Use of Information and Communication Technologies in Teaching French

Esmeralda Kromidha

Elona Toro

University of Tirana, Albania aldanushi@yahoo.fr, elonatoro@yahoo.com

Doi:10.5901/jesr.2015.v5n1p113

Abstract

Multimedia constitutes a modernizing factor for the educational system of the foreign language learning and teaching worldwide. Students are provided with well defined objectives and learning outcomes in relation to foreign language learning and the major concern in this aspect is increasing our efficiency in meeting students' needs. The integration of Information and Communication Technologies in foreign language learning and teaching becomes indispensable so that efficiency standards are ensured in foreign language education. The multimedia resources can take different forms in the teaching and learning process. Which are the benefits of Information and Communication Technologies and their different forms as used in the class? How do the French language teachers' impressions vary in relation to the usage of information system in the class? How much and well do the educational institutions utilize Information and Communication Technologies? What is their infrastructure like in relation to information equipments? Which are their major matters of concern in this aspect?

Keywords: Information and Communication Technologies, teaching, learning, French language education.

1. Introduction

Information and Communication Technologies are related to two options offered by information systems: access to a vast amount of information in digital form and distance communication such as emails, chats etc.

Information and Communication Technologies in teaching are the use of potentialities and properties of these systems. (Cuq : 2003) Foreign language Teaching Methodologies are greatly interested in the two possibilities offered by ICT because first, ICT render it possible for authentic language to be used in class thanks to the variety of information introduced and second, ICT helps people create links and maintain easy and fast communication, which is one of the most important aspects of the language and one of the main goals of language teaching and learning.

ICT give us the opportunity to create an active learning environment based on media where task based learning takes place, which modifies the process of learning strategies used by students (Ellis : 2003). The selection of these strategies depends firstly on the type of task set to students and secondly, on the type of support chosen by the teacher (Brown : 1982).

Given the importance of ICT in language teaching the Faculty of Foreign Languages in 2008 revised Teacher Education Master's program. This revision consisted in both the number of credits and the courses included in the program. Thus, the French language Teacher Education Master is a 120-credit program quite different from the previous 60-credit program. New courses were introduced with the aim of educating a language teacher able to meet the demands of our time. Among the new courses introduced was the Use of Information and Communication Technologies in Language Teaching. This course aims at equipping students with practical skills by involving them in practical work which in turn develops their autonomous learning. Students are taught and assisted so that they know how to use various programs that will help them develop teaching material or digital teaching tools. For instance, they work with Hot Patatoes or Moodle. The course is perceived as a way for the development of teacher students information skills and as a means of raising their awareness and promoting a reflection on how to integrate ICT in teaching. It also aims at training teacher students how to use ICT "for personal planning, organisation and resource discovery".

(European Profile for Language Teacher Education – A Frame of Reference, Kelly and Grenfell

:http://www.lang.soton.ac.uk/profile/report/MainReport.pdf)

Integration of ICT in language teaching assists in the implementation of differentiated tasks in the classroom but also create an authentic learning environment in the classroom, as the use of ICT enables people to interact, use the

ISSN 2239-978X	Journal of Educational and Social Research	Vol. 5 No.1
ISSN 2240-0524	MCSER Publishing, Rome-Italy	January 2015

authentic target language of the web pages and enhance their autonomous learning. Students become more independent and responsible for their own learning. The students research information, collaborate with their peers and publish their work. By working on their own on various projects they learn how to use ICT even when they finish school; hence they acquire skills which will stay with them and be useful in their lifelong learning.

Cuq : 2006 (defines ICT as technologies in the service of teaching. ICT constitute are an interesting tool in Language teaching Methodologies because they keep the students and the teacher in touch with the world outside the classroom. This tool allows both of them to communicate and be informed. JC Bertin : 2001, in his book *Des outils pour les langues* (p.15) defines ICT as pedagogical tools which combine teaching materials and pedagogical support at the same time, so they serve both as the language manual, tape-recorder, projector, and as workbook, learning activities etc.

