

Ict in Efl Learning: how to help the Comprehension and the Production of explicative texts in a Multilingual context

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Abstract

In the present context of globalization education tends to go beyond the traditional limits in order to optimize the learning process and answer the new international requirements. In this perspective, over the past two decades Information and Communication Technology (ICT) has gradually been integrated in the foreign language learning environment in order to help and motivate learners

Children learning to read and write in their first language (L1) generally face difficulties in making out coherence at the local (microstructure) and the global (macrostructure) semantic levels of the texts.

The same difficulties are to be found while dealing with the reading comprehension and the writing skills in a foreign language (FL); however, the situation is much more complex since learners have to activate not only linguistic knowledge about the target language (TL) but also about the representations mentioned in the text and built in the mother tongue (MT). These latter are necessary to activate the corresponding inferences for the construction and the coherence of the text.

The present paper tackles the issue of computer-assistance in the comprehension and the production of English foreign language (EFL) texts; it presents a case study that took place in Algeria with first year university students. The analysis of the data shows that many parameters intervene in the comprehension and the production of a text in the TL: mainly the initial level of the students in the TL and the language used to insert additional information.

The aim of this study is to create and propose systems of hypertexts (close hypertext systems) supported by an integrative theoretical background.

This procedure will allow drawing conclusions concerning the memory process in multilingual and diglossic contexts of EFL learning. It will also show that such assistance fosters creative writing and enhances cultural awareness.

1. Introduction

In the new globalized world, education paradoxically symbolizes both stability and (r)evolution; indeed, schooling guarantees a kind of protection towards the upheavals caused by globalization and at the same time it appears as one of the main authors of the globalized and numerized society.

However, educators and the society on its whole are bringing into question the way education has to be reformed in order to answer the requirements of this globalized, plurilingual and multicultural society.

Teaching tries, more or less successfully, to adapt itself to the new linguistic parameters induced by the globalized society. In that sense, many reforms have been and are still being proposed to improve teaching; however, it keeps on referring to a monolingual –and monocultural- society.



In the present context, research pertaining to the teaching/learning process within a technological dimension becomes fundamental. New interdisciplinary research fields and perspectives are proposed by specialists in literacy –and new literacies- in order to come up to the expectations of the numeral society.

Globalization and ICT have changed the way the world is perceived and the way societies are organized; it calls into question the place of the individual and his identity in the globalized world and of course, the role played by education which is not really prepared to these deep changes.

Along with the spread (generalization?) of ICT, computer-assisted and online learning as well as co-learning are developing; in this context, the linguistic and cultural specificities of the learners are of paramount importance in the comprehension, writing and knowledge construction activities. Research, more specifically research on knowledge construction and didactics (cognitive) have to take into consideration learners' plurilingual and multicultural environments to avoid ethnocentric and thus inefficient theoretical backgrounds.

2. New literacies

Taking into account the plurilingual and pluricultural contexts (of the learners) seems obvious if one endeavours to develop a literacy adapted to the new learning contexts; these latter consider various values systems and different internal cognitive tools – language, writing process and texts-as well as external tools such as ICT.

Literacy has become, through the unceasing development of technological tools, a flexible notion that is interpreted and adapted according to the expectations, questionings and requirements of the society and education in terms of new competencies and learning/teaching process. Changes that underlie these new competencies are occurring more and more often and consequently it becomes more and more difficult to delimit and analyse them.

It follows that competencies in literacy, the representation of their construction and development, and thus their teaching lead to learning models and programmes (didactic and instructional) that have to be constantly (re)adapted. This confirms that research on literacy, including all its dimensions, must be held in an interactive and interdisciplinary way [1]. Indeed, literacy is a complex system and its analysis, in its various parameters, is all the more difficult since questions and potential answers do not always belong to the same research field and theoretical coherence. According to Bruce [2] and Tyner [3] the significant development of computerization and e-communication vindicates new research questions and new set of skills to be acquired.

The nature of education is rapidly changing in the era of globalization; the new interest in literacies indicates that societies and individuals are changing. Twenty-first- societies now require individuals and learners to possess new set of skills to become interconnected global citizens. New interdisciplinary research is thus imperative to rethink and reform education and make it [education] able to meet the challenges of the global world. Actually, are these requirements new competencies or is it a new paradigm?

3. Theoretical background

The various research projects held by the team of researchers "NTIC, Contexts, Langage et Cognition" within the TCAN-CNRS programme aim at creating and validating systems of hypertexts to help the comprehension and the production of texts and the knowledge construction in a foreign language within a plurilingual context. Several research works held in plurilinguistic and multicultural contexts analysed the effects of the mother tongue (MT) on the activation of knowledge necessary to the comprehension and production of foreign language (FL) texts [4]. These research projects are

intended to open new prospects in the field of learning in a foreign language (and not exclusively learning a language) and the knowledge construction within a plurilingual/diglossic context. The goal of such projects is to make researchers involved in the programme, gather data in order to create a common conceptual framework so as to draw reliable comparisons and then propose tools and systems to facilitate the learning process.

