

# A Study about WebQuest: the Importance of the Process in Group Work

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**Abstract:** This paper reports the findings of a quasi-experimental study conducted with two classes in their 2<sup>nd</sup> year of vocational education, which aimed at understanding the importance of the process in solving the WebQuest task and its implications in learning. This research implied the design and application of two long term WebQuests, using the English Language, entitled “Looking for a job in a hotel”. We observed that students who had the complete WebQuest were quicker to solve the activities, because they were guided in the roles that each element should perform. No statistical differences were obtained. The WebQuest enhanced students’ constructive role in the understanding of concepts related to the thematic. Students valued the work developed; they accomplished the activity successfully and considered the WebQuest an enriching experience.

## Introduction

The WebQuest concept was developed in 1995 by Bernie Dodge and Tom March with the purpose of leading the teachers to create educative activities taking advantage of the information existing online. These activities are “contextualized and motivating, available on the Web, proposed by teachers to be solved collaboratively by a group of students” (Carvalho, 2002: 144).

According to Dodge’s model (1999), a WebQuest is a document with an Introduction, the indication of at least a Task, the way students will accomplish it in the Process, the Resources where students find the information needed to accomplish it, the Evaluation used to evaluate the product resulting from students’ work and a Conclusion.

According to Dodge (1995; 1997) the WebQuests can be short term (between one and three classes) or long term (from one week to a month). A short term WebQuest is focused on the acquisition and integration of a certain amount of knowledge by the student. A long term WebQuest allows a deeper analysis of concepts as well as broadens and reinforces the acquired knowledge.

As Carvalho (2007) states, the WebQuest big secret depends on the thematic, on the task and on the Process guidelines. It should motivate students to the search of the information needed, adapting it to their previous knowledge, leading them to develop their critical thinking. We agree with Dodge (2006) when he states that “the WebQuest model continues to grow and change, but at its heart it remains as an important tool for preparing young learners to think for themselves”.

Since its appearance in 1995, many were the investigations conducted related to the use of WebQuests in educative context (Lima, 2002; Quadros, 2005; Lara & Repáraz, 2005; Strickland, & Nazzal, 2005; Kanuka, 2005; Cruz, 2006; Lima, 2007; Vieira, 2007; Costa, 2008; Laborda, 2009; Torres, 2009). According to these studies, we may conclude that students seemed to have learnt with the solving of the WebQuest, developing their critical spirit and their autonomy in the construction of their own knowledge.

However, from the research made, we didn’t find any study on the importance of Process in solving the WebQuest, maybe due to the fact that Dodge emphasized the Task.

## Research question

This methodology has been used in several and different areas of knowledge, namely, History (Cruz & Carvalho, 2005; Cruz et al 2007; Martins 2007), in ESL (Souza, 2000; Alves, 2006; Barros, 2006), in Natural Sciences (Neves, 2006; Vieira, 2007; Barroso, 2009) and in Mathematics (Cruz, 2006; Xavier, 2007; Costa, 2008). However, none of these studies covers the Process's importance, one of the most important components in solving a WebQuest.

This research intends to evaluate the Process importance in solving the WebQuest. Thus, the research question was: What is the importance of the component Process in solving the WebQuest?

The main goals were (i) to verify if the Process guides and favors students' work in performing the final product; (ii) to understand how the collaborative relations are established between the group members while solving the WebQuest; (iii) to verify if the WebQuest contributes to the students' motivation and effort in learning, in the knowledge construction and final product achievement; and (iv) to gather the students' opinions on the WebQuest's resolution.

In this investigation we evaluated the implications of group organization bearing in mind the division of roles for each element in each group. We also took into consideration the accomplishment of activities to promote collaborative learning.

## Methodology

We conducted a quasi-experimental study. We compared two 11<sup>th</sup> grade classes, level 6, with different treatment concerning the Process. The experimental group had access to the complete WebQuest<sup>1</sup> (Figure 1) and the control group<sup>2</sup> (Figure 2) had access to the same WebQuest differentiated in the Process which had only the resources needed to accomplish the Task. The WebQuests were made according to Dodge's model (1999a). The Teacher Page can be accessed from the main page.



Figure 1 – Experimental Group WebQuest



Figure 2 – Control Group WebQuest

These WebQuests were created with the intent of improving and developing students' vocabulary in areas such as Tourism and Public Relations. The WebQuest presented a job offer to which students should answer by uploading a video to YouTube, staging a dialogue on one of the situations presented.

To collect the data from this research, we used the following techniques and instruments:

- Questionnaire to all participants, at the beginning of the study, to characterize the subjects' digital literacy and their interest in learning English;
- Observing students while solving the WebQuest, with resource to a diary;
- Questionnaire to all participants, at the end of the study, to obtain the subjects' opinion on the use of the WebQuest.
- Analysis of the final products created by the students.

<sup>1</sup> [http://www.epmurca.net/WQ\\_RP](http://www.epmurca.net/WQ_RP)

<sup>2</sup> [http://www.epmurca.net/WQ\\_Tourism](http://www.epmurca.net/WQ_Tourism)

## Sample Characterization

The experimental group integrated 19 students and the control group 12. The average age of the two groups was 17. Most of the students from both groups stated they liked English, although there was a significant number (31% in the Experimental group and 8,3% in the Control group) who declared they didn't like the language. Nevertheless, they unanimously agreed that English is important to get a better job, considering it an important tool in the labor market and even regarding it as the universal language. Both groups expressed their preference for group work rather than alone justifying their choice with the fact that working in group enables learning and there is more knowledge sharing.