This article aims at analysing the benefits of Information and Communication Technologies and their different forms as used in the class. Another objective that the research undertakes is to evidence the nature of the French language teachers' impressions and hoë they vary in relation to the usage of information system in the class. Furthermore, the article delves into hoë much and ëell do the educational institutions utilize Information and Communication Technologies, elaborating on the major matters of concern that the infrastructure in relation to information equipments pose, so that possible future actions can be taken to meet the actual needs.

2. Types of Information and Communication Technologies in Teaching

The technological equipments that can be used during the French language lesson are:

Digital Interactive Table which has replaced and supplemented the classic black-board. It is used in a group setting and allows the teachers to carry out all the functions of a computer (website use along with its multimedia functions as TEXT, video, audio, etc.). The necessary information or changes made to a text can be stored and sent by email, to students who have been absent or can be shared with other teachers. Thanks to the functions provided by the software accompanying the table (Notebook, Scrabook etc.) teachers can create interactive exercises and activities, which are dynamic and fun. The table gives the opportunity to play with the voice, video and screen. It serves to cover a piece of text or image, which encourages the student to make hypothesis and speculate about what might be in the figure, making him think and express himself in foreign languages. (Petitgirard, Abry et Brodin : 2011)

Internet is perhaps the most effective in language teaching for the many advantages it presents. Singhal (1997) states some of the most important advantages such as the use of use of electronic mail and chat use, which brings communication benefits to the language learners. It can also be used to retrieve and access information. The language can be studied in a cultural context, which is hard to be accomplished in countries where language is taught as a foreign language. The Internet also serves as a medium for experiencing and presenting creative works. It promotes higher order thinking skills. Students develop communication skills by negotiating, persuading, clarifying meaning, requesting information, and engaging in true-life, authentic discussion. They develop social skills and their computer skills are promoted as they become able to use the computer. The Internet provides supplemental language activities which help students to develop their language skills. (Singhal : 1997)

Lancien (1998) states these functions of the Internet. Firstly, it has multimedia function. Thanks to this feature, we can have simultaneously text, video, image, sound, animated figures etc. Secondly, the function of the hypertext, which relates different texts by clicking on a link, thus creating a giant network allowing the user the possibility to access a large extent of information. Third, there is multichannel information. The same information can be found in various forms of communication, in text format, image, video, etc. that allows the user to consult and adopt an active position. The fourth feature is the interconnection information in various forms. For example, a topic might be presented using different elements in order to improve its understanding, or using different references (music, literature, painting, etc.) to develop more imagination and expressions during a learning activity. (Lancien : 1998)

Another technology which is being used more and more is the digital course book of foreign language. This method proposes to digital format the paper version of the common language course book. However, the digital course book is not simply a document in PDF format, but it also contains additional functions. It includes all the audio functions of listening activities, we can correct and carry out various group activities, which avoids problems with orthography and shortens the time taken by correction. (Orlifa: 2012)

Unlike the book version, the digital one can lend itself to additional teaching and learning activities such as video sequences associated with learning, which can make very effective and attractive additional activities in class.

3. Advantages and Disadvantages of ICT

Nowadays ICT develop very quickly making it possible to use many tools in the foreign language class which can be divided into two groups: off line tools (Interactive table, CDROM, didactic software) and on line tools (blog, electronic translators, web page, web 2.0, forum, chat, pod cast, games and virtual worlds, on line tests etc.) ICT bring many new technological development in class, but what is more important is what new approaches they bring to the teaching and learning of foreign languages. Yet, we must not think that ICT is the wonderful solution to the problems of language teaching and learning. Obviously, they have their own limitations, as well.

