Whereas in traditional education, the role of the teacher is seen as that of a transmitter of knowledge, in the constructivist classroom a teacher’s role changes significantly. The role of the teacher in the constructivist classroom is to act as a "guide on the side". The teacher’s job becomes to provide opportunities for learners to expand their knowledge in an active and engaged format. The teacher cannot assume that all learners have the same background knowledge or experiences on which to build new knowledge. Instruction has to be designed to make the missing connections for learners. The teacher facilitates the constructivistic learning process.

Learners in this environment are active and not passive. They are encouraged to be independent thinkers and problem solvers. Learners are engaged in experiences that go beyond factual responses and provide opportunities to hypothesize, to analyze, to interpret, and to predict. Another essential component for learners is to communicate and collaborate with others. Thus allowing for reinforcement and elaboration of ideas and concepts.

Constructivism is one of the big ideas in education that would require reform in teacher training methods, a substantial change in the public’s perception of education, and a significant amount of time and money. In an ideal world, the use of constructivist methods would be a standard, however I don’t foresee major changes occurring in the educational system of the United States in the near future. Many teachers, including myself, practice constructivist principles in their classrooms and don’t even know it. They just know and understand that some teaching methods make learning more effective and meaningful for students.

Key concepts: constructivism, TIC, IAC, cooperative learning, distance education

1. Introduction

In education, distance education like any other form of education records a parallel and contingent development of the technologies so that the technologies of communication become at the same time technologies of knowledge. As for the new perspective of acquiring information we are witnessing what it could be a change of paradigm, switching from the instructivist/behaviorist techniques to the constructivist/cognitive ones.

Across the centuries the educational theories and the teaching practices imposed by them have reflected different aspects of teaching and/or education spectrum and each culture has emphasized those that best express its values.
An example of this sort is behaviorism that emphasized the development of abilities. It has influenced teaching/teaching foreign languages and other subjects but hasn’t implicitly (and nor explicitly, I believe) practices of students’ emancipation. Thus we should keep in mind the golden age of structural exercises in North America and Europe.

Martel A.[6] makes a four point classification in order to illustrate the accent put on different educational theories across history. The author claims that having a perspective on knowledge is crucial and it is the basis of each practice. Therefore:

1) if we assume that this knowledge is a content, an amount of information that has to be transmitted, we will consider, thus, education as a product that has to be “delivered” (the traditional and instructive perspective);

2) if, on the contrary, knowledge represents a stage of cognition that reflects the personal abilities and the individual formation, in this case education will provide a series of strategies meant to transform this individual scheme (cognitive);

3) when knowledge is seen as a person’s view as a consequence of his interaction with the environment, the education will allow the student to use the resources and instruments of a rich educational environment (psycho-constructivism);

4) when knowledge is seen as a product of the action itself, education is based on the students’ participation in the daily activities of a community (socio-constructivism);

Starting from this technology we can outline the historical perspective: from transmitting information we have switched to teaching strategies, to an environment that provides teaching resources and interaction within the community during the teaching process.

2. On the edge of constructivism

The educational theories put an emphasis today on two dimensions: the students’ active participation in motivating projects and on cooperation. These two dimensions constitute the most important elements of constructivism: a psychological basis based on Jean Piaget’s works and a psycho-social dimension based on Lev S. Vygotsky [13].

