

TEACHING DIGITAL COMPETENCES IN HISTORY IN SECONDARY EDUCATION: LEARNING TO COMPOSE HISTORY TEXTS THROUGH THE WEB.

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ABSTRACT

History teaching is a complex process basically composed of prior knowledge, disciplinary contents and teaching methodology. This complexity is due to cultural, cognitive and epistemological aspects. Traditionally, history teaching has been based on activities which develop memorization skills rather than comprehension ones.

Even though Information Communication Technologies (ICTs) are often presented uncritically as good tools to improve History teaching and learning, ICTs are not the panacea of history teaching, of course. Their efficacy for teaching depends especially on the instructional methodology used.

The main aims of this study are: 1) to show a way to introduce the Web in secondary education classes in order to teach and learn History; and 2) to estimate the impact effectiveness when using this methodology.

The project we present lasted one year. It is based on WebQuest (WQ) teaching methodology (Dodge, 1995) which promotes strategies to search, manage and elaborate information through the Web. It also helps the development of cognitive and metacognitive processing skills. The WQ-activity finishes with the elaboration of a History text.

160 students of 4th year (15-16 years old) working in pairs and from two different schools were enrolled in the study. The 2 different groups were compared in their expertise in WQ solving and in their skills on history texts elaboration. Macrostructures in the elaborated texts are analyzed according to Van Dijk (1980). The results do not reflect important differences between the two groups, but ongoing analyses of historical contents show good perspectives of learning.

KEYWORDS

Learning Processes; Secondary Education; Web-based History teaching; History text coherence.

1. INTRODUCTION

History teaching is a complex process composed basically of prior knowledge, disciplinary contents and methodology. This complex process is due to particular characteristics that social and historical phenomena present. History learning complexity has mainly to do with different aspects such as: **Cultural**, because History is under social pressure to justify political ideas and is used to transmit learners different points of view on the state; **Cognitive**, because learning from History requires students to think historically, and this requires the development of different skills such as causal reasoning, analysis of time changing, assessing of evidences, or critical reasoning about the sources. (Carretero & Montanero, 2008); and **Epistemological**,

because knowledge in History is composed of items of different nature and is impossible to experiment with their phenomena or replicate them. Also it is provisional and the object of study of History is far from being totally shared due to the different points of view of the historians. Thus it is possible to say that relativity is almost always present in History knowledge (Prats, 2006).

In addition, students present difficulties in Historical empathy. There is a tendency to simplify causal explanations and personify History. It is often due to merely transmission teaching methodologies (Valverde, 2008).

Whereas the Web is presented as a potential to learn History and develop comprehension skills (O'Neill & Weiler, 2006); Our deeper revision of works which includes ICTs to teach and learn History, allowed us to classify them in four general categories regarding their ICTs uses: **1)** 44% of the works see ICTs as information support for teaching History, (e.g. Eamon, 2006); **2)** 24% consider that ICTs are used for substituting all the other information materials, (e.g. Psycharis & Daflos, 2005); **3)** 20% consider ICTs as simulations (e.g. Chang, 2009); **4)** Only 12% understand that ICTs are used to promote information elaboration. The revision showed that ICTs are not being used to develop comprehension skills in History classes as much as could be.

The study here presented pursues information elaboration and considers the Web as a substitute source of information in History classes. The study follows the methodology of WebQuest (WQ) as a process of instruction to make the information elaboration possible.

WQ methodology is defined as an inquiry-oriented activity in which some or all the information that learners interact with comes from resources on the Web (Dodge, 1995; 2001). WQ includes a scaffolding structure which allows students information managing. The benefits of using this methodology to teach have been reported in some studies (Halat, 2008; Abbitt & Ophus, 2008; Klosterman & Sadler, 2008; Zheng, et al., 2008; Kundu & Bain, 2006).

We will show if adopting this constructivist methodology is a good way to promote History learning and develop skills of History texts elaboration.