Let 's see what are the advantages and limits brought by ICT in technological plan and then in the foreign language teaching methodologies. M. Grosbis : 2012 refer to the advantages and disadvantages of various ICT tools. For example, ICT provides different tools at the same time such as interactive tables, which is much more interesting than a pencil and a simple table. The main feature of ICT is their multimedial character. These tools are very easy to use, students can share their tasks with each other via email or remote platforms, they can communicate on line with teachers or other students worldwide via the forum, chat, social networking, Web 2.0, distance teaching platforms, etc. They can consult various on line resources such as encyclopedias, official sites or wiki pages getting the required information on the spot, they can also have free access to many programs that can be downloaded free from the Internet.

However, there are some disadvantages such as high costs for institutions for different softwares, difficulty of use, the reliability of the information or the blog, wiki pages, lack of confidentiality while in the chat forum. Many sites may not be ergonomic, so simple to use and finding information can be difficult and often have the risk of getting unwanted messages such as spam or viruses.

From a didactic perspective, ICT make learning more personal, students follow their pace of learnings according to their cognitive style. The student is more motivated, more active and free. So ICT help develop students autonomy and motivation. They are at the same time multichannel, multireferential and interactive. T. Lancien : 1998 defines multichannel in his book Le Multimédia (p.24) as a place of different communication channels (sound, image, text) which allows students develop different competences at the same time according to his individual characteristics. Multireferentialism enables diversification and diversity of information on a given subject. The student using technologies is interactive, he should react and adapt in response to his interlocutor, thus turning into a social actor, which is the main purpose of the approach of active learning and task based learning. ICT is a very effective teaching tool for the teacher, they help him to build a differentiated pedagogy that fits each student. ICT help the teacher design micro and macro assignments to meet different students needs and help develop their creative skills.

The role of the teacher changes completely. He is a guide and not an all-knowing person who knows everything. He can be more focused on his creative teaching. ICT offer authentic documents that can be processed by the teacher according to the specific lesson objectives. The internet offers exercises with the correct answer, which help the students to correct themselves facilitating the teacher's work.

4. Modification of the Learning Process

All these technologies used in teaching foreign languages can bring a modification in the learning process . (Hirschsprung : 2005)

According to the theory of knowledge building, the student is no longer a passive person who absorbs information given by the teacher, but he transforms into an actor of his learning, he makes his own decisions regarding learning and self - evaluation. In order for the use of technologies to be effective, it is necessary for them to be integrated into a methodology which not only takes this into account but also reflects on how to integrate it. Thus, the use of various communication channels helps students have an overall view of the reality. The same information is transmitted in various forms. The ample and repeated information helps the student to better memorize it and consequently, better understand it. (Narcy-Combes : 2005)

Using technologies requires the student actively participate in learning and react, consequently contribute to learning. This contribution is twofold: first, in the context of learning but also in the context of reflection on learning, which is just as important to the learning process. As for learning in class technologies promote student motivation and his autonomy. Learning activities may be done according to personal paces. Technological devices allow work on the four language skills simultaneously, so students can read, listen, speak or write based on the input taken. Wiki sites or social networks, all functions of Web 2.0, enable the real communication, which always remains formal and fictive in the fictitious class. (Altan : 2000)

Reflection on learning the self correction activities enable student to evaluate himself, highlighting his needs and making him aware of the learning process, which allows the student to learn by following his needs and modifying his strategies of learning. Thanks to the interactive features of technological equipments, the transformation functions, information storage, the student finds it easier to understand and acquire knowledge better. (Hirschsprung : 2005)

5. Research Focus

Based on the literature review and the advantages related with the use of ICT a survey was conducted in French classes to see the way of using ICT in the class and their impact in teaching and learning.

6. Methodology of Research

In order to provide all the answers to the questions raised and the different matters of concern, some questionnaires were organized for the students and teachers of French language to detect all the details about the frequency of usage of the Information and Technological System in the class and the different ways they are implemented.