Table 1 compares constructivism with former traditional tendencies that we have called instructivism because of the importance given to learning rather than education.
<table>
<thead>
<tr>
<th><strong>Individual dimensions</strong></th>
<th><strong>Constructivist practices</strong></th>
<th><strong>Instructivist practices</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. student’s role</td>
<td>• Activ constructor of knowledge • Collaborator, sometimes expert</td>
<td>• Person who listens • Always a student</td>
</tr>
<tr>
<td>2. Outlook on teaching</td>
<td>Transforming written information in knowledge and units of sense</td>
<td>Acquiring information</td>
</tr>
<tr>
<td>3. Cognitive basis</td>
<td>Information Interpretation based on former knowledge and beliefs</td>
<td>Acquiring basic information</td>
</tr>
<tr>
<td>4. Types of activities</td>
<td>• Student centred • Various, depending on the methods of teaching • Interactive relationship</td>
<td>• Teacher centred • Didactic relationship • The same exercise for all the students</td>
</tr>
<tr>
<td>5. Types of working environment</td>
<td>Supporting</td>
<td>Hierarchical</td>
</tr>
<tr>
<td>6. Types of curriculum</td>
<td>• Richness of resources for different types of activities • Provides access to information when required by the students</td>
<td>• Pre-established and standard • Provides only the necessary resources</td>
</tr>
<tr>
<td>7. Proof of success</td>
<td>The level of understanding and knowledge</td>
<td>The quantity of inform. learnt by heart</td>
</tr>
<tr>
<td>8. Flux of activities</td>
<td>Self-guided</td>
<td>Linear and guided by the teacher</td>
</tr>
<tr>
<td>9. Evaluation</td>
<td>• Related to the abilities developed by the students • Through dossiers</td>
<td>• Related to the information • Test with short questions • Standard tests</td>
</tr>
</tbody>
</table>

**Social dimensions**

<table>
<thead>
<tr>
<th>1. Outlook on knowledge</th>
<th>Dynamic process that evolves in time in a certain culture</th>
<th>A static truth, always valid; it can be acquired the student disregarding his characteristic features</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. The teacher’s role</td>
<td>Collaborator who facilitates the teaching process; sometimes, he himself „student”</td>
<td>Expert, transmitter of knowledge</td>
</tr>
<tr>
<td>3. The focus in the educational system is on:</td>
<td>• Generating reactions • Answers to complex questions</td>
<td>Learning by heart Focus on information</td>
</tr>
<tr>
<td>4. Main activities</td>
<td>• Putting into practice and cooperation • Making projects and solving problems</td>
<td>Reading and individual practice</td>
</tr>
</tbody>
</table>
5. Social model
- Continuity; feeling of belonging
- Persons who act upon the environment and are not simply dependent on it
- Development of the autonomy, meta-cognition and critical thinking

6. Role of entertainment
Playing games and experimenting as forms of valid teaching
- Playing games = a waste of time
- Limited experimentation

Instruments of teaching and technologies
Variantes: computers, video lectures, technologies that the student apply in daily life, books, magazines, journals, movies, etc
Paper, pencil, texts, certain movies, video materials, etc

Table 1. Applied principles of teaching/learning according to constructivism and instrucivism

Briefly, Table 1 shows that constructivist techniques relate to a post-modernist educational paradigm that sustain the idea that the student creates his own interpretation of the events and information. Knowledge is not acquired once and for all. The original tasks and projects are considered motivating factors. Constant cooperation reveals itself in practice.

On the other hand, the instructivist techniques are related to traditional models based on positivism. They consist of acquiring certain information and knowledge seen as “true” and formerly built (pre-built) independently by the student, by his situation or his culture.

As for the discussion of establishing whether the two approaches are incompatible or complementary [14] it is of present interest due to the fact that practice and our mentality combine, in fact, at the moment, the two paradigms. As far as the usual classes on the internet or in a classroom are concerned, the two patterns of teaching practice are inter-connected; they are never in a pure state and never one without the other. We can consider that teaching practice implies such a synthesis.

At the same time, it is interesting to notice how constructivist techniques tend to inspire themselves from the humanist trends and its promoted theories of education. This fusion could not be better illustrated than Carl Rogers did (1902-1987): “I know I could not teach anyone anything. I can only create him a proper environment for him to learn” [6]. He talks about “environment” long before the term was adopted by the constructivists, as a sign of respect towards the student.

The present fusion between the constructivist theories and the humanist ideology gives us a critical perspective on acquiring knowledge and on language. This fusion gives the opportunity to see that a unit of meaning can be situated in a historical context, built and rebuilt through language, and the
discourse links the knowledge and the speaker’s intention. The critical analysis stimulates, in this case, the revealing of the speaker’s intentions. It challenges the idea that language is a mere signification of reality. Without claiming paternity over education, constructivists are getting close to the emancipated and “empowerment” tendencies of education.