2. BODY OF PAPER

2.1 Empirical work aim

Our study pursues to:

1. Show a way to introduce Web information to teach and learn history in secondary education level through WebQuest methodology
2. Estimate the effectiveness of using this instructional methodology to learn history and learn the skills of text elaboration by comparing experts and novices in learning through WQ.

2.2 Instructional approach

The instructional approach considers situative perspectives and cognitive perspectives of learning. According to Vosniadou's ideas (2007) this approach tries to bridge both perspectives in an empiric proposal. It considers perspectives as situative because it offers a meaningful context for the activity by giving a narrative, (Table 1). It considers cognitive learning perspectives because it has the following interrelated instructional features:

It promotes inquiry web learning (Perkins et al., 1995; Lim, 2004); it uses the scaffolding system and procedural guidelines to support the learning process (Rosenshine & Meister, 1992); it promotes and facilitates strategies to search and manage web information, to develop cognitive and metacognitive strategies; and to promote collaborative learning (Gros, 2001).

According to the aims of the curricular area, we designed an environment based on WebQuest learning activities (Pifarré et al., 2009) by working on the narratives, on the content, on tasks sequencing, and also on the elaboration of scaffolds. The presentation of the activity organizes students' actions by giving a virtual space and scaffolding. The scaffold system supports to develop the searching, organization and elaboration processes while the activity is being solved. There is a summary of the activity features on Table 1:

Table1. WebQuest activity description. Spanish Monarchy.

WHY DO CATALAN PEOPLE CELEBRATE 11th SEPTEMBER?	
Sections	Description
Introduction	It presents a problem by giving a narrative for the activity. It is short, clear and motivating e.g. 11S is coming and you'll write and read a Manifesto to your mates.
Task	It allows sharing the learning objectives of the activity e.g. What you'll learn is...
Process	4 Steps to achieve the resolution of the main question, detailing what the student must perform and providing scaffolds. Search (1714 11S facts), Select (reasoning the facts), Planning (organizing the selected facts), and Elaborate (write a final product "Manifesto" using the planned selected information.)
Resources	Useful URL for the activity. They were carefully selected by educational psychology experts and also History experts to offer the best History learning webs on the topic. Webs are presented in another frame of the same WebQuest. Double Frame allows reading the information searched while answering the questions.
Conclusions	Revises main contents on tasks that students did and gives a congratulation message.
Assessment	Assessment offered many items that students had to answer.

The aim of process scaffolding is to develop cognitive & metacognitive skills by offering adapted helps in each step. They are presented in many formats such as tables to organize the information, some pieces of advice to search and to select it, and also the phrases which help students to elaborate the manifesto. E.g. *why did you select those facts?*

We've focused in the manifestos since they should include all the activity learning process in their content.

2.3 Method

2.3.1 Subjects & Design

160 secondary school students of 4th year (15-16 years old) came from two schools from a middle class urban environment in Lleida (Spain). The independent variable is level of expertise: 49 students were considered as novices (2005 Group) and 111 as experts (2007 Group) because they participated in others WQs before. Final product (manifesto) is the dependent variable.

2.3.2 Procedure

Students were enrolled in a one-year web-based instructional project, consisting in learning History contents through the Web in a WebQuest methodology. Learners worked in each activity under analysis a total of 5 hours per activity, and they worked in pairs sharing one computer each pair. WQ is composed by 6 main parts including introduction, process, and assessment. Historical contents were worked in "the process" that ends up with a final product elaboration consisting in a Manifesto.

All answers were saved in the server, scored, and analyzed.

2.3.3 Results

Our study analyzed data from the Manifestos. Copy-Paste strategies were controlled by comparing each text product with the sources on the Internet. The analyses showed few cases of complete copy-paste (about 5%). The average words in the texts are 290, and there is a really big difference in word numbers among texts since text production is not limited in the activity.

The first analysis on contents in History; showed that about 85% of the pairs elaborated texts according to the requirements of the activity. 15% had problems with the server, they copied or they could not finish the WQ. We analyze semantic global coherence and main structure of the texts in terms of van Dijk, (1980) studies of discourse analysis.

