

Guided Self Learning

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Abstract

In our days of Artificial Intelligence, smartphones and all Internet of Things that provide us with myriads of connected objects at a very early age, education has to be transformed to integrate the searching power these means of communications, in fact first of all means of exploration-incorporation, provide every single individual in our society. They have become the main means of development for mass-education in a knowledge society. I will at first start from the mental architecture of a learner and move to the fundamental transference phenomena that command the motivation of a learner and a self-learner has to live on his own motivation. Then I will move to the role and responsibility of the Conceptor-Designer of a batch of self-learning work based on the choice expressed by the Self-Learner, from the resources provided or suggested by the batch to the tasks to be fulfilled. Everything is hegemonies by the type of needs and activities the learner will have to face and assume in his future professional field. The Self-Learner will have to target what is in his "zone of proximal development" to be most effective. That will lead us to the triadic guided self-learning situation centered on the Self-Learner but with the guidance from the Conceptor-Designer on one side and the real professional world represented by the Coach-Counterpart-Partner-Doppelgänger that accompanies the Self-learner in his voyage on the other side. The Internet, in its present development, is the real toolbox the Self-Learner has at the tip of his fingers constantly. That will lead us to the Boolean logic of the Internet that has to be understood and dominated by the Self-Learner, at times against the interests of the search-engine the Self-Learner uses. I will end with one particular batch - called a triad - of self-learning work proposed in Fall 2018 to the CEO of a medical startup, which will bring the type of contract that can be signed by the company and the Conceptor-Designer who only sells Intellectual Property to the company.

Keywords: Motivation, autonomy, flexibility, self-learning, professional life, communication, AI, Boolean Logic, Internet, Deep Learning.

Introduction

In our days of Artificial Intelligence and the Internet, of smart phones and tablets, students, even very young, are no longer dealing with knowledge and the acquisition of knowledge the same way as in the times when the school teacher was the only or nearly only knowledge provider with the help of a library and its books, dictionaries and encyclopedias, apart from the family, the family circle and at times a religious representative. When students have access at any time, in any place, directly with a simple pocket-size

machine in their own hands as the intercessor, to any knowledge they are requesting, self-learning has become the normal mode that has to be exploited by teachers, professors and educational organizations or institutions to make the learners hyper-efficient. The only question that can and must be asked is: how can such learners be guided in their self-learning quest to reach as much knowledge as possible, from as many different sources as possible and then elaborate some synthetic approach that takes into account the various points of view they have encountered along the way?

Post-modern education encouraged learners to be confronted with different points of view because there is no final and unique truth on any subject but only points of view. We are entering today a post-postmodern epoch in which learners themselves have all the tools and can have all the necessary initiative to reach all the knowledge they want and then confront and synthesize related yet possibly contradictory and even controversial points of view. The old syllogism

A- Socrates is human.

B- All humans are mortal.

C- Therefore, Socrates is mortal.

Is no longer true if we consider alternative approaches rather than the basic biological approach since this syllogism reduces man to nothing but an organic entity. But man can be considered as a spiritual entity and this spirituality can be stated as non-mortal. Is Socrates really dead since we are still quoting his name and his teaching as a philosopher? This point of view can have different colorations from the Christian approach of the eternal soul in man, to the Buddhist approach of the mind [6-8] and nibbana (nirvana in Sanskrit) that leads the Tibetan Buddhists to believe in the reincarnation of the original Buddha in the Dalai Lama, or to other Buddhist approaches that consider the reincarnation of any human mind that has not reached nibbana, when they would have been able to merge with universal energy in the cosmos. Some Buddhists, though, believe the reincarnation of a mind is only the fact that the teaching of this mind (when it was carried by a human being before his organic death) can be found in the presence and use of this mind's (hence the person that carried it) ideas and intellectual property, both virtual and material, this person and his/her mind had produced in his/her lifetime.

We are here dealing with intellectual property that lives long after the death of the inventor or author. Its economic value is protected for long periods of time and its moral value is eternal. What is, in moral terms, Caesar's once, is, in the same moral terms, Caesar's forever.

The question I want to approach here is very simple: How can this self-learning learner and his/her self-learning be guided and by whom?

Method

My method has been, all along my career, to choose documents or manuals for the students I worked with and then always customize the documents I submitted to the class or the students to their "needs" and "desires." The needs were both scholarly (their progress in the institution they were in) and professional (what they will need when entering a profession). The desires were always solicited from the class, to choose a film, for example, to work on and a vote was used if necessary, on an open choice about the films suggested by the students themselves. Working on a film may cover a long period of time when sliced up in three-to-five-minutes sequences. The class could always decide to change films, though I must admit I only encountered this situation twice: once in a junior high school class who had chosen a light comedy and got bored after three sessions (about fifteen minutes of the film); once at college level in a vocational audio-visual class who refused to work on a file about *Batman Returns* containing a long interview of the lights engineer who had encountered a great problem for an underground scene in which the lights for Batman could not be kept for the Penguin because the latter turned orange, but the two actors could not be on the set together and the scene had to be shot separately with Batman and with the Penguin. In this report, the lighting director explained in detail the solution he found. The

students, future technicians for cinema and television, argued that it was a blockbuster popular film and that they were not interested. I, of course, retrieved the file and changed the subject and moved to Peter Greenaway's *Drowning by Numbers*, which seemed to satisfy them. It was in a time when the DVD did not exist and we had to go through VHS tape, hence a rather limited choice.

My method then is a constantly experimental method that proposes classes or students with new resources and new tasks all the time. From one year to the next I modify the resources and the tasks to fit the abilities and motivation of the students. All my life I measured my work with the results the students got in their official graduating tests that were nearly always one to two points (out of 20 with a passing average at 10) over the average of similar classes. I actually think in teaching you should not enter any strict and austere laboratory evaluation or validation. The students will always feel better at ease and reach higher results if they feel the teacher is personally involved in what he/she presents and asks them to do.

One young lady, a junior high school student, once gave me a personal study of the film *Seven* the class had chosen. Her study was twenty-five pages long and it was not in any way direct copy-and-paste (it was handwritten anyway). That's the trap (for the teacher) of my method: the teacher has to evaluate and correct anything the students hand in.

This study is thus more a report on a life-long experience than a laboratory experimental study.

The Basic Principles

First, self-learning is one form of learning. But what is learning?

Without entering too much detail, Homo Sapiens [4] is the only surviving Hominin species (apart from chimpanzees) that

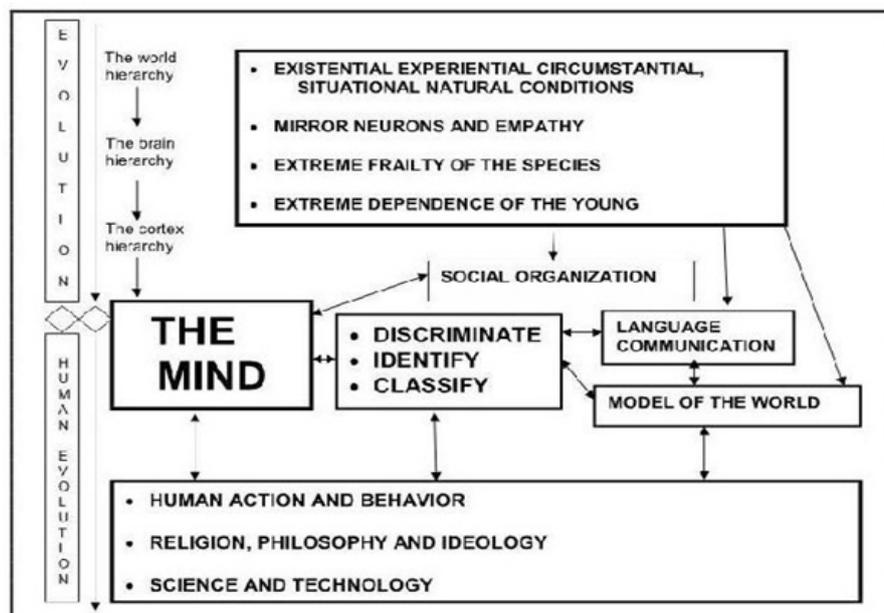


Figure 1: Human mental development

has been brought to founding their life, which means their survival strategy, on developing a mind and a language [6-8] that enable them to build a full and expanding system of understanding the world, life and imagining all sorts of possibilities beyond the present and eventually death. Here we are concerned only with the knowledge human beings acquire and develop that makes them more productive and able to develop their knowledge and know-how, hence their life and survival. Figure 1 proposes a chart showing that complex venture that is unique with *Homo sapiens* (Figure-1).

The mind is the central element of this approach and it is systematically centered on the three actions (discriminate – identify – classify) only possible because of the architecture of the human brain as an organ and the mind as a virtual construct in the brain and because of the development of articulated language to replace or in fact amplify the brain-language that identified, for memorization, the patterns discriminated in the continuous flow of sensorial stimuli. But remain aware the “mind” is a virtual construct of the brain and in the brain; like language and the two develop and grow together in simultaneous, reciprocal and parallel amplification.

You obviously do not learn what you already know. At any age a human subject knows things and his mind has organized this knowledge in a certain way and this subject has developed language as a virtual construct too in his own mind amplifying the mind’s progress in his/her own language and in the mind’s development itself, within and under the influence of the real world that dictates the continuous flow of sensorial stimuli. At any moment the knowledge of a subject can be mapped in a complex three-dimensional virtual architecture. It is on the basis of this acquired construct that the subject will confront the new knowledge that will have to be integrated into this knowledge architecture. To be integrated easily it will have to find some points of attachment in the already integrated knowledge and on the basis of such points of attachment, the already integrated knowledge will have to be restructured in order to get a unified vision. In traditional forms of teaching that was done under the guidance of a teacher through various drills (exercises and learning procedures). Even then some learners were able to access alternative sources, in libraries for example and to come up with the knowledge that was not part of what the teacher had tried to impart and that could create conflicts or confrontations. In classes that integrated debates that was easy. In classes that did not integrate debates, that was difficult.

Today what was considered as only a side question by many in the old days, the way the learners represented the new knowledge and its integration in the already acquired knowledge and the method used to integrate this new knowledge have become central in a self-learning process. Most students are visual learners. They have to “see” the new knowledge and its articulation on the old knowledge to integrate it. These students could use some other methods to make this knowledge visible and some students needed these other methods as central: writing down the new knowledge, repeating it orally, in silence or not, reading it over and over again, at times even feeling it in a way or another. Some students can demonstrate a dominant “feeling” approach: either physical feeling

by touching or emotional feeling with some empathy. Empathy for knowledge? Yes and often for the human or non-human entity that carries this knowledge. We have to consider here all types of transference activities [23], attitudes or representations and each student transfers some human entity in their attempt to reach out for that knowledge. The transference can be positive and then learning becomes the continuation of the father or mother figures the learner projects into his/her learning procedure. But it can also be negative in two ways: on one hand, the transference centers on someone who is not the father or the mother of the learner and who can be another more distant member of the family or a non-member of the family; on the other hand, learning can become a challenge that enables the learner to step out of his family circle, even to escape that family circle which may be hostile to his/her own learning, or which he/she assesses to be hostile to it. In the old days, the family had the last word by deciding to get the learner out of school after a certain age and send him/her to work as an apprentice first and then a qualified worker. Today it is a lot more difficult because education is no longer the only way to acquire knowledge and a young person, as soon as he/she is eighteen, can take his/her fate in his/her own hands.

Note here autistic people, particularly Asperger cases, may need that escape to feel complete in themselves and in their quest for self-development through the acquisition of knowledge. In England Daniel Tammet [15] and in France Hugo Horiot [10] are the strongest advocates of the integration of autistic people, particularly Asperger people, in standard schools and society, though both authors seem to imply the central role played by at least one parent in this integration. It is, in fact, our ignorance about the genesis of this behavioral difference that makes us consider they are difficult to integrate and deal with and that there is little we can do to help them. Does this behavioral difference have a genetic dimension? Is it purely socio-psychological? We do not know and those who insist on the purely genetic nature of this autistic difference are probably wrong. This questioning could lead us very far.

Transference is often reduced, following Sigmund Freud, to a phenomenon encountered in psychotherapy like for example in the following approach:

“Transference, first described by Sigmund Freud, is a phenomenon in psychotherapy in which there is an unconscious redirection of feelings from one person to another. In his later writings, Freud learned that understanding the transference was an important piece of the psychotherapeutic work.”

Shirah Vollmer is looking at the phenomenon from her own psychotherapeutic practice. The very same phenomenon happens all the time in any learning-teaching situation from both the students and learners from the teachers. Most teachers refuse to deal with these transference activities on the side of the learners, but it is in many ways vain and it frustrates the learner in his/her own motivation. I have often encountered such transference in situations characterized by a lot of diversity and this very clearly has to do with a concept that some police authorities are dealing with in the USA. This phenomenon is being studied in various

US universities, but it is also used as the basic approach of some attitudes or behaviors among police forces that have to learn how not to be discriminatory and the unconscious transference of more or less unconscious racist or discriminatory attitudes is a very common element.