The methodology used is quantitative. The quantitative nature of the questionnaires was chosen for this would provide all the figures needed, so that a clear general image of the general phenomenon could be traced, which in turn would establish the connection between the theoretical aspects and the actual reality about the use of technology in the class. Through the questionnaires, certain general judgments could be formed as pertaining to the use and users of technology. The advantage of these questionnaires is that they make it easier to gather data rapidly and quantitatively, but in certain cases these data cannot be complete for certain questions might not be well understood or they are simply forgotten to be answered. In order to avoid hat at its best, the questionnaires were delivered and completed in the course of a training that teachers took part in and during some classes that high school students were having.

6.1 General Background of Research

This study focuses on the extent of ICT use and its integration in French language classes. In recent years more and more schools in Albania have been equipped with computer labs and smartboards, but their use is rare in language classes. Despite their beneficial features to transform teaching and learning into an active and communicative process foreign language teaching and learning has remained a teacher centered and passive process.

Although students are very familiar with the use of technologies, often even more than teachers, they sometimes use it to learn the language by themselves, not in an integrated and guided way by the teachers.

With the aim of identifying the problem concerning the use of ICT in the French language classes in our country, a survey was done involving both French teachers and students learning French to see their attitude and approach to ICT in the class. The first survey was addressed to students in Tirana high schools to find out how ICT was integrated in the class and what they think of this new approach.

The second survey done with the participation of French teachers aimed at highlighting the problems encountered while using ICT in the French language classes.

In addition, the survey aimed at giving an overview of the teachers' attitudes and preferences in the use of technology in general and in teaching in particular. This was connected to the level of technological equipment of the schools where the survey was carried out, how much and how often they were used by the teachers. Through the answers given by teachers the survey revealed the teachers ' opinions and objective and subjective reasons for the use or not use of ICT in the classroom. Finally, the questionnaire would highlight the effect of ICT in teaching strategies and teachers suggestions of how to improve ICT integration in their teaching.

6.2 Sample of Research

This questionnaire was administered to 12 teachers of French language, from 30 to 58 years old, in different Albanian cities. Tirana, Elbasan, Shkodra and Korca. The selection of teachers from different cities was done with the intention of analyzing the situation not only in the capital city, but also in other regions of the country where school equipment is not as good as in Tirana and where there are fewer training opportunities. Another reason for choosing these cities (Tirana, Elbasan, Shkodra and Korcë) is that they have bilingual (Albanian- French) high schools. In addition, the universities set in these cities have French language departments.

6.3 Instrument and Procedures

The questionnaires were used as instruments to gather data for the study. The questionnaire given to 20 students, from 15 to 18 years old, consisted of 19 questions, thirteen of which were close ended ones, mainly aiming to elicit facts, such as the equipment of schools with technological devices and five open-ended questions that allowed students to express themselves. The purpose of the survey was to point out the students' beliefs and attitudes towards technologies.

7. Questionnaire on the Use of ICT by Students

- 1. Do you have computers at home ? Yes No
- 2. Do you have Internet connection at home ? Yes No
- 3. Do you often surf the Net ? Yes No
- 4. Which are the reasons you most frequently use the Internet ?
- 5. What are the programs you most often use ?
- 6. Do you have an information lab in your school ? Yes No
- 7. Is there any internet connection ? Yes No
- 8. Is there any computer connected to the Internet in the classroom ? Yes No
- 9. Is there Digital Interactive Tablet in the classroom ? Yes No
- 10. If not, Is there a classroom in your school equipped with one ? Yes No
- 11. Do you use computers in class ? Yes No
- 12. If not, would you want to use them in the classroom ? Yes No
- 13. Explain why?
- 14. Have you ever participated in a class that uses Interactive Digital Table ? Yes No
- 15. Did you like this experience ? Yes No
- 16. Explain why?
- 17. Do you think Technologies help you learn more about foreign language ? Yes No
- 18. Explain why? ____