According to the reference of expert historians, we have set the superstructure of the manifestos, which is composed of 4 macrostructures: **Introduction and contextualization**. It would be reduced to a greeting sentence; **Events explanations**. It refers to the causal network which explains the events; **Wishes and**

purposes. It contains all the claims in the text; **Conclusion/Moral message.** It exposes a moral message based on the explained events. They were stated by applying the macro-rules (van Dijk, 1980)

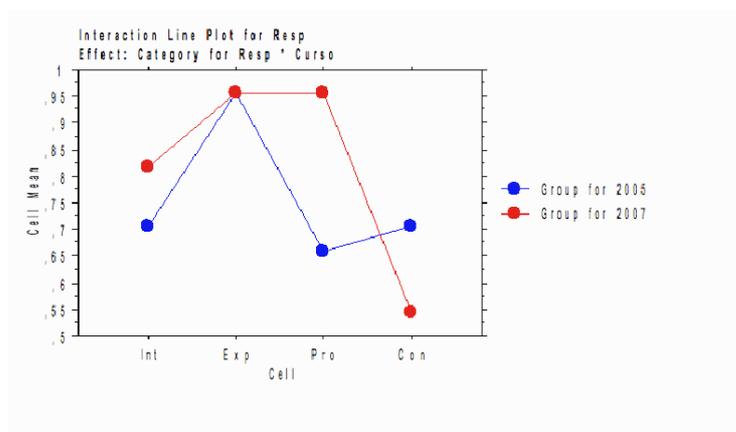
Also a coding scheme was designed to analyze Presence/Absence/Mistakes. Table 2 shows the differences between “Novices” and “Experts” on macrostructures contents. The longest and more used macrostructure is the second one. Historical content was analyzed in each macrostructure and the “Event Explanation” was the one with more contents.

Table 2. Manifestos’ Macrostructures. Experts and Novices results.

MACROSTRUCTURES		I Introduction	II Events	III Wishes	IV Conclusion
Novices Subjects	Presence	78,26 %	91,30 %	47,83 %	52,17%
	Absence	17,39 %	4,35 %	47,83 %	43,48%
	Error	4,35 %	4,35 %	4,35 %	4,35%
Experts Subjects	Presence	58,49 %	79,25 %	54,72 %	58,49 %
	Absence	24,53 %	3,77 %	28,30 %	24,53 %
	Error	16,98 %	16,98 %	16,98 %	16,98 %

A Mixed Factorial ANOVA shows significant differences between categories ($F(3, 192) = 9.486, p < .0001$). Even though there aren’t global differences between groups, there are differences in groups X answers interactions. ($F(3, 192) = 4.707, p = .0034$). As Graphic 1 shows, the sense of differences in the introduction and conclusions is less frequent. Moreover in the main category of the manifesto (Proclaims) experts’ performance is better than novices’, which suggests that experts’ processing perhaps is deeper.

Graphic 1 Interaction Line Plot Answer. Category X group (Expertise Level)



Finally, existing superstructures need the presence of all four manifestos’ macrostructures. Results allow us to state that 41% of the texts contain the Manifesto’s complete Superstructure which we infer is due to the reading tasks along the WQ activity making. 31% of the texts contain two or three of the manifesto’s macrostructures that compose the superstructure and 26 % of the texts just contain one or zero macrostructures. We are currently proceeding to the text content analysis with the aim of valuing local coherence and some

other aspects such as macrostructures categories presence / absence in function of both variables. Also in historiography content analyses reflected in each category.

3. CONCLUSION

Even though just 40% of the pairs were able to write texts according to the requirements of the manifesto, 70% of the pairs were able to compose texts that contained 2 or more macrostructures.

Preliminary results suggest that assessment of Historical contents requires precision in the analyses to specify what students really learn in the instructional project. Ongoing content analyses will give some clues about the WQ validity to learn History in terms of local coherence and causal network.

The number of study subjects we have, limits the scope of the statistical results. It would be interesting to carry on a similar study with more subjects, specifying more carefully the expertise conditions and contrasting the conditions between experts and novices. This study would allow to rule out definitely an expertise effect in the learning of History by using WQ.

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