“In a time when racial prejudice is generally taboo and decision makers, including law enforcement officials, strenuously disavow the use of group-based stereotypes to make judgments that affect others, one might expect discriminatory outcomes to be unusual. However, research repeatedly indicates that discrimination is pervasive across many domains and specifically in policing. A major cause of biased policing is likely *the implicit biases that operate outside of conscious awareness and control* [my emphasis] but nevertheless influence our behaviors. Implicit biases (e.g., stereotypes linking Blacks with crime or with related traits like violence or hostility) influence judgments through processes of misattribution and disambiguation. Although psychological science gives us good insight into the causes of racially biased policing, there are as yet no known, straightforward, effective intervention programs. Nevertheless, there are several strands of research that represent promising avenues for further exploration, including intergroup contact, exposure to counter-stereotypic

exemplars and stereotype negation. Meanwhile, many police departments are adjusting their policies, trainings and procedures to try to address biased policing and community complaints. Several common themes among those changes include banning racial profiling, collecting data and training officers, reducing discretion and adopting new technologies. These adjustments are more likely to be successful if they incorporate the understanding that biased policing occurs in the absence of explicitly “racist” thoughts because of *well-documented, pernicious stereotypes that operate largely outside of conscious awareness and control* [my emphasis].” [14]

In this case of “biased policing,” the transference is coming from some old family or neighborhood opinion and prejudice expressed by some person or people when the police officer was young. We have the same phenomenon among police officers when considering women who report marital violence or rape. And in both cases, it may not be unconscious, though most of the time it is unexpressed. This mention of this transference phenomenon in teaching-training-coaching as well as learning-studying situations should be studied in detail but that would take us too far afield. So, I will keep to just mentioning it the way I have just done and summarized it in (Figure-2).

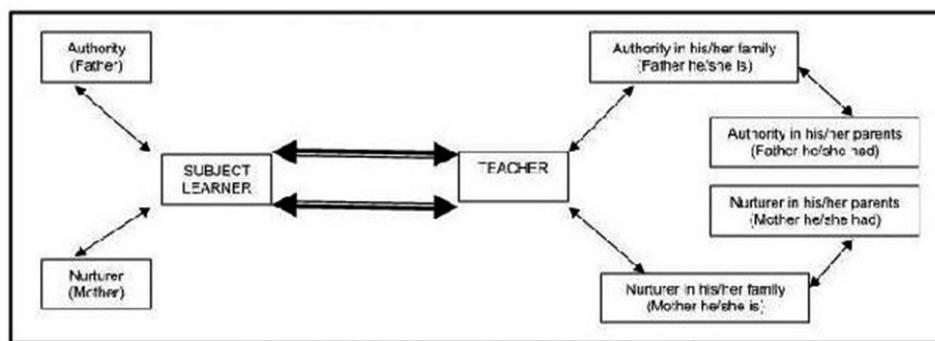


Figure 2: Transferences in a traditional family

The traditional description of a family is to consider the authority figure to be the father and the nurturer figure to be the mother. This is changing fast in our modern world because fathers are more and more taking care of their children and hence become nurturers and mothers work outside the family’s home and have professional careers and thus develop an authority profile in society. In the family, mothers also have an authority role that has been neglected and that is today amplified by their careers. Traditionally mothers were and still are the parent who weans the child from breastfeeding first and feeding in general towards some regular three meals a day and they also train the child to be clean and independent. A lot should be said on such roles within modern families, many of them reconstructed and hence having step-fathers and step-mothers in addition to mothers and fathers, not to mention first step-siblings, second single-parent families and third same-sex marriages and families. We must also take into account the fact that more and more children are taken care of by

institutions outside the family as soon as they are three months old with crèches, kindergartens and other day-care structures. But even if we consider the possible division of the authority role and the nurturer role on both sides of the learner and the teacher, we can see that a learner who accepts the authority of a teacher or coach transfers the authority figure in his family into his relation to this teacher who becomes an authority figure. In the same way, the learner can transfer the nurturer figure in his family into the teacher. We should probably add a third dimension that is not really taken into account in this authority-nurturer couple and that is the “love-dimension” that is invested in a family and in both parents, at times with quite different dimensions between the two parents. Note here that Jacques Lacan [9] who insisted on the two concepts of authority and nurturer, particularly with a strong emphasis on authority seen as the other (“Autre” in his own terms, hence capital A like Authority) in his Seminar neglected this “love” dimension (Figure -3).

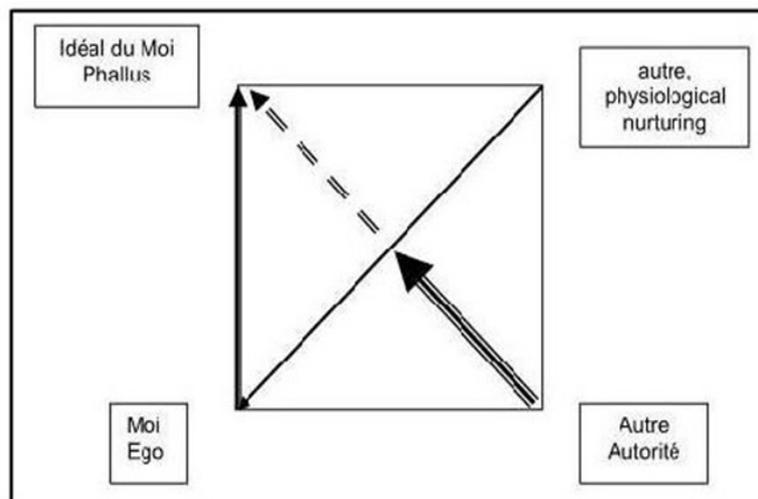


Figure 3: Jacques Lacan's Square

Without entering too much detail we can see that the “Ego” is constructed from the physiological senses, needs and nurturing of the “other” under a strong influence from the “Authority” of the “Other.” At the same time this “Ego” is constructing in his/her own mind a virtual “Phallus” [9] which is the way this “Ego” imagines, consciously or not, his/her future. In a way, it is his/her existential target. Note for Jacques Lacan this “Phallus” is in no way equivalent to the penis of the male subject. The “Phallus” is a signifying element that brings together the virtual being the subject imagines him/herself to be, or desires to be, in a double movement of being/having, the famous “*bheu” of Sanskrit, this verb that covers both “be” and “have,” both “being” and “having,” the difference in meaning being conveyed by the functional endowments of the two nominal phrases needed for the two sentences to make sense. Think for instance of the two sentences in English: “Paul is a poet” and “Paul has a poetic personality.” But in Lingala (Congo) the verb “be” is “-zala” and the verb “have” is “-zalana.” “Na” is a locative preposition equivalent to “with.”

-ZALA (meaning of “be”)

Ngai **nazal**akalaki ya masini. (Me I-am secretary and typist)

Moto **azali** mokúsé. (The man he-is small.)

Ngai **nazali**malamu. (Me I-amwell)

Mai **mazali**mpio. (Water it-is cold)

-ZALA NA (meaning of “have”)

Nazali naessengono yo té. (I-have satisfaction with you not = I am not satisfied with you)

Azali **namaladi**. (He-has disease)

Ezali **nalabonge**. (It-has fog = there is fog)

Yo ozalinambulabóni? (You you-have year show many? = How old are you?)

To go back to Jacques Lacan and his “phallus,” some people

may come to simpleformulas like “a man has the phallus and a woman is the phallus,” but that reduces this “Phallus” to only the sexual or sensual desire of all human beings. The “Phallus” is the projection of any subject, male or female, into his/her imaginary future of what he/she wants to be at any level of that being and that being has to be taken as double like in Sanskrit, i.e. “being/having”: desire, sexual definition, gender orientation, but also intellectual and mental definitions and projects (and any subject may have multiple definitions and projects), which includes language or even languages. Psychoanalysis has an easy tendency to reduce the subject to his/her sexual identity with, in modern times, an opening of this sexual identity to gender orientation that may lead to transsexual projects. But a human subject is a lot more than just his/her plain sexual identity or gender orientation. And I must insist here on the contradictory nature of this being/having, of this “Phallus,” because “to be” is “to have” (“to be human” is “to have” an articulated language and a hierarchical mind, “to have what makes a human being human”) but “to have” does not necessary implies “to be” (“to have two cars” does not imply “to be rich”) though “to have” may imply some derived “to be” (“to have slaves” implies “to be a slave owner,” but certainly not “to be a slave,” except in the following derived attribute, “to be a slave of slave-owning”). Such complications show how difficult it is to define the phallus of a person simply in terms of “be” and “have,” and the power it may have in and may be for that person’s behavior and social stance.

To go back to the coaching-teaching-training/learning-studying logic, we can note if the teacher is a man or a woman the transference phenomenon will be different and this fact will make it a lot more complex both for female and male learners, especially when the learner is confronted with both male and female teachers since then the learner is obliged to play on his transference behavior or behaviors: the domination of the teaching profession by women, after having been dominated by men for a very long time (at least in some countries) has direct consequences on these fundamental elements in all learners, at least on the way the learner cope with his/her phallus in a sexually unbalanced environment. We have

to take into account the contradictory nature of the being/having dynamic of any subject on any side of the teaching/learning divide (multiple on and inside both sides: multiple teachers and multiple students and on both sides, males and females, in any possible

proportions). To remain within Jacques Lacan’s problematic; we can show the transference phenomenon as follows in positive and negative terms (Figure-4).

	Authority Transference > 0	Authority Transference < 0	Nurturer Transference > 0	Nurturer Transference < 0
Subject ++	☺		☺	
Subject +-	☺			☹
Subject -+		☹	☹	
Subject --		☹		☹

Figure 4: Basic Transference phenomena: Authority - Nurturer

But if we add the “love” dimension to this approach we have to discuss the difference between love from the nurturer and love from the authority figure and if both dimensions are shared, we have to take into account what it means for a nurturing father or a nurturing mother and for an authority-father and an authority mother to have these first two dimensions and for both parents to develop the third love dimension in both cases. It is easy to understand Figure 4 would have to be expanded with two more

columns for nurturing love and authority love and if we split every column between father and mother, we would have to enter not six (like in Figure 5) but twelve columns. And anyway, there is no general generic case but there are only particular cases with particular parameters. Since for every column the subject can be positive or negative, we would then have many more cases or particular subjects. Figure 5 is the chart if we keep each role neutral as for the parents carrying them (Figure-5).

	Authority Transference > 0	Authority Transference < 0	Love Transference > 0	Love Transference < 0	Nurturer Transference > 0	Nurturer Transference < 0
Subject +++	☺		☺		☺	
Subject ++-	☺		☺			☹
Subject +-+	☺			☹	☺	
Subject +--	☺			☹		☹
Subject -++		☹	☹		☹	
Subject -+-		☹	☹			☹
Subject --+		☹		☹	☹	
Subject ---		☹		☹		☹

Figure 5: Basic Transference phenomena: Authority - Nurturer- Love

To go back to our main theme the next question is: what is a self-learning procedure?

A certain topic has to be targeted. The various sources of knowledge on this topic have to be identified and accessed. A certain amount of knowledge has to be retrieved and then integrated by the learner. This self-learning process like any learning process has to have a goal, has to aim at a certain use or benefit. It is difficult to be motivated about acquiring certain knowledge if there is no possible future benefit derived from this knowledge, be it only the conscious satisfaction of knowing.

Traditionally the school system (or the family) decided what was proper for the child to learn. Then the knowledge was provided by the teacher or some other source like someone in the family or around the family. The teacher also gave a schedule and various activities to do along that schedule. Finally, the teacher checked the acquisition of the concerned knowledge with various tests. The family could also check the acquisition of the concerned knowledge by some task or activity. The difference between the teacher and the family is that the family expected the learner to be able to do something after acquiring some knowledge, like take care of the family store, or do some task in the fields, or do some shopping for the family, or take care of the younger siblings in the absence of the parents, etc.

This procedure, mainly the traditional school procedure, is today at best surviving and most of the time obsolete and practically dead. As for the family, it might be able to survive in various forms, at least as long as the children remain within the family.