The teacher questionnaire contains 22 questions, mainly closed ended or multiple ones. Is it true that a questionnaire which aims to highlight the representative opinions, beliefs and attitudes of participants in a survey should mainly consist of open ended questions, in order to allow them to express themselves freely, but in this case it was the length of the survey (4 pages) and the diversity of information required only by a questionnaire, which presented the problem that probably the respondents would choose to answer briefly resulting in very short, illegible, superficial response or non-response at all. For this reason it was thought that for each of the questions in the questionnaire there would be given many options to give them sufficient time to read and give the answer that best suited their situation. The questionnaire also foresaw an answer " other " for all cases where the options given were not sufficient. The questionnaire also included factual questions to see how much schools had access to ICT and how teachers access and use ICT in their private life, what software they know and use, how much and how often they adapt teaching materials

The questionnaire also contained questions regarding teachers' opinions and beliefs on the importance of ICT and how to introduce them in classes.

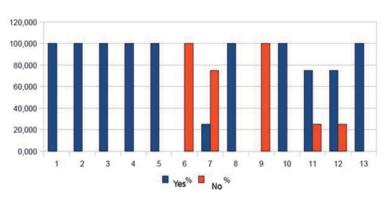
8. Data Analysis

The data collected from the students' questionnaires showed that the high schools are equipped with computer labs and have internet connection. Sometimes there are digital tables but they are rarely used for foreign language teaching. On the other hand, almost all students have a computer at home, they use the Internet, and web navigators and different Office programs to search information or use social networks, listen to music and sometimes learn foreign languages.

The students think that learning foreign languages by means of technologies is more interesting, more appealing, more motivating and involving. Thanks to the technologies they have the opportunity to receive more information while having fun, they learn more about the culture of the target country and their learning is facilitated.

1. Answers to open ended questions of the students to the ICT questionnaire French language students		
Item 4	To search information, to use social networking, listen to music, to have fun, to learn foreign languages	
Item 5	Microsoft Office, Internet	
Item 13	It is more attractive, more fun, more interesting and easier to understand	
Item 16	It is more interesting, the research helps us find more information, it is simple to understand, engaging and motivating	
ltem 18	Through various addresses and links we may see different sites, as it is created to facilitate our work, we can learn more about the culture of the target country than from books, it's more attractive and understandable	

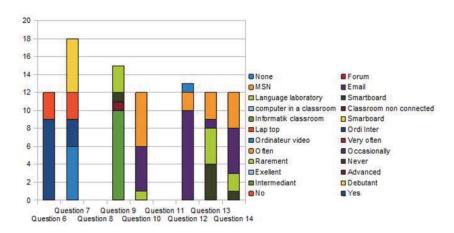
Graph 1: Uses of ICT in a classroom



The data from this questionnaire show that students have great experience in using technology, seeking information and communication as well, but ICT use in the classroom is very low. Using technology is an interesting element in language learning or teaching, ICT should not be regarded as a magical device that will replace the coursebooks, teaching strategies and teachers. ICT serve as a teaching tool to be used integratively with the other teaching materials and help to enhance language teaching methodology that leads to active learning.

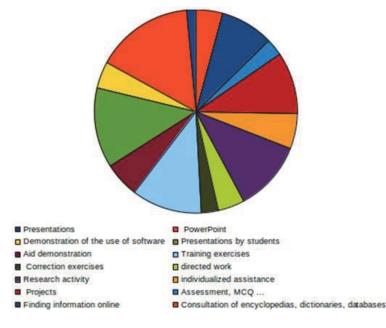
8.1 Questionnaire addressed to teachers gave the following results

The graph below shows that all surveyed teachers own a computer connected to the Internet. Item four of the questionnaire was aimed at finding out the teachers' beliefs and knowledge of different computer software, and their pedagogical use. The answers revealed that teachers have a good level in the use of the software and web navigators, but they have little knowledge and few skills in installation of various programs or the pheripherical devices as scanners, printers etc, the use of communication tools, for example, blogs, websites in language teaching.