The constructivist models have also left space for interpretation, in the sense of inert-culture although this aspect has not been theorized yet. All knowledge represents building a meaning. It is implicitly understood that all social context creates its own knowledge as its own culture. The constructivist models transform knowledge into cultural knowledge which includes language as well.

To our benefit or not, it is history who is going to decide that, human society is heading towards creating a technical and constructivist environment as part of education. Therefore, an ethical question rises in order to find out whether this movement is to be wished for or not at the level of each individual or of the whole community. It is also important noticing that, due to the invitation to a critical reflection, the constructivist models prove to be more in the position of exposing all type of oppression (social, economic, linguistic) rather than the instructivistes which, on the contrary, confirm, state and perpetuate more easily the pro-repressive status. Theoretically speaking, we can thus consider that constructivist models themselves represent a progress. They just need to be put into practice.

If we take as an example the theories of teaching/learning foreign languages, but this can be true in other domains as well, like teaching exact sciences (informatics, mathematics, physics, chemistry), it can be proved that languages are not isolated, we don’t find them now at the opposite end of the constructivist movement, but on the contrary. As a consequence of turning towards communication in the ‘70s, both practical and theoretical studies are strongly influenced by the constructivist theories relating to:

- Creating a learning environment that encourages cooperation and communication as means of working;
- Using the knowledge previously acquired;
- Active learning;
- Contextualizing the learning process;
- Developing the student’s autonomy (learning to learn);
- Providing a rich linguistic environment;
- Accomplishing original tasks and decoding authentic documents;
- Encouraging the variety of educational experience;
- Providing an intercultural understanding (domain which hasn’t been yet explored by constructivism, but which creates a path in the field of foreign languages);
As for the theories on learning, those regarding learning a foreign language are orientated towards putting into practice the constructivist methods.

Yet the constructivist techniques are not an innovation. Rousseau and Montaigne, for example, had already anticipated the constructivist principles. What is new, still, is the convergence of humanist and constructivist currents in the education, plus the advantage that technologies bring in improving the working environment and the constructivist projects.

3. Constructivism and technology

Constructivist theories about learning are the object of interest that support the teachers and the people who produce the educational material for the technological development. Gaserfeld one of the theorists, defined constructivism in 1989 as follows: “Constructivism is a theory of knowledge that has its roots in philosophy, psychology and cybernetics”[6].

Many of the investigations nowadays are made in an attempt to demonstrate that the technologies allow a better practice of the constructivist theories. Thus, Elizabeth Murphy created grid of evaluation in order to ease paradigm change. This grid is available on the Internet in English, in its original variant. (http://www.stemnet.nf.ca/~emurphy/emurphy/cle4.html).

4. The difficulties encountered in the transition towards the constructivist techniques

While analyzing the teaching practices that use the technologies available on the Internet in the teaching/learning process (http://ourworld.compuserve.com/homepages/michaelwendt/seiten/Martel.htm) a conclusion was drawn: the traditional, instructivist mentality rules on a large scale over the development of the educational activities on the Internet. The activities from the classroom are put into practice in such a way that the Internet is always used as a:

- Library;
- the space for group work (correspondence and cooperative activities);
- communities which have to be explored (going outdoors);
- the place where the performances are staged (includes images, video material etc.).
<table>
<thead>
<tr>
<th>Characteristics</th>
<th>present</th>
<th>absent</th>
<th>unobserved</th>
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<tbody>
<tr>
<td>Multiple perspectives</td>
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<tr>
<td>Centered on the student’s objectives</td>
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<tr>
<td>The teacher as collaborator, eases teaching</td>
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<tr>
<td>Metaknowledge</td>
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<tr>
<td>Student’s autonomy</td>
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<tr>
<td>Tasks and original contents</td>
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<tr>
<td>Building knowledge</td>
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<tr>
<td>Co-operation</td>
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<td>Previous knowledge</td>
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<tr>
<td>Solving problems</td>
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<td>Using error</td>
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<tr>
<td>Exploration</td>
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<td>Learning</td>
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<tr>
<td>Conceptual contextualization</td>
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<tr>
<td>Multiple points of view</td>
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<tr>
<td>Building based on previous known elements</td>
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<td>Authentic evaluation</td>
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<tr>
<td>The initial sources of information</td>
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</table>

Table 2  Grid of analyses according to the constructivist principles

The Internet is not used as a learning environment yet. Nevertheless, the constructivist activities are more and more numerous. They are not yet dominant, but the struggles of their authors are very eloquent and also the special attention that they give to the constructivist principles.