I propose here a completely different procedure that can be summarized in the following five points:

1. To guarantee the motivation of the learner, a topic is chosen conjointly by the teacher and the student. Now, in a class of twenty-five, there have to be various directions and objectives within that collectively chosen topic. If within an English class, the learners in the class choose a subject like Martin Luther King, the various learners will have to follow their own interests and inspirations to approach Martin Luther King. Some students may work in small groups if they want or prefer such a collective approach. This is true of any subject at all. **Self-learning is a door to diversity.**
2. The teacher then is more a coach than a teacher because he is going to advise the learners on where they can find information concerning their particular orientations within the general topic. He will even have to be ready to answer questions and to once again advise the learners on how to assess what they find. This is a very important moment and the teacher will have to really guide the learners among the traps of assessing. It seems true to say that in the present world with Facebook and other social networks of the type, assessing the "truth" or at least the "validity" of some piece of information has become very difficult. And no matter how Facebook and others look into the problem of sorting out fake information from real information, assessing what you get here will remain a real problem because on social networks and altogether on the Internet, you get partial validity

more than total validity and such total validity is a dream, a myth because it changes every single minute with some new information added on any subject whatsoever. **Full validity like truth is a never-reachable goal, even in the hardest sciences you can encounter.**

3. Tasks have been set all along, like exposés from the students to the class about what they found. Or written summaries of what they found that can be corrected by the teacher (and they will have to be in English if this English class is a foreign language class) and then these written summaries could be pinned up on a special board (real material board in the class, or virtual Internet board on some class page, or even on a school's intranet page) with the possibility for other learners to ask questions and to express argument-supported disagreement or possible openings. **Each task must lead to class feedback from all learners.**
4. Then rather than a "test" at the end, the learners could be asked to produce, individually or collectively, in small groups or as a class (difficult over six or seven learners), a synthesis on the topic that would bring together all the various sources concerned and presentations and this synthesis would be open to discussion. Note the "board" where the summaries are pinned, material in the classroom or virtual on the Internet or on the intranet of the school, will raise the question of monitoring this discussion and it will have to be moderated by someone who should be the learners themselves. The objective is to keep trolls out, not the discussion. We are of course dealing here with a virtual page requiring a password and identification to be accessed, only by the concerned students or learners. Note this excludes anonymity. **Virtual public presentation and confrontation require a moderator to avoid sabotaging.**
5. The objective is to help learners develop research, retrieving, discussing and presenting procedures. All along such activities are presented to the class and the "grading" or evaluation can be done by the class itself. Each student can come to the end of the cycle and present their synthetic remarks in five or ten minutes and the class can evaluate this short presentation. An easy way to do that is to give the students a grading sheet: each student writes down the grade he gives each presenting student, with some eventual justification. Then the teacher calculates the average of these "grades" for each presentation and adds his/her own "grade" as equal to this average, or only 25% of the final "grade" or evaluation. The students then represent 50% or 75% of the final "grade," if a "grade" is needed. Otherwise a simple evaluation as "very good," "good," "average," "under-average" can be enough to proceed. A student or group of students must always have the right to appeal such an evaluation. And such an evaluation must also suggest the ways to improve the next presentation. **But evaluating the work of others must lead to self-evaluation and that is particularly difficult.**

The last principle I would like to insist on is clear now. The main objective of any self-learning procedure within a school institution is discussing possible points of view. If the topic is racial discrimination, you have to let the students bring up arguments

for or against this racial discrimination and to make the students discuss these arguments. Teaching is not imposing this or that opinion. Teaching is making learners learn how to discuss opinions and reach a balanced personal view. By balanced I mean it has to integrate arguments from the various sides: a list of arguments against racial discrimination will never bring light to anyone. To really find some light on such a subject you have to balance and counterbalance arguments for and arguments against racial discrimination. I was told once by some school inspector that there were no arguments for racism. I told the inspector that in the class concerned that counted 35% of Muslim Maghrebans mostly from Algeria, we (the teacher and the students) did not have any problem to make a long list of such arguments in favor of racial discrimination and the discussion was about what kind of explanations and counter-arguments could be brought up to balance a point of view on the subject. And even so, there were some expressed or un-expressed personal opinions that were not necessarily balanced.

The Conceptor-Designer of a Self-Learning Unit

The identity and the role of the Conceptor/Designer of a cycle of self-learning work are to be entirely redefined because it cannot correspond to what a teacher used to be.

First, he/she is not supposed to have control over the topics and **the learner or learners (including with a vote if necessary, with a primary short-listing vote if needed) choose the topic of the next batch of work.** The immediate consequence is that the Conceptor-Designer might have no competence in the field chosen by the students or little competence. The Conceptor-Designer will have to get into some research on the theme to be able to cope with it and propose a fully developed batch of work on the topic. In fact, it depends a lot on the learner or learners and their age. It is surprising to see how limited, all in all, some younger learners behaving within their class-group may be. For many reasons, many subjects are out of range for the group and the individuals in the group will not put such subjects forward against the dominant consensus. It is called by some "political correctness," though it is rather "pedagogical correctness" which is essentially ethical or moralistic, at times purely opportunistic, following the trends of the moment and it aims at pushing aside subjects that may disturb or surprise some students (in fact the parents of some students). It is a real and strong limitation to self-learning and motivation: What you teach is not supposed to make waves. In fact, the Conceptor-Designer might meet with a real challenge here and might have to suggest other topics to widen the interest of the group and the individuals: It will be a suggestion and it will have to be endorsed by the group, but such suggestions might be necessary since the learners cannot know the subject they want to study before studying it and thus cannot know what questions can be asked about it. This may also be true with older adult learners who would also be self-limiting their interests to what they think is acceptable, hence politically correct, or sustainable, meaning generating enough energy to last some decent time, which is a time-limited approach of sustainability.

Second, can the **Conceptor-Designer refuse a topic?** That would be the very negation of the project. If a chosen topic is

by far too much out of reach (the only reason why it could be refused) for the Conceptor-Designer the best solution would be to ask the learners, or one or two, rather two than one, learners in the group to help him/her collect some data, documents, etc., on the topic and even eventually suggest some questions they would like to discuss or explore. Within this phase of elaboration, there can be some discussion and modification of the project and its objective. Even if the Conceptor-Designer is competent on the chosen topic, associating one or two learners for the survey of the subject is a good thing and may enable a first mapping of the subject. The procedure to choose these one or two "helpers" or even "assistants" has to come from the class and the one or two students are then collaborators in the Conception-Designing of the topic. Imagine a class of English as a Foreign Language (EFL) and all these opportunities for students to practice their English. We are speaking here of enhanced and increased efficiency, both for exploring the topic and for the learning of English by the students. And be sure such a procedure can be used in any class at all, including Science, Technology, Engineering and Mathematics (STEM) classes, previously known as Science, Math, Engineering and Technology (SMET) classes. I remember a teacher of Applied Audio-Visual Physics who was using a textbook he was the only person to have in his college-level class and he kept this reference secret. That was before the Internet in the early 1990s. That was vain for one and short-sighted for two. Today it would be impossible. The students would get the reference and the book in no time. The working procedure then could be completely different and would lead to richer classes and deeper learning based on self-learning, very American-style: "For next class next week you read chapter X and you prepare all the questions you may think of. I will only answer questions." This is not entirely true since the questions might reveal some elements in the chapter were not understood and the answers will be explanations on such points enabling the teacher to further check if the chapter's matter was properly understood and thus helping the assimilation of the difficult points.

Third, if you want to be in full agreement with the project, **the Conceptor-Designer**, after building up the batch of work, **should submit this batch to the learner or learners** who should have their say. But the objective of their eventual remarks has to be the suggestion or proposal of various approaches the learner or learners may think of. The learner or learners must keep in mind that they are free to add documents that are not included in the batch proposed by the Conceptor-Designer, even if these added documents unbalance the batch itself. The subsequent work will have to rebalance the whole process and its outcome.

Fourth, though the objections "It's too much work!" or "It's too hard!" are unacceptable, it is very useful for the Conceptor-Designer to be careful about the quantity of work and the nature of this work proposed to the learner. If dealing with a group of learners, it is better to propose an array of tasks with various levels (identified or not) for the learners to choose what they want to do. At the same time, it is important that learners really take the challenge and target tasks that are more complex, more complicated and even more difficult than what they are used to, including by giving a couple of points (2 within a range of 20, hence 10%) for those who try to do some more difficult task. This is in compliance with

Vygotsky's approach of what he calls the "Zone of Proximal Development." [16, 22, 11] The proposed tasks have to be within this "proximality" with what the students already know but has to target the development of that already-controlled knowledge. In other words, there must be a connection between the already-known knowledge and the new knowledge. But the objective is "development" which means the tasks have to target such development. So, it must aim at getting the learner to something he/she does not know yet. Drilling on what the learners already know has little effect on the development of their knowledge. Development does not come all by itself, just because the learner is maturing naturally, though Piaget [12] seemed to think so in the reflection on Vygotsky's criticism he gave for the publication of a shortened version of the book *Thought and Language*, by MIT Press in 1962. Note this maturation principle defended by Piaget and some others, at times in the form of "nothing develops if it is not activated from outside" meaning that the development is already programmed in the brain or genetic endowment of the children, cannot be of any use as soon as the learners are adults. They have completed their natural development, though it is only a rather vague idea because all "scientific concepts" (Vygotsky's term) that cannot be learned from the everyday conversation in the street or on underground trains, have been and can only be learned via a voluntary guided procedure in school or in society. Counting, reading and writing are not in any way natural and have to be learned in a way or another by individual learners from outside individual people and circumstances. The stake here is whether the learner will be motivated to learn such "scientific concepts and procedures" like counting for some personal reason or interest, or whether it will be drilled into the learner by some rote-learning procedure. Learning how to multiply a certain group of objects by a certain number instead of adding a certain number of times the afore-mentioned group to itself is probably not interesting as for time and effort when you want to know how many oranges are in the three baskets that all contain twelve oranges. The multiplication (12×3) will not be that interesting since the simple sequence based on an addition (12, 24 and 36) is just as fast and effective as the multiplication. But that will be different if you are confronted with 27 baskets of twelve oranges or the reverse operation of distributing 324 oranges in 27 baskets. And one step further starts with 327 oranges to be distributed in 27 baskets and the task asks for how many oranges will be left. With bigger figures, multiplication and division become very useful. But there is no natural way, not to mention genetic endowment supporting this natural way, to learn such complicated knowledge, concepts and operations. They have to be learned from scratch and from outside.

Fifth, The Conceptor-Designer has to **collect the basic documents** he wants to include in the batch and to devise **the time-schedule** and the **various tasks** spread over this time-schedule. He has to evaluate the necessary time for the various tasks based on the necessary research the learners are going to be confronted to. It is better not to be too tight in that schedule, but at the same time not to be too loose. It is better to add an extra day or week for one particular task if the learners ask for it than to have such a loose schedule that the effort is broken up into moments of work sprinkled over too long a period of time. To cope with the learning

disparity in a group it is better to **encourage the better learners to deliver their tasks early and provide them with an extra-task that will give those extrapoints**. We must not be afraid of grading a student over the maximum grade, even if you use letters. Beyond A++ you can always invent a Z, Z+ and Z++ for the students who are beyond the maximum. If I remember well, I got 106% on a test to get a Fulbright Scholarship a long time ago. It is obvious that my grade might have been integrated into the grading scale afterward, but they did not change the scale straight away, if ever. I have graded students over 20 (in the French system that uses a basic grade scale from 0 to 20) because the concerned students did extra work and extra tasks that gave them extra points in their total for a semester before averaging. The extra points did not increase the basic number of grades. For example, a student could have a total of 180 out of 200 for the ten basic tasks but that student added five extra-tasks that were all graded 17 out of 20, so that the 7 extra points over the average 10 were added five times to 180 bringing that student's total to $180 + 5 \times 7 = 215$. After averaging the student got 21.5 out of 20 (since there were 10 basic tasks for all students, the dividing factor was 10 for all of them). This happens in the French Baccalauréat where some students can take extra optional subjects and the grades over 10 in these extra-subjects are added to their total for the basic tasks and this new total is divided by the number of basic grades so that some students can manage to get an overall grade in their High School Degree that is over the maximum 20, for example, 21.33 for a female student in La Réunion in June 2018's Scientific Baccalauréat. And on the other hand, you have to be lenient with the slower learners and give them reasonable delays that must not slow down the class though. If you have only one learner, this leniency has to be always open but for reasonable reasons based on the professional schedule of the individual professional learner. The CEO student I have spoken of already went, with two other members of his team, to the Consumer Electronics Show (CES 2019, January 8-11 Las Vegas) and his suggestion to start the next triad on January 19 was quite justified.

Sixth, **what kind of documents?** The choice must be absolutely open. All documents available one way or another, on the Internet, free access or not, in a library, or on the market. In my present field which is teaching advanced technical English, the types of documents are documents in print (digitalized or not), videos, all kinds of recorded documents and of course films. If we consider MLK again, available resources are so important that you have to choose and I would advise you to always choose documents that go in two opposite directions, not because you may support those who consider MLK had "plagiarized" some existing documents for his Ph.D. but because that's purely logical in a perspective of "learning," what's more "self-learning." Plagiarism is a very important question today because of the Internet, but it was not that important sixty years ago. And plagiarism has to be defined and I must admit the definition is tricky because you can only plagiarize protected elements, hence the text of a document, not the ideas contained in that document because copyright [2, 3] is attached to the real material form of the document and not its semantic or semi logical elements.

“The only thing we have to fear is fear itself” is a well-known quotation from F.D. Roosevelt’s first inaugural speech [13] and it is no longer protected by copyright since it must have entered the public domain in 2015 (70 years after his death). But it is also obvious that using the sentence today is referring to F.D. Roosevelt and his name has to be quoted since his moral right is eternal. But it is also obvious that J.F. Kennedy’s sentence “Ich bin ein Berliner” is not in the public domain and has to be quoted as J.F. Kennedy’s. It will be in the public domain only in 2033. But if I change it in its form enough to be considered as original, even if it alludes to J.F. Kennedy’s sentence then I am not plagiarizing. I could then invent the sentence: “Wir sind alle von Berlin und werden immer sein” and that would not be plagiarizing, though it would be honest to mention, even in loose terms like “As someone famous has already said,” the fact that it alludes to J.F. Kennedy’s own sentence. According to the Berne Convention on copyright and intellectual property, moral right is permanent, but it is attached to the form of the quoted text, hence only to an exact quotation, even centuries later. Then your own version might not be original, but it is not plagiarism. This question is absolutely crucial in any teaching procedure: The learners have to learn how to identify their quotations with opening and closing quotes and with the proper references to the authors of their quotations, not to mention a normal bibliography or list of references. The Conceptor-Designer has to be an example in that line.