Following the theory developed in cognitive psycholinguistics [5], comprehension is defined as resulting from the interaction between a text and the knowledge/beliefs activated by the learner while reading. Understanding a text necessitates not only to activate words meaning but also to build the local meaning (microstructure) and the global meaning (macrostructure) of the text. One of the main difficulties faced by learners in a foreign language is to elaborate semantic coherence at the local and global levels of the text.

Indeed, the reader has not only to activate his linguistic knowledge of the FL but also his knowledge about the world/topic tackled by the text which allows him to make the necessary inferences to build text meaning. In fact, the reader is going to combine what is read with relevant prior knowledge (schema) and his own experience in order to create meaning.

Research works [6] have shown the efficiency of combining the theory of Long-Term Working Memory (LTWM) [7] with the "Construction-Integration" model [8] to expose the correlation that exists between the text and the episodic text memory during comprehension notably in plurilingual learning. These structures illustrate the effect of the reader's personal experience, his prior knowledge and his level of understanding & learning (high-knowledge readers vs low-knowledge readers) [9]. Readers with prior knowledge on the current text, above all when the relevant knowledge activated is constructed in the MT, recall texts with an optimum activation of LTWM and with a better understanding and production of the texts.

4. The experiment

4.1 Objectives

The medium of instruction in Algerian schools is Standard Arabic and French and English are respectively taught/learned as first and second foreign language [10]. At university, the reading comprehension module is exclusively taught to first year students who then deal with literature from the second to the fourth year.

The aim of the present experiment is to evaluate the influence of the mother tongue (Arabic) in two types of additional information (hypertexts) on reading comprehension:

- explanations of parts of the text that refer directly to the content of the text (G1) vs information not available in the text but supposed to be inferred (G2).
- half of the groups read the additional information in Arabic and the other half in English.
- The third group read the text without any additional information (control group, G3)

Indirect information stimulate inferences and thus coherence building of the global meaning (macrostructure) of the text.

The general hypothesis was that the use of Arabic would have a positive effect on the comprehension of the text proposed.

4.2 Participants



The experiment took place at the University of Sidi Bel Abbes (Algeria) with 76 first-year students doing a degree course in English (four years). Most of the students taking part in the experiment have studied English (as a foreign language) as a subject in their curriculum during seven years (secondary school). Students were divided in three groups according to their proficiency level and to the language used to add information.

4.3 Procedure

The experimental sessions took place as extra curriculum activities and consisted of two major stages:

- 1- The participants were asked to read a short text in English selected by the researcher (15 minutes) and take part in an immediate free recall test (R1)
- 2- Eight days later, they read the same text (15 minutes) with additional information; it was followed by a cued immediate recall test (R2)

The reading sessions were computer-based whereas the recall tests were done with paper and pen. The participants controlled presentation rate by pressing the bar space and were free to click on the link whenever they felt necessary.

4.4 Data analysis

Both recall tests (R1+R2) have been compared in order to notice the impact of the different types of additional information on the participants' second reading, information treatment and comprehension. Data analysis shows that:

- Effects of the types of additional information depend on the language used: participants whose hypertexts were in Arabic wrote detailed recalls with information taken from prior knowledge whereas students using hypertexts in English referred directly to the text. There was thus a reliable correlation between type of additional information and language. Participants also benefit from LTWM.
- Results vary according to students' proficiency in English: low-proficiency students produced less complete texts than high-proficiency students.
- There is a significant influence of the cultural background/lack of knowledge about the target culture: students faced difficulties in grasping the meaning of (or refused to deal with) certain situations and avoid mentioning them.

This research tries to put forward the existing interaction between inferences and competencies in reading comprehension depending on the language used to help learners activate knowledge in a pluricultural context.

5. Conclusion

These research works of the CHart Laboratory (Cognitions Humaine et Artificielle, Université de Paris 8) are conducted in various plurilingual environments but following the same theoretical framework and the same methodology in order to gather data and make their comparison possible and reliable.

Developing research on ICT contributes to the analysis, under the new realities of globalization, of the changing relation learner/knowledge and calls for significant improvements in education and training. In order to match the pace of global change, a rapid and extensive reform of education systems is necessary.

In globally connected societies, it is of the utmost importance to develop familiarity with different cultures and thus promote cultural interconnection and global citizens.

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