In order to underline the aspects of teaching foreign languages by means of the Internet, we will also bring out two aspects of this type of learning which can be both found in other domains of the learning/teaching process.

☑️ as in the case of the published school books, the language is also regarded as a fix and stiff object which has to be acquired for the communication to be possible, and

☑️ the pattern of the classroom is questionable
4.1 The language between fix knowledge and interpretation

The big difference between the constructivist patterns and the instructive ones consists in the type of knowledge which has to be learned. In this case it’s about the foreign language (French, English etc), but we can also talk about other types of knowledge. From the traditional perspective in the teaching/learning process there is a tendency of considering the language as an entirety of static and fix information which the student has to assimilate with the purpose of communication. Through association and analogy the words are connected with their meaning and to learn signifies to render the sense by means of words. All the Internet sites which I have known and analyzed so far are based on this conception regarding knowledge.

There is also a cultural dimension which supports this conception about knowledge. Those who speak a foreign language fluently have always considered French or English as being a very strict standardized way of communication. Many norms and language protecting rules have been put into practice over the centuries by the academic institutions or by means of certain laws. Therefore, the static image on language promoted by instructivism is not the only obstacle encountered when trying to put into some constructivist and dynamic techniques into practice.

Nevertheless, Vygotsky [13] never considered the language as a fix object, but on the contrary, while studying the connection between word and meaning, he chose an interpretative approach (hermeneutics), after having rejected the theories regarding the association or analogy between thinking and language.” The discovery according to which the meaning of the words is evolving, the study on thinking and communication lead towards the best option. The significance of the words is dynamic, not static formations/structures. They transform the way a child grows; they transform along with different ways in which thinking functions. The relationship between thinking and word is not a thing/object, but a process, a continuous back and forth movement, from thinking to word and the other way around.”

Teaching of foreign languages has encountered throughout history a big difficulty in seeing the language as a process of acquiring a new process. The communicative approaches have recorded some success in this domain and the constructivist approaches follow the same path/continue this success. However, Vygotsky referring to this conception explains that the blocking of the more dynamic approaches is due to the stress put on the external elements or the phonetics of a language. “The first thing which such a study reveals is the necessity of making the distinction between two levels of communicating. Even though they form a unity, both the intern aspect of understanding, i.e. the semantic aspect of communication, and the external, phonetic aspect have their own functioning laws. In order to master the external language, the child starts by articulating a word and then attaches two or three to the previous one; later
on, he makes progresses by passing from forming simple sentences to more complex ones, so that in the end he can have a coherent language formed of these sentences. In other words, he begins with a part in order to reach the whole. On the other hand, when talking about sense, the first word of a child symbolizes an entire sentence. Semantically, the child begins from a whole, from a semantic complex and not until later on does he reach the point in which he can master separate semantic unities, the meaning of the words and to separate in this unities his previous undifferentiated thinking. The external and semantic aspects of language develop in opposite directions, one from particular towards general, from word towards sentence and the other one from general towards particular, i.e. from sentence towards word. The structure of communication doesn’t only reflect the structure of thinking and this is why words can’t be dictated by thought as previously made decorative patterns. The thought crosses many changes before being transformed into communication. It can’t find, not even by far, its expression in communication; what it finds is a reality and a shape. Semantically and phonetically speaking, the development processes are basically represented by a single process mostly because of their opposite directions.

New investigations, inspired by Vygotsky’s concept of proximal development or Piaget’s theory have been integrated in the process of teaching/learning foreign languages, especially in reading and acquiring vocabulary [1] [2] [3]. All that is left is for these to influence the education on the Internet.

But when referring to practice, how can the teaching/learning activities of foreign languages outdistance from language seen as a fix/stiff object? First of all, I think we should restore, as being legitimate, the process of translation that the student who adopts to a great extent (but not exclusively) a contrastive and comparative approach of the source and target languages is experimenting. Thereafter, we should encourage the drawing of semantic maps and maps of grammatical representations while watching the student’s perspective.