Then the second element here is that there is no limit to quotations. It can even be one word carrying one concept. The origin of this concept has to be identified except if it is a common concept accepted by everyone as part of our referential dictionary. Euclid’s most famous postulate is just referred to as “Euclid’s postulate” though some may refer to it as “the parallel postulate.” The phrase “zone of proximal development” is indeed a quotation from Vygotsky’s published works (in this case an MIT translation of it, [17]. Vygotsky as such has been in the public domain since 2004, but the MIT translation, first published in 1962 is far from being in the public domain for the publisher (only in 2032 for the first edition but the revised editions must have extended the copyright protection for the publisher) and for the editors and translators, Eugenia Hanfmann and Gertrude Vakar, seventy years after the death of the last survivor, hence 2053 since Eugenia Hanfmann died in 1983 and Gertrude Vakar in 1973. But the words ‘zone’, ‘proximal’ and ‘development’ are not in any way quotations. You can use these three words freely but as soon as you bring two or three of them together it is a Vygotskian concept translated into English by Eugenia Hanfmann and Gertrude Vakar and as such, they are protected. Self-learning must be based on honesty: a learner may borrow some concepts and words from someone else but that borrowing should be clearly acknowledged.

Seventh, you will encounter a difficulty (that varies according to the countries) with the **protection of intellectual property** [2, 3]. Some media, for example, CNN, accept full open access to their programs, but most of the media do not or limit access and reproducing an article from a newspaper can be considered “fair use” for pedagogical, didactic or educational uses, but you have to be careful since the concept of fair use is common in the USA with US Copyright that integrates it in the US Code, but it does not apply

to other types of Copyright in some countries (Great Britain for example) or with authors’ rights countries (France for example). This fair use provision was actually refused by WIPO (World Intellectual Property Organization) in their upgrading of the Bern Convention. Fair use may not be accepted in many countries that adhere to the WIPO treaty and have integrated some moral right protection clauses in their intellectual property laws over the last twenty years at the prompting of WIPO itself. Here is the fair use provision in Title 17 of the US Code.

“§107. Limitations on exclusive rights: Fair use

Notwithstanding the provisions of sections 106 and 106A, the fair use of a copyrighted work, including such use by reproduction in copies or phonorecords or by any other means specified by that section, for purposes such as criticism, comment, news reporting, teaching (including multiple copies for classroom use), scholarship, or research, is not an infringement of copyright. In determining whether the use made of a work in any particular case is a fair use the factors to be considered shall include—

- (1) The purpose and character of the use, including whether such use is of a commercial nature or is for nonprofit educational purposes;
- (2) The nature of the copyrighted work;
- (3) The amount and substantiality of the portion used in relation to the copyrighted work as a whole; and
- (4) The effect of the use upon the potential market for or value of the copyrighted work.

The fact that a work is unpublished shall not itself bar a finding of fair use if such finding is made upon consideration of all the above factors.”

It is thus a lot better to only give the title and an Internet link where the students can find the document on their own. As for films (DVDs) they can be streamed on the Internet, either free or for some subscription cost. Amazon Prime provides a lot of films either free or at a very low rental price. But Netflix and some other streaming platforms provide the same low rental possibilities. Among the resources, you can always provide the learners with fully referenced books and eventually where they can be found (library and virtual or material merchants). Be sure that many books that are in the public domain (70 years after the death of all direct copyright holders) are also available on various sites on the Internet, either fully digitalized (proof-read or not after digitalization), either as text you can easily download and then copy and paste, or as pictures or PDF (at times word-processable, at times plain images) that you may have difficulties turning into word-processable text. There exist converters, of course, free or not, on the Internet. PDF is itself providing such a conversion procedure, but not for free.

I will provide you with the skeleton of such a three-month-long batch of work at the end of this article. Now we have seen the possible resources and the major magic word here is variety because we all believe in diversity at all levels of human life, we can consider the tasks the Conceptor-Designer can propose.

Guided Self-Learning Tasks

Before presenting the tasks themselves, it is necessary to discuss the feasibility and sustainability of the tasks, I mean what students can do in the situations they are living in and what will motivate them. Some tasks might be very good and yet would not motivate the students. That type of sustainability is fundamental. The tasks must answer the interest and motivation of the students and what's more provide the students with the interest and motivation necessary to do the task and go on with the process, with the batch of tasks. I have often noted that some tasks – like drilling forms and constructions, in grammar or syntax – are very useful to settle some difficulties but at the same time they are not motivating the learners to go on: drills are good and yet boring and you can be good at drilling this or that construction and yet you can find it difficult to transfer the concerned construction you have successfully drilled into your written production or oral discourse. The latter is even harder than the former. That's another form of transference. The first or dominant language (mostly attached to the structure in which the child has been raised, hence the family first of all) is transferred automatically and unconsciously onto the new foreign language and it produces mistakes that are very difficult to erase.

One particular case is common with bilingual learners. For example, let's consider one adult learner who spoke English as her father's tongue (and the language of her US education) and German as her mother's tongue. When confronted with learning French as a third language from scratch and within a totally French environment, she systematically transferred some German characteristics, like the gender of nouns, into French. German has three genders, masculine, feminine and neuter and the three genders are arbitrary, even for some human or animal items or individuals. French only has two genders, masculine and feminine, that are arbitrary too though not for human and animal genders, though at times the masculine can be used to cover both female and male animals, like "le chien" (the dog) that can generically cover both a male or a female dog and the female is only specified when necessary with "la chienne" (the bitch). Systematically for various objects, it was the German gender that was transferred onto French, like for example "le table" (masculine) instead of "la table" (feminine) on the model of "der Tisch" (masculine) in German. Note it is the French word "table" that passed into English sometime in the 12th century as a neuter noun. That shows how important transference phenomena are. In this particular example, it is the mother's tongue that is transferred onto the third language, though for that person the father's tongue was dominant since it had been the language of her education that lasted some 25 years in the USA.

This is a general problem: Old and already acquired or stabilized knowledge dominates the learning procedure of the learner. That's why the new knowledge has to be integrated by restructuring the knowledge of the learner and that is a lot more difficult to cope with and it requires strong motivation and we can note that knowledge flexibility is becoming more and more frozen with the learner's growing age and it may start very early for some people including children. That's where the guidance from the conceptor-designer –

and down the line from the coach or teacher, the person who will be the intercessor between the batch of tasks and the learners – is most important and the arguments that will be most effective have to be found. I have often encountered with middle-aged people the motivation that comes from the fact that their own children are learning the same things can help them and it represents a challenge in a way. This too is a transference behavior. The parent transfers onto his learning English the fact that his/her own son or daughter are doing the same and that he/she, as the parent, has to show the son or daughter that he/she is able to do it too, or even since he/she is able to do it, it should motivate the son or daughter to do it too. This is some kind of reciprocal transference that builds motivation in both the parent and the son or daughter. I have even encountered a case where, in the same vocational industrial grammar-school class, we had the father and his seventeen-year-old son. We had to move the father to another class because the transference from the father to the son or from the son to the father was blocking the son. With the agreement of the father, we moved him to another class that was actually slightly more difficult, but the father could cope. Note he was over forty years old in a class in which the average age was eighteen.

We could develop this problem a lot more. But let me now present the tasks I have found most interesting, efficient and sustainable as for the motivation of learners. The general idea is to look for tasks that can be considered as common in a professional environment for the student when he will be in a job his present training is supposed to prepare him for. This brings up the idea that training has to be connected to the future professional fields of the students and what's more to the professional experience of older students, either their past experience or their present experience if they are employed in some job for which their present training is supposed to improve their skills. The best case was an over forty-year-old man who was going through a postgraduate one-year vocational course in Intellectual Property because he wanted some promotion in his company and his boss asked him to get that kind of training and qualification for his job as a corporate lawyer to be moved up in agreement with this new profile of his. In the future, due to the impact of robotization and Artificial Intelligence, the professional and vocational profile of all workers will have to be improved or changed every five years or so, maybe even on a more continuous basis. Searching for resources, accessing them, acquiring them and using them under the proper licenses will become a basic permanent requirement in tomorrow's professional environment and the proper licenses are a basic requirement to avoid any kind of intellectual-property lawsuit, including and maybe particularly within open innovation. What kind of tasks can we propose learners that will correspond to the activities of tomorrow's professions? That's a question that should be our main directional orientation.

On the basis of suggested resources and of all resources the learner can find on the topic of the batch of guided self-learning, **the first task is an essay** because in any job any worker will have to present written reports to his colleagues, his hierarchy or some corporate commission or committee. The construction or even architecture of such an essay has to be clearly stated and respected.

A report in any vocational field has to clearly present arguments that can be “made visible” with bullets or numbers. This visibility is very important in any professional environment for fast reading and easy understanding, on top of plain clarity. These arguments are supposed to be both positive and negative so that a real discussion can ensue and a decision can be taken. The essay, like any professional presentation, can come to a conclusion that is positive or negative, but arguments on both sides have to be listed and discussed. That’s the most difficult thing to obtain from learners, especially when advanced in age or professional experience. The trend is among many to think that their opinion is the best and only opinion possible. They often neglect the arguments that go against their conviction. Self-learning learners particularly tend to go one-way. The guidance the learner is supposed to get has to be first of all going towards an open approach of any problem. Note such presentations can be articulated on or around a PowerPoint presentation and here too there is a lot to understand about such a tool because a PowerPoint presentation is a tool. It is not supposed to be the text of the presentation itself. It is supposed to be visual and to include pictures, graphs, etc., that can be used or commented upon in the presentation itself. Too many Power Points in too many conferences are in fact nothing but what the presentator is saying, hence reading.

An extension of this written task is **the use of emails**. It is surprising at times when we find out that students do not know the basic norms of how to present and compose an email: the subject is important and is often neglected or just kept blank, hence overlooked as useless, which is wrong. When someone checks their emails in the morning, they look at the sender of course but also at the subject because it indicates what it is about and the prioritizing of the reading and processing of emails comes from these two elements, sender and subject. One can push aside an email from a well-known and important sender because the subject is not the receiver’s priority right now and on the other hand the subject of an email from an unknown or little-known sender might make this email a priority. But the body of the email has to clearly state who is talking and to whom this person is speaking. Simple things like opening and closing greetings, or the visual presentation like short paragraphs and skipping a line between paragraphs are rarely respected. In the same way, in an essay, you have to add a bibliography and all references must be clearly given in footnotes. I prefer simple lines, but I like skipping a line between paragraphs. I also like tabulation at the beginning of a paragraph. The essay is supposed to be visually attractive with a good font size that makes the reading comfortable. An email can always be increased in size from the keyboard (Control +), but it cannot if the text, the letter is printed, so you have to choose a comfortable font size though too big becomes irritating and two pages can easily become four then and that may look too long to be read straight away, which implies a letter or an email have to remain short, though too short might sound or look condescending or toffee-nosed. It is useful for learners to just get on some sites that give simple indications about how an email has to be constructed and what it is supposed to contain.

“An email includes at least the three following headers: **From**, showing the sender’s email address; **To**, showing the recipient’s

email address; and **Date**, showing the date when the email was sent. It may contain the following optional fields: **Received**, showing various information about the intermediary servers and the date when the message was processed; **Reply-To**, showing a reply address; subject showing the message’s subject; **message-ID**, showing a unique identification for the message; or the message body, containing the message, separated from the header by a line break.”

What I say here is that four elements are fundamental for the receiver: **From**, **To**, **Date** and **Subject** and they have to be visible in the header of the email in your mailbox. This header, when expanded, gives a lot more information, but an email-receiver will rarely open the full header. The header must also clearly indicate the **attachments** if any. These five elements have to be seen at once when receiving emails in your mailbox.

Then there is a debate about the position of the Sender’s address in the body of the email, either at the top like in normal letters or at the bottom, which is the favorite position for many users, so that the email receiver can read the email itself, meaning the body, first and without delay. This final address is automatic on most mailboxes and it can contain a lot of information about the sender, though it is composed by the sender him/herself who must ponder about the image of the sender, i.e. him/herself, he/she wants this address to convey.

If we consider these two written activities as being the two sides of the same coin, **the second activity is recorded presentations** either as simple podcasts or as videos. Such presentations are basic in any professional environment. That type of communication is often the best way to broadcast ideas and suggestions in a corporate environment. Many workers at any level will be confronted with such a form of communication, be it only a five-minute message left on an answering machine. Workers have to be ready to state in five minutes, at times even less, the essential crucial arguments and the suggestion of a choice that has to be discussed first and then made. Of course, it also means that anyone has to be able to receive such podcasts or videos. In such short recorded presentations, the bullets or numbers must be very clearly indicated with words like “first..., second..., third..., etc.” in an oral only message, or a visual chart on a whiteboard or on a flashcard that has numbers or bullets or letters to present and summarize the main arguments or points with one or two words on an audiovisual message. The use of color is also essential to really see the arguments. Note with a recorded video, the receiver can freeze one image to get a closer look at the graph or flashcard. With a podcast, this numbered or bulleted presentation is important to go back and listen to the arguments a second time.