Graph 2: Technological school equipments

The second objective of the study was to highlight the level of the supply of ICT equipment in the schools surveyed. The graph shows that 70 % of teachers asked have opportunities to use ICT in their schools. In most cases, teachers report they use a computer connected to a videoprojector without any connection to internet. There are also teachers who use smartboards, mostly not in schools, but at private language centers. According to teachers, the reason for this situation is the lack of funds to purchase technological equipment. In cases where schools have a certain supply of equipment it is not sufficient enough to meet the needs of large classes, of about 30 students per class. In answer to item nine, all teachers mark that there is a computer lab connected to the Internet in their schools but they say that these labs are rarely used for foreign language teaching. They state they use ICT very little in foreign language teaching. This happens first, as they lack the appropriate equipment, in addition the curriculum is intense leaving little space for introducing something different and using ICT. The main technological tool widely used in most cases is email.



Graph 3 - Activities using ICT in a classroom



- Broaden the range of teaching strategies
- Make the student more independent in their learning
- Provide broader learning activities
- Ensure a richer cognitive development
- ICT allow better student motivation, to vary the activities
- Enable students to develop skills in contact with the ideas of his peers (eg forum)
- Promote a higher success rate
- Better monitoring of students

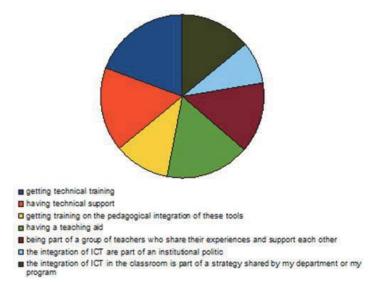
Graph 4 – Reasons why teachers use ICT in a class

The third objective of our survey was to find out the reason why teachers use ICT in their classes looking into the software they employ. (Graph 4)

The chart above shows that ICT tools (when used) are mainly used to present facts from teachers or students. It is noted that a special place is devoted to PowerPoint program as the existence of a computer connected to a video projector allows only facts presentation. This is obvious in the response to question 18 when 80 % of teachers say that they mostly use PowerPoint and Word program to prepare teaching materials. From these it can be deduced that the Word program is mainly used to write texts so teachers then have the opportunity to print and multiply them for classroom use, while PPT presentation enables teachers to present material and attract students' attention, though in most cases they remain passive and simple onlookers.

Graph 5 four gives the results of question 19 about the benefits the use of ICT brings to language teachers and especially to improving and enriching their teaching strategies. Most of the teachers, about 80 % of them, believe that ICT offer the possibility to do more diverse teaching activities. About 70 % of teachers believe that ICT help in raising student motivation, they make students more autonomous in their learning and responsible for their own learning.

Regarding the insufficient use of ICT the teachers state various reasons. 42 % of them think that the very large groups prevent them from using ICT, the curricula and the textbooks are filled with too many activities and do not allow them for an integration of technologies, the coursebooks are not accompanied by the multimedia tools such as cd, audio, video, etc.), schools do not provide teachers with the necessary materials and language professors are not trained enough to use ICT (33 %).





Given the problems encountered in schools, teachers feel that the ways to promote the integration of ICT in teaching (cf graph 5) is the equipment of schools with the appropriate tools (dvd, cd, educational software). They also think teachers need to take a training course on ICT. It is very important to them to have a more specialized technical support on the whole for the integration of ICT in the classroom, it must be a strategy and policy of the school where they teach. For teachers, the integration of ICT in teaching is beneficial to teaching for the reasons mentioned above and which are presented in graph 6. It can be seen that the majority of teachers think that learning and teaching with ICT is the most interesting and stimulating experience. Moreover, the use of technology has become an advantage in the job market, and teachers see it as a positive aspect of their career. They take delight in the use of technology and this makes them feel better teachers.



