernes* n° 4-2001, oct.-nov. 2001, pp. 38-44, www.christianpuren.com/mes-travaux/2001k/.

PUREN Christian, SANCHEZ Fatima. 2001i. « L'organisation d'un parcours d'autonomie guidée en enseignement-apprentissage grammatical : comparaison entre un dispositif papier (manuel) et un dispositif informatique (site Internet) ». *Études de Linguistique Appliquée* n° 122, avril-juin 2001 (« Pratiques de l'enseignement et de l'apprentissage de la grammaire »), pp. 211-228. Paris : Klincksieck, www.christianpuren.com/mes-travaux/2001i/.

SIMON Herbert A. 1969. *Sciences des systèmes, sciences de l'artificiel*, trad. fr. Paris : Dunod, 1991, 1996, 230 p. [1^e éd. The Massachusetts Institute of Technology, Cambridge, Massachusetts, 1969, 1981].

TROUCHE Luc. 2020. « Comment Shanghai répond aux défis de l'enseignement des maths à distance », L'« *Expresso* » du 9 juin 2020 (dernière consultation 11 juillet 2020), www.cafepedagogique.net/LEXPRESSO/Pages/2020/06/09062020Article637272874349312877.aspx.

VINCENT Guy, LAHIRE Bernard, THIN Daniel. 1994. « Sur l'histoire et la théorie de la forme scolaire », pp. 11-48 in : VINCENT Guy (dir.) *L'éducation prisonnière de la forme scolaire ? Scolarisation et socialisation dans les sociétés industrielles*, Lyon : Presses Universitaires de Lyon, 1994, www.guyvincent.fr/wp-content/uploads/2019/08/L'éducation-prisonnière-de-la-forme-scolaire-p.1-48.pdf.

www.christianpuren.com/mes-travaux/2020e-en/ (April 2022)

<https://www.researchgate.net/publication/360354677> (May 2022)

VINCENT Guy, COURTEBRAS Bernard, REUTER Yves. 2012. « La forme scolaire : débats et mises au point. Entretien », *Recherches en didactiques* n° 13, pp. 109-135, www.cairn.info/revue-recherches-en-didactiques-2012-1-page-109.htm.