This leads to the next stage which is **serious and systematic work on the telephone**, be it with images (Skype) or without. Both have to be considered. And such telephone sessions have to be of some length because they have to be real discussions, starting most of the time with a short presentation from the learner and then systematic – and I will insist on this word – questioning and discussing of the topic of the phone call and what the learner has said. The targets of such long telephone discussions are simple. First, without images, the oral language of the learner has to be

used to make any argument concrete and clear. On the telephone you cannot point at something, use deictic determiners like “this” and “that” referring to an object in front of the speaker and that the interlocutor cannot see. The architecture of what is being said on the telephone has to be very clear not with bullets but with numbers in the simplest form like “first..., second..., third..., etc.” or using letters like “a..., b..., c..., etc.” or numbers like “One..., two..., three..., etc.” It is all the more important because the listener (and both interlocutors are alternating listeners now and then, as much as they are alternating speakers) cannot freeze an image or cannot go back on the recording since it is not recorded, though it should also be a common initiative to record your phone calls so that you can go back to them and listen to them again. But in this case, there are many regulations in the world that require the two sides to clearly know that they are being recorded: it cannot be done without the agreement of each interlocutor and one recording is enough provided the recording then is sent to the person who did not record the phone call. This simple method to present arguments and ideas is difficult to get from many learners. They have to be guided into such clear presentations.

When dealing with foreign languages, **short translations** [5] from one language to the other and vice versa from the other language to the first one can be useful, especially if the worker is going to work within a bilingual environment where he or she will have to shift from one language to the other. This is more and more common in modern companies, though the mixing of the two languages might create some ambiguous situations when one word in one language has a different meaning as compared to the meaning of the word in the other language that looks like the one in the first language. If you consider English as compared to the two languages from which it is derived, French and German, we have interesting false cognates between words that are historically connected. Thus “a library” in English is not “unelibrarie” in French. “A library” is “une bibliothèque” and more and more “une médiathèque” in French, whereas “unelibrarie” in French is “a bookstore” or “a bookshop” in English. Note the various nouns in French are feminine as opposed to neuter nouns in English. If we consider the case of English and German false cognates, one is “the rent” in English that has little to do with “die Rente” in German since “the rent” would be “die Miete” in German and “die Rente” in German would be “the pension” (for retired people) in English. Note the feminine gender of both German words as opposed to two neuter nouns in English. The only common point between the German and English terms is that both are paid on a monthly basis, most of the time. That’s the main interest of such short translations: to disambiguate false cognates within a full sentence-context so that the difference is not lost in translation but duly memorized and then remembered. It also helps to set some correspondences in technical fields. Think for example of the French terms “le CO₂” or “le gaz carbonique” and the English corresponding terms “carbon dioxide” opposed to “carbon monoxide” that would normally be “le CO” in French, though terms like “le monoxyde de carbone” and “le dioxyde de carbone” exist in French but are not of common use, except in chemistry, but certainly not in climatology or environmental protection for every ordinary citizen. I used the masculine article in French because these terms require such

articles and are masculine, whereas in English these terms being compact matter nouns do not require an article and are neuter. Translations are also good to clarify and specify such details.

We should also think here of acronyms that can be very tricky. Think of WIPO (World Intellectual Property Organization) I have already used and its French corresponding acronym OMPI (Organisation Mondiale de la Propriété Intellectuelle) and the German Acronym WIPO normally used for Weltorganisation für geistiges Eigentum, though it is not its acronym. Note the difference in pronunciation in English with a diphthong on the first syllable and in German without the diphthong and the possible reading of ‘w’ as a simple ‘v’ the way it is normally pronounced in German. Note in the same line the spelling of ‘Komputer’ in German with a capital ‘K’, like all nouns for the capital letter, as compared to the English ‘computer’. Note the French never use the English word ‘computer’, though they may use some English terms but with a French pronunciation like ‘iPad’ and ‘iPod’ with no diphthong on the initial ‘i’. We are dealing here with commonly used terms in professional English, French or German. There is a lot to do at this simple level. I would advise learners to build up a lexicon with these terms in the various languages they encounter. The misuse or misunderstanding of a technical term in a high-risk situation like air traffic or rail transportation can be drastically dangerous.

But I would like to insist on two tasks that seem to be very useful and are for me the most effective because they are the tasks that are closest to total immersion.

The first one is **one-on-ones** on the topic at hand. Such one-on-ones can vary from a minimum of twenty minutes to a long session of several hours (two to four according to the learners). A **short twenty-minute one-on-one** can be on one question connected to the topic that the learner will present in five to ten minutes with a discussion afterward. Or it can be on a free subject chosen by the learner who has to accept the teacher will have the right to ask any question just like in real life. Some learners then either are cautious and choose subjects that will not reveal anything personal, or some are provocative and choose topics that will lead to personal questions because (transference again) they want to be asked the questions that are personal, they want to show something that is personal for them. We have to accept diversity and thus the teacher is quite justified to ask the “private” questions that come with the topic chosen by the learner. When a male student chooses to speak on a sexual orientation subject, meaning here gay, the teacher is quite justified to ask a question about the student’s sexual orientation without any antagonism because it is normal to be gay if you want to be gay and the learner has the right to answer what he wants or to even say he prefers not to answer the question, which is an answer of sorts. A short one-on-one can be very personal if the student decides to get onto a personal topic or to speak in the first person as if the topic concerned him. One-on-ones may reveal many surprises. But avoid assuming anything. It’s better to ask a question than to assume. A student from Turkey might speak Turkish and/or Kurdish and in the latter case, he/she may be Kurdish, hence a Turkish Kurd. A Muslim may be Sunni or Shia and even from some other particular minority affiliations. Many Palestinians are Christians and there are many Christian Egyptians.

If you ask the question with real curiosity and interest you will get the proper answer and no hostility at all. I have had many students who spoke of Israel a lot and I have often asked them if they were Jews. They generally answer the question and it brings clarity, not hostility and the discussion with a Jewish student who criticizes Israel will be quite different from that with a Muslim student who criticizes Israel. But both discussions have to be honest and frank to avoid any hostility. I have come across some Jewish students who tell me they are Jews from the start and on their own. That's a sign of trust and that's how it has to be taken anyway. And a gay student who tells his teacher he is gay is not trying to court the teacher if the teacher is a man. He just wants the teacher to know and he trusts the teacher with this personal information.

Longer one-on-ones are of a different nature. One topic can be kept for thirty or forty-five minutes. So, a longer one-on-one will have to have two three or four topics according to the length of the session. There can be a general topic but then there are several sub-topics. It is always a good thing to keep one sub-topic open for the learner to choose the question he/she would like to discuss. But it is also very interesting to keep one sub-topic for a film or a podcast. Films are rather popular with learners especially if the film is chosen by or with the learner him/herself. Films can lead to very interesting discussions on the content, the technique, the actors, the characters, or the connection with real life. We can even ask the student to concentrate on some sections of the film or we can watch together one short section to analyze it in detail. Some students are very capable to understand symbols in films and thus the films' symbolic dimensions. Some others are not and it is interesting to show them those symbols and how they structure the film. One of the best examples I know is the opening section (about 12 minutes) of Fritz Lang's *Metropolis* that uses various levels, underground and over-ground and various numbers to project "Marxist" or/and "Biblical" symbolism into the film. I have often found that students (and I used that film only with post-graduate students) only saw the numerical symbols, that are basic in this opening section when they were shown to them. Such one-on-one sessions are important because in any professional career, trips to foreign countries are part of the profile of many workers and they will have hours of non-professional contact with other people and they will have to entertain a conversation. One student in her post-training professional position had to carry out interviews in English on the telephone with international applicants for jobs. The first interview was always on the telephone and in English with the candidates. She was able to do it because I had trained her on such tasks: more or less free discussions on the telephone.

One task is particularly important. I call it a **telephone week**. It will be five telephone sessions of about 45 minutes each over five days, Monday to Friday. The first one will be on a document chosen by the learner and sent to the teacher at most one day before the telephone call. The second will be on a document sent by the teacher to the learner either continuing on the topic chosen by the

learner with the first document or changing the topic. The third one will be on a document chosen by the learner, the fourth one by the teacher and the last one by the learner, with the possibility to change the topic with every document. The interests are the length of the telephone calls, then the reactivity of the student on his own documents, which is not that complicated since they are chosen by him, but also on the documents chosen by the teacher (two out of five) that can be disruptive as for the discussion the student had started. This type of disruption is important because in real life that's what workers will have to face both in their professional and everyday social environments. I insist on carrying this task out on a telephone without any visual dimension because it is very difficult to speak of anything in such conditions. Your language has to be very precise. The first time I saw this activity in a Chamber of Commerce class of English, the learner had the map of an office and the various pieces of furniture he had to position in the office. And then after the telephone call, the student and the teacher could compare their maps with the furniture in it the way they expressed or understood it in the phone call. The phone call was, of course, a discussion and the office had windows and doors. If you want to push it slightly further, you can record the conversation and then compare the two maps and the conversation. You can see at once it is also difficult for the teacher.

The last point I would like to put forward is the triadic pattern of such a guided-self-learning procedure.

Guided Self Learning Is a Triadic Situation

Let me start with a graph (Figure 6). On the left, you have the Conceptor-Designer who works on a batch of resources and tasks on a topic chosen by or with the Learner or Learners. In the center, you have the Learner him/herself and the Internet at his or her disposal. And on the right, you have the real world and what it requires from the Learner and the Coach who will be the Counterpart, the Partner or the Doppelgänger of the Learner. In other words, the didactic world on the left, the self-learning individual in the center and the professional world on the right. The Conceptor-Designer considers the professional demands to devise the batch of work. But the Coach-Counterpart-Partner-Doppelgänger on the right does not devise the batch of work but must make sure what the Learner produces prepares him for his professional work or future. This last character is on the side of the professional world, he is like an intercessor in a way.

Note here it is a mistake to consider professional training as having to be separated from the corporate professional world. In fact, it has to be in direct connection with it and this connection will increase the motivation of the Learner because sooner or later the Learner will have to be in a professional position that will require him/her to do things this way rather than that way. He/she'd better be prepared for that. Let me specify the numbers that are attached to the various connections in the graph. (Figure-6).

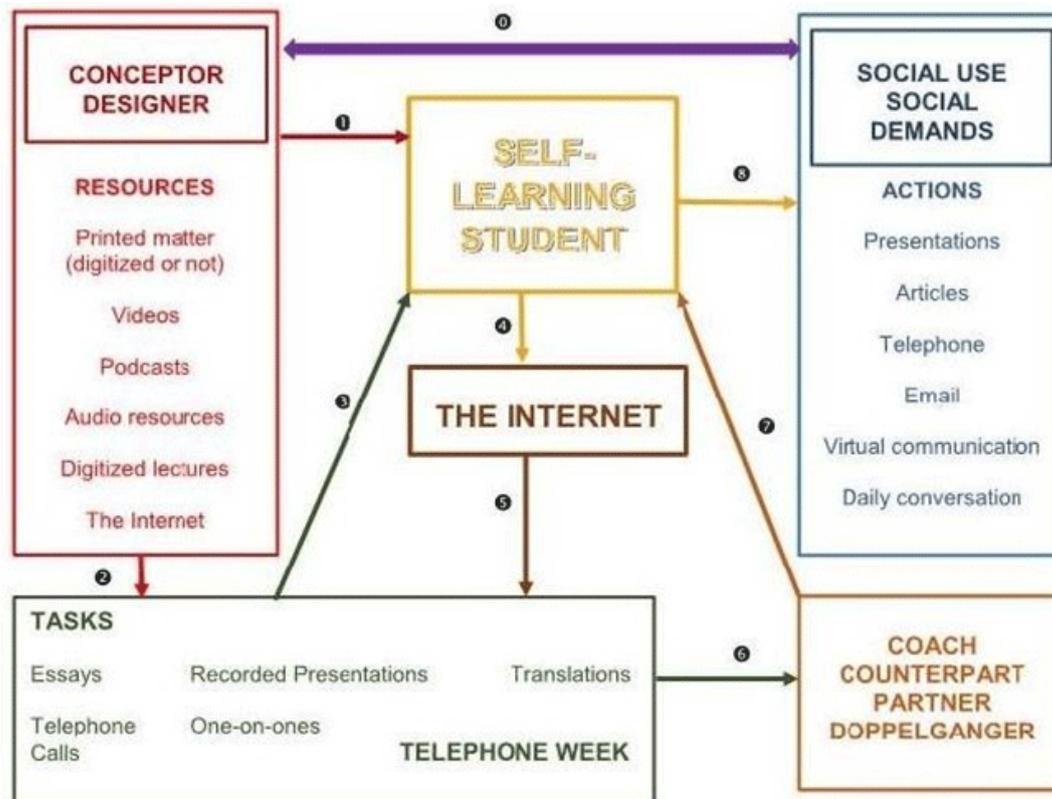


Figure 6: Guided Self Learning Tradic Solution

0 = the constant relation between the Conceptor-Designer and the social and professional world in which the Learner is navigating.