- Because I have fun doing it.
- Because I like to use the Internet and technology.
- To prove to myself that I am able to learn with Internet technologies.
- Because, in my opinion, the Internet and technology knowledge helps me to prepare for my current profession.
- The ICT is an essential tool in my profession.
- Controling the ICT makes me feel important and competent in my own eyes.
- Learning with ICT is challenging.
- This is an advantage in the labor market.
- It helps me to be better prepared and equipped to my teaching career.
- To prove that I am a person capable of learning through computers.
- For the pleasure of performing works or projects using the Internet and technology.
- We are often forced to use ICT to do certain things.
- To be a better teacher or increase my professional competence.
- I do not know why I would use the Internet and technology in my classes.
- Because learning using the Internet and technology, it's interesting.

Graph 6 - Why using the ICT in class ?

According to the teachers' answers the use of ICT in a foreign language teaching class depends largely on the desire and willingness of teachers. When they use technology, at present, they just present material prepared by them or their students. They are also able to use Office programs and do research in the Net, but they do not have the necessary skills to create their own pedagogical tools in the web.

Schools are mostly equipped with computer labs, all foreign language high schools have computer labs and smartboards labs which are not frequently used. They are better used in private language centers. The labs at schools are not used for language teaching and learning because the groups are large and can not fit in these labs.

In general teachers believe that the integration of ICT is positive and constitutes an advantage not only to students but teachers as well in terms of the labor market. However they need more training and support from schools so that to meet the needs of their students.

9. Conclusions

Finally ICT are certainly interesting solutions in the didactics of foreign languages for all the reasons mentioned above but it must be pointed out that ICT can not be used as a manual or language course book.

In order for ICT to be more productive and not be transformed into a disadvantage, the teacher must think ahead of its use and should take the necessary didactic steps to use it as a teaching tool in class. We should not act based only on the technical potential they present and the exercises proposed and offered by different softwares. On the contrary we should start from an organic relation between the theoretical potentialities of ICT and the practical use in the individual class, so that to build material and activities that enhance learning and active involvement of students in class.

In the Albanian reality the use of ICT proves difficult as far as technical equipments of schools are concerned, but also the teachers need more qualification and training regarding the use of ICT and breaking the taboo on traditional learning.

References

- Altan, J. (2000), « L'utilisation des stratégies d'apprentissage d'une langue dans un environnement des TICE », Alsic [on line], 3, n°1, document alisc_n05-rec3, URL : http://alisc.revues.org/1759;DOI: 10.400/alisc.1750
- Bertin, J-C. (2001), Des outils pour des langues. Multimedia et Apprentissage, Paris, Ellipses
- Brown, A.L. et al. (1982), « Learning, remembering and understanding », Fravell, J.H. Et Markham, M. E., *Carmichael's Manual of Child Psychology*, New York, Wiley
- Cuq, J-P (2003), Dictionnaire de didactique du français langue étrangère et seconde, Paris, Clé International

Ellis, R. (2003), Task-based language learning and teaching, Oxford, Oxford University Press

Grosbois, M. (2012). Didactique des langues et technologies – De l'EAO aux réseaux sociaux. Paris : on line URL Presses universitaires Paris-Sorbonne.

Hirschsprung, N. (2005), Apprendre et enseigner avec le multimédia, Paris, Hachette FLE

Lancein, T. (1998), Le multimédia, Paris, Clé International

Kelly, M. et Grenfell M., (2006), Profil européen pour la formation des enseignants de langues étrangères - un cadre de référence, on line. http://ec.europa.eu/education/languages/pdf/doc489_fr.pdf

Narcy-Combes, J-P. (2005), Didactique des langues et TIC : vers une recherche-action responsable, Paris, Ophrys

Orlifa, S. (2012), Le numérique, Cours D0P31 de Rouquette, C., Sorbonne-Nouvelle, Paris III, Paris

Petitgirard, J-V., Abry, D. et Brodin, É. (2011), Le Tableau Blanc Interactif, Paris, Clé International