4.2 The Classroom’s pattern: the group in a common space in which the people co-operate.

Centuries ago, the organization of education according to the classroom’s pattern was justified. The technologies that were available to people back then: the books, the blackboard etc. determined the organization of the education in a certain place and at a certain moment in time [7]. In the primary school classes are organized chronologically, in terms of age rather than relying on students’ needs or their previous knowledge. In high school and afterwards at the university, the education continues to be organized according to time criteria and it provides a standard curriculum for the groups of students.
The pattern of the class is based on the belief (as we can hardly say it is a constant or a conviction) that a certain group starts its studies at the same time, learns by studying the same material and having the same rhythm of work it will finish its education at the same time and the learning process will be efficient. This kind of education was most likely efficient at that time with the technologies available then and with the expectations of the period. The efficiency of the costs and of the methods was mainly based on an education which used to restrict the investigation of the resources. Neither individualization, nor personalization was possible.

Nowadays, we are wondering how long is going to take the organization of a class. The current tendency is not obviously orientated towards an independence regarding space (distance) and time (non-synchronized education and also the one realized on the Internet). Will the class’ pattern remain an administrative artifact?

In fact, the classroom is replaced by common spaces in which there is a group of people who chooses whom to co-operate or to work with. Here are some types of cooperation that we can notice on the Internet:

- two people without external control;
- with external control and linguistic assistance;
- groups without external control (discussion groups);
- with control and linguistic assistance (recorded discussion groups);
- with a minimum control with the purpose of linguistic improvement;
- with a minimum control regarding shape and content;
- with control coming from the one who publishes the book.

From the educational point of view, Li and Hart pointed out in 1996 that the interest showed for various forms of electronic communication consists in motivation and sudden changes but also in more formal aspects regarding publishing on Internet [5].

They reached the following conclusion: both patterns (group discussion and the publishing patterns) have their own credit. The participative nature of the “assistance councils” based on dialogue, was attractive, but in the end the publishing pattern proved to be more suitable for those who study a foreign language because the accuracy and the quality of the works they read affects education’s quality”.

Our practical knowledge regarding more efficient communication is only in its beginning. Based on some previous investigations, Haughey and Anderson suggest what we should mainly respect:

- to provide information in a context in order to be able to contextualize the discussions;
- to mark the limits of the themes and the time assigned to a single discussion (days, weeks etc);
✓ to encourage the use of resources originated from different communicative situations (experts, experiences etc);
✓ short and concise interventions to be required from the participants
✓ summaries of the discussions to be provided regularly

Moreover, the studies have shown that “students’” participation is higher when the intervention takes place electronically.
In a discussion in class the teacher speaks 85% of the time while in the non-synchronized pattern the student has a participation of 65% in writing [12].

4.3 Insertion in local cultures

Major attention should also be paid to intercultural communication. Thus, we can already find e-texts of intercultural interest on the Internet. For example, E. F. Sheridan offers advice, resources and examples concerning a work that takes into consideration the intercultural needs, in an article entitled “Transcultural grounds regarding the design of web-sites with the purpose of development and strategies for adapting the content on-line depending on location.”

This is available on the following site: http://www.multilingual.com.

5. Conclusions

All the educational reflections and preoccupations revolve round 2 axes of unsettling transformations. First of all, there is the control-autonomy axis and we can easily notice that the present tendency is to focus more and more on autonomy. The constructivist techniques favour a higher control of the student on his learning process (autonomy) and the pluridimensional communication technologies emphasize this individual holding of control. This change offers a socio-cultural dimension to the present process, a more emancipated dimension compared to the mode of expression. We still have to wait for this promising perspective to materialize (this perspective is put to our disposal by the new technologies).

As for the second axis, the proximity-distance axis, we believe that the axis control-autonomy can be taken into consideration in so far as the distance allows a higher autonomy. The individuals are less and less the prisoners of the organization in classes according to chronological criteria and also of the limitation of the unique way, face to face. At present new ways of hybrid intervention are looming. One of the defiance that this axis induces refers to the idea of realizing a balance in co-operation; the balance should favor the presence, the independence and the distance.
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