1 = the constant relation between the Conceptor-Designer and the Self-Learner, constant because such self-learning procedures have to be customized to the Self-Learner's needs and desires.

2 = the direct connection between the resources selected by the Conceptor-Designer and the tasks he/she is going to propose to the Self-Learner, keeping in mind the professional perspective of this Self-Learner.

3 = the tasks are delivered to the Self-Learner along with the resources suggested by the Conceptor-Designer.

4 = the Self-Learner gets on the Internet to widen his resources and his knowledge on the topic in general and on the particular tasks, including dictionaries, pronunciation sites, grammar sites and many other purely ancillary resources.

5 = the Self-Learner on the basis of his Internet resources can then consider the various tasks and start working on them.

6 = the various tasks are delivered to the Coach-Counterpart-Partner-Doppelganger.

7 = the Coach-Counterpart-Partner-Doppelganger delivers the tasks back to the Self-Learner with his/her corrections or

suggestions. The corrections are on elements that are wrong (in English as a Foreign Language teaching, these corrections are mostly dealing with the language but also with false information or data) and the suggestions are resources that could widen the approach of the Self-Learner.

8 = the relationship between the Self-Learner and the real professional and social world in which he/she positioned him/herself has to be constant. The Self-Learner has to always wonder what use what he is learning will have in his professional and social world. This is fundamental for the Self-Learner's motivation. That assumes his/her motivation is basically determined and built on the basis of his/her integration in the social and professional environment of his/hers. That's where transference phenomena can either dynamize or blocks the motivation necessary to self-learn (Figure-7)

But the main new element in this chart is the Internet. In the next chart (Figure 7) the Internet is seen as a global tool at the sole disposal of the subject. His/her role is completely transformed by this apparently total autonomy and authority over his/her search for and dealing with information requested by his/her own desires and needs. By becoming the main actor in his/her search for information he/she also becomes what I call an Agent-Retro-Searcher since no matter what information he/she gets in his/her search it will automatically motivate his/her

search for more information and thus he/she will always go back to the search-engine he/she is using and that search engine will always propose him/her more extensions and expansions of his/her initial search. We must keep in mind that search engines are Boolean machines [1], both for the searcher and for the machine itself, hence for retrieving information (for the searcher) and proposing further searches (for the machine). This user of the Internet is an agent since he/she believes he/she has the initiative

in his/her search. But he/she always goes back to it, to what he/she has done, requested and how he/she has requested it and thus he/she is retrospectively looking at his/her own search and how it has progressed to eventually modify it. And of course, he/she is a searcher, he/she is searching the Internet for the information he/she wants to find. This is often compared to mining and some even go as far as comparing it to gold-mining: one nugget of information in a mountain of data.

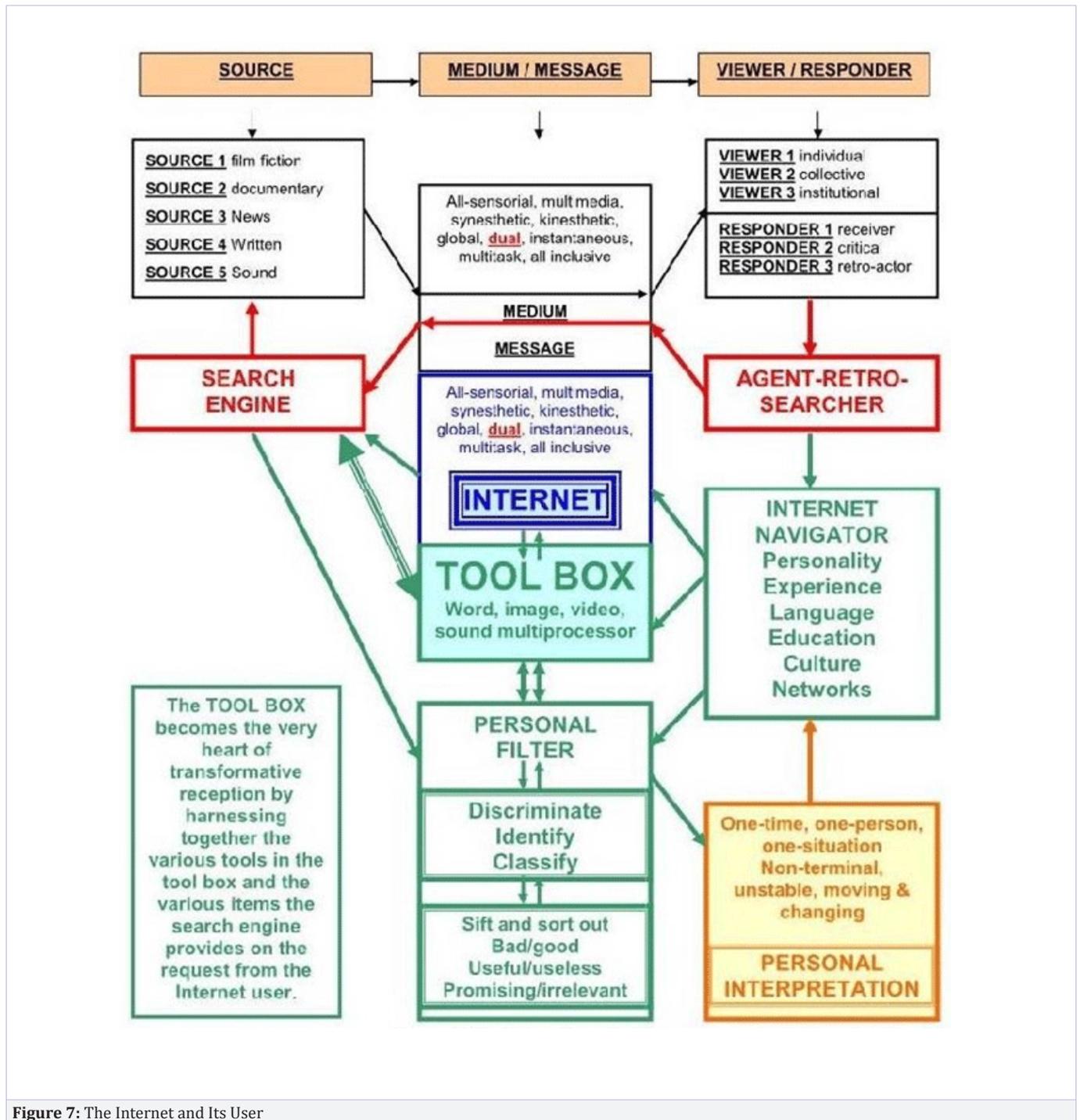


Figure 7: The Internet and Its User

In the world, Google is first with 74.54% of all searches in 2017 and Chinese Baidu is second with 14.69% of all searches in 2017. But then you have to consider this Agent-Retro-Searcher as an Internet navigator and on the Internet, many parameters have to be taken into account and the most important ones are personality and Internet-literacy the latter implying the language used by this navigator and here English becomes essential. At the same time since Google is a Boolean search engine, the navigator has to follow such a procedure or method. If the navigator just puts search word haphazardly in the Google search box, the results will and/or may be haphazard and not that interesting. If the navigator uses a Boolean tactic, he will soon be able to track the most interesting information he is looking for.

Yet Google is in a way cheating, though it is openly doing so, by putting at the top of its first page of results sites that have paid for being favored in any search. Once again, Internet literacy is needed on the side of the navigator. If the subject's navigating persona is good and very Internet-literate the results will be also good. It is obvious that most Learners, no matter what age they may be, at least try to use this Boolean code that is behind the screen, though very young users might be at an increased disadvantage and yet some may say that older users (senior citizens, or third-age people) might actually be at a maximum disadvantage after a certain age. It is a repeated idea, that some assert as an "absolute truth," that beyond a certain age, let's say 60 or 65, individuals are not able to navigate the Internet creatively and thus effectively, because you have to be very creative to follow a Boolean procedure and to by-pass the various commercial traps set under your feet by Google itself, no matter what their CEO may say to Congressional committees denying such commercial dealings favoring those who pay to be favored. This Agent-Retro-Searcher will have to process his findings in three steps: discriminate what is pertinent for his search, then identify the elements he needs to fulfill his task and reach his target and finally classify these elements in a scaling procedure: from most to least interesting and/or useful. And even so, all along the Agent-Retro-Searcher will have to decide on what is good or what is bad to reach his target which is to get the information enabling him/her to build knowledge on one particular topic and fulfill tasks attached to this topic.

To specify some more that kind of procedure, we have to define what Boolean logic means. It is a branch of algebra devised by George Boole in 1856. It is based on five principles:

- **x AND y** - returns True if both x and y are true; returns False if either x or y are false.
- **x OR y** - returns True if either x or y, or both x and y are true; returns False only if x and y are both false.
- **x XOR y** - returns True if only x or y is true; returns False if x and y are both true or both false.
- **NOT x** - returns True if x is false (or null); returns False if x is true.
- **NOT y** - returns True if y is false (or null); returns False if y is true.

et Google is in a way cheating, though it is openly doing so, by putting at the top of it

The main application of this algebra for an Internet navigator is to start with one word in the search box and then progressively add a comma and a new word. The results will progressively be reduced to apply the words to your search in the particular order you entered the words.

But be careful. Google can cross out one of the words you entered and at times with no real justification. It will tell you about it and you can confirm the word they crossed out. Google may decide to change the spelling of your words and once again if you want this or that spelling to be kept you will have to confirm it. These two examples confirm that the Agent-Retro-Searcher is not – at least not completely – the boss on board and is at times the baby on board. That means you have to be very careful. Google is a big machine that manipulates your searches and their commercial or "ideological" interests have precedence on the user's needs, desires or interests. I listened to some excerpts of Google CEO Sundai Pichar's testimony to the House of Representatives Judiciary Committee on Tuesday, December 11, 2018, and the least we can say is that he confirmed the commercial orientation of Google and this is in a way rather bothering. Google is not a public service at all and their commercial and corporate interests come first. The users have to keep this in mind.

If you understand this, then you can be the "master of your searches" within the limits imposed by Google. The main bothering limit is that for some commercial reasons Google will scale some information if not out, at least down to the last page of answers and at times there can be many pages answering your search. I generally suggest to consider the first or second pages only, to be very dubious about the top of the first page which only shows answers that have paid to be at the top and I generally add the following warning that is a precaution to avoid traps: "Try to cross the first results of the first search with a second search that will change the order of the words used in the search box and then compare the results." And that will never excuse you from interpreting the results and this interpretation will have to do with your scaling the results according to the importance you attribute to the various elements you have found. That means the Learner comes up at the end with a presentation that has to be his and thus based on his own interpretations (and he might come to a couple or more) of the facts or information he has found. And the Learner has to stand up to his presentation and be ready to defend it, just as much as the Coach-Counterpart-Partner-Doppelganger must be ready to discuss it with antagonistic facts or different logical ways to build the reasoning based on the same facts: the result depends on the method used to analyze facts as much as on the facts themselves.

This implies this presentation is what it is: a presentation to be performed in a way or another on one medium or another in front of an audience who should be the Coach, trainer or teacher AND the whole class, with the possibility for this whole class – and the Coach, trainer or teacher – to ask questions, object on some points, request more explanation, put forward contradictory information, so that the Learner may improve his/her presentation by including

what the discussion has brought up, either as a simple addendum covering the discussion or as a rewriting of some sections of his/her work to integrate some of the information the discussion has brought up or some information his/her further research may bring up. We really touch here the most difficult part of this didactic procedure: the guidance of a Learner in his/her learning by the Trainer-Coach-Teacher and – this “and” is fundamental – his/her fellow Learners. This kind of guidance should definitely lead to increased motivation on the side of the Learner who has to defend his/her work and his/her findings. If the teaching subject of the class is English, such a procedure is obviously extremely effective for both the Learner presenting his/her work and for the class discussing the presentation. That generally transforms a passive class into a more active class, a passive learning procedure into a more active and motivated learning procedure.

If you wanted to integrate this second chart (Figure 7) of the Internet Mosaic Communication and interpretation into the previous chart (Figure 6) of the Guided Self-Learning triadic situation you would have to replace “The Internet” in this latter chart (Guided Self-Learning triadic situation) with the whole former chart (The Internet and its User). The simple challenge this represents shows how complex guided self-learning becomes with the Internet in the learning landscape. You then confront this with Vygotsky’s Zone of Proximal Knowledge and you can understand the challenge the Internet, Google Boolean processing and the Learner’s possibility (both opportunity and ability) to navigate “freely” over the whole (or at least an extremely vast section of the) knowledge of humanity are bringing into the pedagogical and didactic landscape. We also know at once the main limit: the languages of this knowledge. You can at best fluently control three or maybe four languages. Beyond you may have a good literacy in some more languages but the people reaching fluency in six, seven or more languages are extremely limited in number.

It is now high time to give you an example of such a batch of guided self-learning work.

A Top-Level Batch of Guided Self-Learning In English

The Learner is a young man who has completed his studies in pharmacy, has practiced this pharmaceutical profession for several years in Paris hospitals and has then decided to move into the field of connected objects dealing with health. After some time working for one international start-up in connected objects, he moved into his own project of a start-up dealing with Artificial Intelligence and chat bots (that do not speak orally yet for the time being) applied to breast cancer patients in order to follow them, their treatment, their medical appointments and their daily symptoms to eventually either pacify their anguish or send an alert to some medical service following the particular patient. At the present moment pacemakers are for instance connected and some AI robot of some kind is following the information sent by the pacemaker of a patient and this AI robot can send an alert first to the medical service that follows the patient and then to the patient if the human side of the medical service confirms the necessary alert. We are dealing here with something that is so vast and growing so fast that

we cannot even imagine the transformation of our world with such machines and procedures. But one point is important here though I will not enter a detailed discussion. These AI machines are able to interact with the patients in their first language, which means these machines have sufficient control over this first language, which is a challenge for linguists: what can this AI-control over language be? And what about when this AI-machine and/or its users use several languages?

But I would like to just present the last batch of work proposed and completed in December 2018 by this CEO-student who travels to the USA and in Europe, eventually took to other continents like Africa or Asia, to promote and develop his product and also to train young people here and there into starting their own creative businesses in the field of AI and connected technology. English is the language he needs, but not only the technical English of his field that he actually knows quite well since he is constantly reading and eventually writing in this field. I have “Coached” him for some of his presentations, live (in conferences) or virtual (on various Internet sites), but my principle is always the same: “Do not do it in the Learner’s place. Make him do it first and then come behind and Coach him, eventually correct this or that detail.” Yet his most important need is colloquial and conversational English for daily exchanges in international conferences or events, including of course connections and contacts outside the conference or convention center.

The batch I am going to present here is the 17th batch (check figures 8-13 that contain the documents, the tasks and the various resources). Each batch, called a triad, contains three basic sub-units and the whole batch can last three to four months. The subject is always chosen by the student, though it is also the result of our continuous contact and this contact brings the student to the point of suggesting a topic that interests him but also a topic that can be of interest to the Coach-Trainer-Teacher who is the Conceptor-Designer in this case. At his level, the Coach-Trainer-Teacher has to be advanced in research to be able to satisfy the curiosity and the interest of the student, but also to go as fast as possible researching the topic to devise a batch of work that will last three to four months. The topics are of course general and have little to do with his direct technical activities, except when the coaching is specific for one particular professional presentation here or there. The last remark I would like to make here is that most students at this level are not what we call “linguists,” which means they cannot learn a language in two weeks and they have a handicap which is the fact that their first language remains dominant and some mistakes guided by this first language are recurring regularly. Some of them are tiny and do not prevent comprehension, hence communication. Some can be more serious and modify the produced meaning that then does not correspond to the student’s intention.

The subject the Student had chosen was the Maya, not the language but the people and their civilization. I could enter such a field because I am a linguist and I have been working on Maya language and culture for quite some time. It required some more research, but this extra research entered my own long-term research. So, I could follow the student on this ice that may be very thin and brittle for most people. The student himself started with

some pre-conceived ideas that were slightly incorrect and I tried to introduce documents and topics of discussion that could make him think a second time about the “cruelty” of the Maya. But here is the “Seventeenth Triad” proposed to the student. I use the word triad because it has three “slices” and the word triad is a common word in English with the meaning in Welsh culture and in Celtic culture, of a group of three characters, three elements or stories developing in three sections and these triad sare very common in the old traditional Medieval or even pre-Medieval culture before the arrival of the Normans in England. For the full triad, check figures 8-13 that contain the documents, the tasks and the various resources.

The first slice (Figure 8) of the triad concentrated on the Calendars, particularly the Tzolck’ in Calendar that only counts 20 basic days in thirteen successive groups, hence 260 days and these days are numbered with the cyclical sequence of 1 to 13. Hence thirteen groups of twenty days crossed by the numbering of twenty successive sequences of 13. The second calendar is the Haab of 360 days organized in eighteen months of twenty days, the same twenty days as before, plus five extra days, the Wayeb, to reach the solar year of 365 days. The long count, the historical calendar is based on the 360-day year and thus loses 5¼ days every cycle on the real solar year. That long count is organized in successive vigesimal groups of twenty basic units beyond the tun of 360 days: k’atuns counting twenty tuns, then bak’tuns counting twenty k’atuns, hence 400 tuns, hence 144,000 days (394.25 solar years, hence a deficit of 5.75 years) (Figure -8).

VIRTUAL TRAINING TRIAD SEVENTEEN		
I./ SCHEDULE:		
Virtual Training Triad SEVENTEEN Sent on Sunday, May 27, 2018		
TYPE	TASK	DATE-MEDIUM or PLACE
	You have to choose some books among the extra resources, if possible three of the same type (Maya, Inca, Aztec Culture for instance) for comparison. I would also suggest The Maya (Ninth edition) (Ancient Peoples and Places) by Michael D. Coe (Author), Stephen D. Houston (Author) to be the basis of our reflection	
FIRST SLICE –		
DOCUMENT 4 th + 8 th DOCUMENT		
Telephone Session, <u>two</u> hours, or One-on-One, four hours.	THE CALENDARS (this is rather easy and universal) a- the three calendars and Long Count b- Why such a complex system? c- How long did or would it take to devise it and the mathematics involved with it (vigesimal basis)? d- Cosmology, objectives, motivations?	June 17 If one-on-one it will be billed separately
Written Essay	Calendars require a fair level of reckoning and mathematics. Why do all calendars in the world have some numerical elements that seem to be universal? The French Revolution and the Soviet Revolution tried to change the calendar and drop the seven-day week, or the traditional names of months and days. It failed. What is the mystic or cultural value of the calendar (week, months, season, etc.)? “tzolk’in” 20x13; “haab” [(18x20) + 5]; long count: “K’in” (1 day), “winal” (20 k’ins), “tun” (18 winals = 360 k’ins), “k’atun” (20 tuns = 7,200 k’ins), “bak’tun” (20 k’atuns = 144,000 k’ins).	June 23

Figure 8: Triad 17, First Slice

The second slice (Figure 9) concentrates on the economy and first of all agriculture. The emphasis is on the “development” of a species (modern maize) that is unsustainable since it cannot resow itself by itself and requires man’s hand to do so, as compared to the wild species that can do it all by themselves by scattering the seeds when ripe. You have to add to this development the fact that the maize seeds have to be cooked with ashes to be edible for human beings. And on this agricultural line, we have to take into account the slash-and-burn practice that does not consider the

rotation of crops, the use of natural animal or human fertilizer, the difficult use of irrigation and drainage and the total lack of draught-animals, in fact, domesticated animals that could be used for transportation and plowing. Even the use of built terraces on slopes is not really generalized. That has consequences on society since maize meant better food and an expanding population and yet archaic agricultural practices limited the resources, which led to overpopulation, which had to be managed by social and religious authorities (Figure-9).

SECOND SLICE –		
1 st DOCUMENT + 2 nd DOCUMENT + 3 rd DOCUMENT + Research & books		
Telephone Session, <u>two</u> hours, or One-on-One, four hours	SOCIETY AND ECONOMY (this requires some reading and research) Agriculture: the various crops and particularly maize (Indian corn) that is a cultivated plant that cannot reproduce itself as opposed to its mainly Meso-American wild ancestors. Social hierarchy based on some Theocratic principle: the cult of blood. Political system. What do we know about its legitimacy and organization?	July 21 If one-on-one it will be billed separately
Written Essay	Southern and Meso-Americans invented two things cut off, as they were, from the rest of the whole world: their writing system and the cultivation of maize and other plants on the basis of strict selection and manipulation of wild species. Why did humanity as a whole develop agriculture and herding between 12,000 and 5,000 BCE? Why did humanity invent writing between 6,000 and 2,000 BCE?	July 13

Figure 9: Triad 17, Second Slice

The third slice (Figure 10) centers on the Popol Vuh and the mythology or religion of the Mayas and the importance of self-sacrifice and human sacrifice in this society. This could lead to more general considerations since some patterns or motifs in this Popol Vuh are similar to those in many other mythologies in the world, which brings the idea that there may be some relations or connections between these mythologies, either direct or generic, but which ones and how. At the same time considering these

traditional religions brings up a question in our modern world about the utility of such religions and how they are used and the hypothesis that Artificial Intelligence will push all religions out. Some may think it is a dream to imagine the end of all religions or religious beliefs, but it is a question that can be debated (Figure-10).

A vast selection of necessary resources available in a way or another was listed at the end of the Triad 17 File as follows (Figures- 11, 12 & 13).

THIRD SLICE –		
Essentially Research and Books		
Telephone Session, <u>two</u> hours, or One-on-One, four hours	POPOL VUH AND RELIGION (this requires a lot of research and particularly the book by Michael D. Coe and Stephen D Houston, along with the Popol Vuh) All religions have sacred books encompassing several subjects: the "creation" of the world; the relation between life and death; the rules governing society and the world; daily "suffering" versus salvation, in this life and in another "life"; the existence of a transcending force, be it divine or mental and spiritual; etc. Why does humanity need a sacred (and science is sacred today) version of how the universe came into existence? Why does humanity need to find some solace in death, after death, beyond death? Why does humanity have to invent some way to cope with suffering and very often by imposing suffering to others, at times to oneself? Why does humanity need to abide by a transcending principle that is seen as being by far larger and more powerful than humanity itself?	September 15 If one-on-one it will be billed separately
Written Essay	Can modern science, modern technology, and AI push away God, religion and any concept of transcendence?	September 8
EXTRA RESOURCE S	See those at the end of the present Triad + http://www.mesoweb.com/publications/Christenson/PopolVuh.pdf POPOL VUH Sacred Book of the Quiché Maya People Translation and Commentary by Allen J. Christenson 2007. Electronic version of original 2003 publication. There exist electronic versions including Kindle.	All along
Telephone weeks	I suggest three as usual and to set them when possible. They will be billed separately	June 25-29 July 23-27 September 17-21

Figure 10: Triad 17, Third Slice

II./ DOCUMENTS
FIRST DOCUMENT
Sutori. Ancient Civilizations
<https://www.sutori.com/story/aztec-inca-maya--mD55p7qumfe14PpZVvE2kgK1> **Aztec, Inca, Maya**

SECOND DOCUMENT
Sutori. Ancient Civilizations
<https://www.sutori.com/story/10-minute-task-the-spanish-conquest-of-the-aztecs-and-incas--xSeg58FBFz68G7nVNDpcvfKn> **10 Minute Task: The Spanish Conquest of the Aztecs and Incas**

THIRD DOCUMENT
<http://mayaincaaztec.com/> **Compare and Contrast the Maya, Inca, and Aztec Cultures**

FOURTH DOCUMENT
The Calendar System <https://maya.nmai.si.edu/calendar/calendar-system>

FIFTH DOCUMENT
How Does the Mayan Calendar Work? <https://www.timeanddate.com/calendar/mayan.html>

SIXTH DOCUMENT
The Mayan Calendar <https://www.historyonthenet.com/the-mayan-calendar>

SEVENTH DOCUMENT
The Real Deal: How the Mayan Calendar Works By Stephanie Pappas, Live Science Contributor | December 19, 2012, 06:55 am ET <https://www.livescience.com/25662-how-mayan-calendar-works.html>

EIGHTH DOCUMENT
The Maya Calendar Explained (KS2) Posted 31/12/2016
<http://mayaarchaeologist.co.uk/index.php/2016/12/31/maya-calendar-system/>

NINTH DOCUMENT
21 MAY, 2018 - 19:12 DR MASSIMO BONASORTE
Was Tiahuanaco the Seat of the Mightiest Ancient Civilization in the Americas?
<https://www.ancient-origins.net/ancient-places-americas/tiahuanaco-ancient-civilization-americas-0010081>

TENTH DOCUMENT
22 MAY, 2018 - 19:01 HUGH NEWMAN
New Discoveries at Tiwanaku & Puma Punku: The Lost Statue of Viracocha and Secret Rooms of Hidden Artifacts
<https://www.ancient-origins.net/news-history-archaeology-latest-historical-news/new-discoveries-tiwanaku-puma-punku-lost-statue-021912>

Figure 11: Triad 17, Basic Resources

EXTRA RESOURCES

Spotlight on the Maya, Aztec, and Inca Civilizations. Series as shown on Amazon.com. I would suggest picking the books you want in that series.

Ancient Inca Culture (Spotlight on the Maya, Aztec, and Inca Civilizations) Aug 15, 2016 by Kristen Rajczak Nelson Paperback \$11.75⁵ 11

The Ancient Aztec Economy (Spotlight on the Maya, Aztec, and Inca Civilizations) Aug 15, 2016 by Barbara M Linde Paperback \$11.75⁵ 11

Ancient Maya Culture (Spotlight on the Maya, Aztec, and Inca Civilizations) Aug 15, 2016 by Christine Honders Paperback \$11.75⁵ 11

Ancient Maya Technology (Spotlight on the Maya, Aztec, and Inca Civilizations) Aug 15, 2016 by Charles Hofer Paperback \$11.75⁵ 11

Ancient Inca Geography (Spotlight on the Maya, Aztec, and Inca Civilizations) Aug 15, 2016 by Theresa Morlock Paperback \$11.75⁵ 11

Ancient Aztec Daily Life (Spotlight on the Maya, Aztec, and Inca Civilizations) Aug 15, 2016 by Heather Moore Niver Paperback \$11.75⁵ 11

Ancient Inca Government (Spotlight on the Maya, Aztec, and Inca Civilizations) Aug 15, 2016 by Amy Hayes Paperback \$11.75⁵ 11

Ancient Aztec Geography (Spotlight on the Maya, Aztec, and Inca Civilizations) Aug 15, 2016 by Barbara M Linde Paperback \$11.75⁵ 11

Ancient Maya Government (Spotlight on the Maya, Aztec, and Inca Civilizations) Aug 15, 2016 by Jill Keppeler Paperback \$11.75⁵ 11

Ancient Maya Geography (Spotlight on the Maya, Aztec, and Inca Civilizations) Aug 15, 2016 by Amy Hayes Paperback \$11.75⁵ 11

Ancient Aztec Government (Spotlight on the Maya, Aztec, and Inca Civilizations) Aug 15, 2016 by Christine Honders Paperback \$11.75⁵ 11

Ancient Aztec Technology (Spotlight on the Maya, Aztec, and Inca Civilizations) Aug 15, 2016 by Emily Mahoney Paperback \$11.75⁵ 11

Ancient Maya Daily Life (Spotlight on the Maya, Aztec, and Inca Civilizations) Aug 15, 2016 by Heather Moore Niver Paperback \$11.75⁵ 11

Ancient Aztec Culture (Spotlight on the Maya, Aztec, and Inca Civilizations) Aug 15, 2016 by Emily Mahoney Paperback \$11.75⁵ 11

The Ancient Maya Economy (Spotlight on the Maya, Aztec, and Inca Civilizations) Aug 15, 2016 by Janey Levy Paperback \$11.75⁵ 11

Ancient Inca Technology (Spotlight on the Maya, Aztec, and Inca Civilizations) Aug 15, 2016 by Ryan Nagelhout Paperback \$11.75⁵ 11

Figure 12: Triad 17, OPeN Optional Resources

MORE ACADEMIC RESOURCES

The Maya (Ninth edition) (Ancient Peoples and Places) by Michael D. Coe (Author), Stephen D. Houston (Author)

https://www.amazon.com/dp/0500291888/ref=sxbs_sxwds-stvpv2_1?pf_rd_m=ATVPDKIKX0DER&pf_rd_p=2708083022714283574&pd_rd_wg=Ajhpx&pf_rd_r=RWDAKH2J0956XMAH9207&pf_rd_s=desktop-sx-bottom-slot&pf_rd_t=301&pd_rd_i=0500291888&pd_rd_w=MteE8&pf_rd_i=Maya%2C+Inca%2C+Aztec+history&pd_rd_r=ca7b4868-97ea-4ae3-b4cc-143d8e8b01a7&ie=UTF8&qid=1527142295&sr=1

Jungle of Stone: The Extraordinary Journey of John L. Stephens and Frederick Catherwood, and the Discovery of the Lost Civilization of the Maya Paperback – April 11, 2017, by William Carlsen (Author)

https://www.amazon.com/dp/0062407406/ref=sxbs_sxwds-stvpv2_3?pf_rd_m=ATVPDKIKX0DER&pf_rd_p=2708083022714283574&pd_rd_wg=Ajhpx&pf_rd_r=RWDAKH2J0956XMAH9207&pf_rd_s=desktop-sx-bottom-slot&pf_rd_t=301&pd_rd_i=0062407406&pd_rd_w=MteE8&pf_rd_i=Maya%2C+Inca%2C+Aztec+history&pd_rd_r=ca7b4868-97ea-4ae3-b4cc-143d8e8b01a7&ie=UTF8&qid=1527142295&sr=3

No mention of the Mayas and no way to look into the books.

The History of the Aztec & Inca: Two Illustrated Reference Books: Discover the history, myths, and cultures of the ancient peoples of Central and South America, with 1000 photographs Hardcover – Illustrated, January 7, 2014, by Charles Phillips (Author), David M Jones (Author)

https://www.amazon.com/History-Aztec-Inca-Illustrated-photographs/dp/0754828220/ref=sr_1_15?s=books&ie=UTF8&qid=1527142514&sr=1-15&keywords=Maya%2C+Inca%2C+Aztec+history

The Complete Illustrated History of the Inca Empire: A comprehensive encyclopedia of the Incas and other ancient peoples of South America, with more than 1000 photographs

Hardcover – July 16, 2012, by David M. Jones (Author)
https://www.amazon.com/Complete-Illustrated-History-Inca-Empire/dp/075482358X/ref=pb_sbs_14_1?encoding=UTF8&pd_rd_i=075482358X&pd_rd_r=XDSCJJ2HG7GQ2KPGER33&pd_rd_w=HAs1T&pd_rd_wg=JR8s6&psc=1&refRID=XDSCJJ2HG7GQ2KPGER33

Figure 13: Triad 17, Academic Resources

The first thing that has to be specified is the fact that at the end or at the beginning of each slice of the triad a telephone week is set with five phone calls of about 45-60 minutes each on the pattern I have explained. Within this particular triad only two of such weeks have been realized because of the blocking proximity of Christmas.

First Telephone Week. The Algerian War Was Chosen By The Student.

First day:

“Echoes of Colonial Conflict in Algeria Reverberate in French Politics,”

<https://www.nytimes.com/2017/05/01/world/europe/echoes-of-colonial-conflict-in-algeria-reverberate-in-french-politics.html>

Second day:

“France admits systematic torture during Algeria war for the first time; Emmanuel Macron also recognizes the role of the state in 1957 death of dissident Maurice Audin”

<https://www.theguardian.com/world/2018/sep/13/france-state-responsible-for-1957-death-of-dissident-maurice-audin-in-algeria-says-macron>

Third day:

“Macron faces up to France’s colonial past with €40m ‘harkis’ aid, President to honor families of Algerians who sided with France in the war of independence”

<https://www.theguardian.com/world/2018/sep/25/macron-faces-up-to-france-algeria-colonial-past-with-40m-euros-harkis-aid>

Fourth day:

The Coach changed the subject slightly, staying on Macron but shifting to US-EU relations.

“Macron rebukes Trump’s isolationist message”

<https://edition.cnn.com/2018/09/25/politics/macron-unga-speech-trump/index.html>

Fifth Day:

“As U.S. sanctions near, Europe fails to protect Iran deal”

<https://www.reuters.com/article/us-iran-nuclear-eu/as-u-s-sanctions-near-europe-fails-to-protect-iran-deal-iduskcn1m41uo>

Second Telephone Week. The Midterm Elections Were Chosen By The Student. He Will Change the Subject to “Crunch” On the Third Day and To Trump’s Caravan For The Last Day.

First Day

“The Midterms Minute: high turnout for the first day of early voting in Texas”

<https://www.theguardian.com/us-news/2018/oct/22/the-midterms-minute-early-voting-texas-donald-trump-barnstorms-country>

Second day

“Trump is at the top of his dangerous game as midterms loom”

<https://edition.cnn.com/2018/10/24/politics/donald-trump-midterms-immigration-oval-office/index.html>

Third day

“Some Rockstar employees dispute the idea that they’re overworked”

<https://www.msn.com/en-ca/sports/esports/some-rockstar-employees-dispute-the-idea-that-they%E2%80%99re-overworked/ar-BBOziYS?ocid=RDTESPT>

Fourth Day

“Why Crunch Modes Doesn’t Work: Six Lessons”

<https://www.igda.org/page/crunchsixlessons>

Fifth Day

“Fox News Will No Longer Run Trump Caravan Ad”

<https://www.breitbart.com/the-media/2018/11/05/fox-news-will-no-longer-run-trump-caravan-ad/>

It is clear that the topics are chosen by the student and he also chooses the first document (and later the third and fifth documents). You can also note the student may change the topic when providing the third or fifth articles. The teacher follows. The topics often have to do with the news, either political news or news from the technical field, like in this case “crunching” which is common in many hi-tech firms, especially dealing with software and games. It is also a great problem among students who practice that “crunching” (they also commonly use the term “cramming”) before tests and exams. It is probably the best argument against the practice of tests and exams instead of continuous assessment, especially when we know that the students only mobilize their short-term memory for such short testing periods of time.

In this case, the student being a start-up CEO in the field of connected health equipment, he has to face, along with his employees, periods of crunching to meet with a deadline that can even be moved up to a closer date for purely commercial or circumstantial reasons. Such a learning audience is problematic in a way because the schedule has to be flexible all the time. The needs for training, coaching and teaching, hence learning in this field of professional activity is constant and intense. In the future foreign

languages in general and English in particular are going to be needed on a nearly daily basis for many managing employees and even white- or blue-collar workers (what is a blue-collar worker in a start-up in the field of connected technology?) and most of them are not bilingual and cannot become bilingual, though they can get fluent, but they need reinforcement all the time, what the British call “brushing-up.” Businesses will have to think how to provide this reinforcement when a certain level is reached. That’s where telephone calls are better than other forms of brushing-up, maybe even the best. Today Skype makes it even funnier with images, though I do not practice Skype because I find it not exacting enough. To have a conversation on any subject without body language and without any visual referential elements is a lot more difficult at the linguistic level.

But if we speak of basic language learning in the school system, we can easily see that most students have smartphones and thus can constantly be connected and access all sorts of information that they can introduce into their school work or class work. A connected class is great fun in many ways since the students have access to dictionaries and translating machines. You save a lot of time since you do not have to explain words, though you have to check what they find because there might be some mistakes in the answers coming from these translating machines. You can concentrate on complex or complicated phrases or expressions and on concepts of course, hence the semantic content of the documents you may be using. Tomorrow’s schools will have to provide their population (both students and teachers) with the possibility for students to be available with a phone at certain moments and times in some special space so that they can have a fifteen-minute conversation with their English teacher, or whoever, on their school work and projects. But if we speak of continuing education this flexibility on time and media is essential. In fact, it might even be more surprising for the student or learner than for the teacher. A teacher can easily deal with four students in one hour and these students are at their working stations and the fifteen minutes they are going to spend on the phone is accepted as part of their continuing education. From experience we learn that at first, the student’s colleagues might find it funny to have someone speaking English next to them, but in many businesses today speaking some foreign language with professionals in foreign countries is becoming normal and I have seen more cases of people who would like to have the same opportunity, than people who snigger at it.

Conclusion

Some might say that such guided self-learning is also in away guided teaching. The learner is guided in his/her self-learning, but the teacher is also guided in his/her teaching. That’s a dimension that is rarely used in a standard school situation, but this is already changing and will have to change tremendously especially since teaching will more and more become the satisfaction of a need among learners and these learners will be of any possible age and more and more without any age-discrimination among the students. Teachers have to get ready for classes in which the age-range will be from 7 to 77 years old as a famous advert goes. In my English philology class in 1971, there was a retired doctor who was over 65. So, what! I personally was old for this (college sophomore) class since I was 26 years old. So, what, again!

It is impossible to really say what learning needs will have to be satisfied in twenty years when Artificial Intelligence and robotics become prevalent in our societies and they will become prevalent sooner than we may even think in some areas, like healthcare. It is a mistaken belief if you think it will only concern workers at the lowest salary level (minimum wage). It already concerns the middle class and even the upper middle class, whose daily work is changing since AI machines do a lot of tasks, including qualified tasks for them.

At the present moment, the struggles here and there in the world for higher minimum wages are very ambiguous since most minimum-wage workers perform the most robotizable tasks you can imagine. If the minimum wage goes up, then many of these jobs will be robotized at first and these robots might be endowed with some level of Artificial Intelligence and they will even be able to do the same tasks with extra-extensions that the minimum-wage worker did not do and at times just could not do. The level of AI in the robot will be the extra-training and education the worker should target as soon as possible to remain competitive against the robot, not to mention irreplaceable.

The suggestion from some silicon valley thinkers, who are in the social field more tinkerers than thinkers, that the robots should pay a tax (or rather their “employers” if it is the proper word for the person who uses a robot in any activity) for every hour of work they perform to enable the state to guarantee the workers they have replaced, who have no work and are unemployed, with a minimum income is flawed because corporations will not accept to invest in AI robots and pay a tax as if these AI robots were earning a salary. The real answer to this problem is to develop new jobs that can only be held by humans. Here the real thinkers of our society are trying to imagine what kind of human jobs are going to appear and develop tomorrow and what level of education, both initial and continuing, will be needed and that will mean a lot of guided self-learning.

Strangely enough education and its personnel are still a long way behind, but they will have to jump to the future and “stand up on their feet” as Beyoncé would say in her guided version of audience-produced entertainment, like it or not. The needs in education will be enormous from birth (and even before birth) to our last breath, but as I have shown here the “teaching” personnel will not be teaching per se, or at least in our present definition, but they will be coaching, training, eventually teaching but mostly guiding and before they can guide, they will be designing units of self-learning resources and tasks that will have to be customized to the needs of the self-learners of tomorrow. Of course, there will exist banks of such units of guided self-learning materials, but new units will be needed every day dealing with new needs, new desires and new topics from the real world, older units will have to be customized to the particular self-learners who are both irreplaceable and absolutely original not to mention unique and these units cannot work if the self-learners are not guided through them.

Welcome then to the Guided Self-Learning world of tomorrow.

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