All students had a computer and the majority had Internet access. Students liked to access the Internet, at home or at school, and they liked to work on the computer using it daily. The software students most used are the PowerPoint, Word and Paint. There were a low percentage (10,5% in the Experimental group and 8,3% in the Control group) of users of Publisher, Audacity and Movie Maker. Students also used other software (Photoshop, Freehand) related to the technical component of their courses.

All students use the computer to send/receive emails, to chat, to download music or films. They use the Web to search for personal topics and for school projects and presentations, mainly for the English subject, considering the Web an important tool for learning English.

## The Study

The study was held during the second term. The WebQuests were solved over the teacher's classes but there was the need to ask for extra classes once the study took longer than initially predicted. The WebQuests were applied simultaneously to both groups, although in different schedules.

Before the WebQuests' application, the subjects filled in a characterization questionnaire about their digital literacy and their attitude towards English. The subjects explored some WebQuests to get familiar with its structure. During three sessions the groups received their treatments, performing the tasks suggested in the corresponding WebQuests. During the work sessions the teacher took notes in the class's diary, to record the subjects' reactions and behavior, so that later on they could be used to help interpret the results. In the end, both groups did the self and hetero-assessment work done in group. Finally, subjects answered an opinion questionnaire on the WebQuest.

## Findings

Before the students solved the WebQuest, they answered a knowledge test (pre-test) to make sure that both groups were similar in what concerns knowledge. The results from both groups were compared through the non-parametric test Mann-Whitney U (Table 1). Results did not show statistical differences ( $p=0,966$ ) which allowed us to say that both groups were equivalent at the outset.

	<b>Experimental Group</b>	<b>Control Group</b>	<b>Corrected-Z</b>	<b>Statistical significance</b>
	<b>Mean position</b>	<b>Mean position</b>		
Test	16,05	15,92	-0,042	$p= 0,966$

**Table 1:** Pre-test Statistical Results (Mann-Whitney U Test)

At the end of the study, using the same non-parametric test, we compared the final results obtained after solving the WebQuest (Table 2).

	<b>Experimental Group</b>	<b>Control Group</b>	<b>Corrected-Z</b>	<b>Statistical significance</b>
	<b>Mean position</b>	<b>Mean position</b>		
Test	4,13	3,83	-0,180	$p=0,857$

**Table 2:** Final results (Mann-Whitney U Test)

The final results showed that there were no statistical differences ( $p=0,857$ ) between the two groups which meant they were equivalent in the learning achieved.

The experimental group, whose Process presented a division of roles by each group element, acknowledged that the fact of having this guidance had a positive impact in the final task achievement.

The students of the control group recognized that the experimental group WebQuest Process had access to the activities assigned to each group element which would favor the task resolution (Table 3).

<b>Activities assigned to each group element would favor the Task resolution</b>	f	%	<b>Justification</b>	f	%
Yes	9	75,0	All elements worked	8	66,7
			Easier to organize information	1	8,3
No	3	25,0	More group autonomy	1	8,3
			Not relevant	1	8,3
			It was more confusing	1	8,3

**Table 3:** Easiness in Task resolution

Nevertheless, this group reported that they preferred to solve their WebQuest and not the experimental group WebQuest. Such a finding may be due to the fact that students considered they have accomplished their task successfully but the truth is that, based on the direct observations by the teacher and the written works, these students had more difficulties in solving the activities suggested by the WebQuest and needed more time to solve them. If this were a short term WebQuest the control group wouldn't most likely have succeeded in solving the WebQuest.

In the experimental group the activities were developed quicker. Besides, the relation among groups was more peaceful and there was more mutual help. In the control group there was a certain disorientation which instigated clashes among the elements of each group. The learning done in group increased motivation, favored the development of positive attitudes towards learning, promoted self-esteem and improved interpersonal relations among the elements.

By sharing tasks among themselves, each student had his part in the group, promoting interdependence between them and the sharing of responsibilities. Through these interactions cognitive processes were activated that led to the content's comprehension and the construction of the final product. By working collaboratively, students understood that solving activities in group becomes more profitable than working alone.

In the end, students recognized that the WebQuest's methodology enabled the development of abilities and attitudes much more than classes given by the teacher (Table 4).

<b>Experimental Group (n=19)</b>					
<b>The WQ presents more</b>	f	%	<b>Reasons for your choice</b>	f	%
Advantages	15	78,9	Method more attractive	1	5,2
			Enriches the vocabulary	3	15,8
			Classes are not so monotonous/tiring	3	15,8
			Did not answer	8	42,0
Disadvantages	4	21,1	More distractions	3	15,9
			In a traditional class there are more clarification of doubts	1	5,2
<b>Control Group (n=12)</b>					
<b>The WQ presents more</b>	f	%	<b>Reasons for your choice</b>	f	%
Advantages	9	75,0	Method more attractive	5	41,6
			Enriches the vocabulary	2	16,7
			Classes are not so monotonous/tiring	2	16,7
Disadvantages	3	25,0	More distractions	1	8,3
			In a traditional class there are more clarification of doubts	1	8,3
			The school's Internet is slow	1	8,3

**Table 4:** Advantages and disadvantages in solving a WebQuest compared to traditional classes

Students considered the work developed as interesting, motivating and enabled the knowledge

acquisition. Along the study students became more autonomous, freeing themselves from the teacher to whom they turned to as a last resort, when their peers couldn't help them.

## Conclusions

Although the final results didn't show statistical differences ( $p=0,857$ ), we considered that the experimental group managed to solve the WebQuest in a more methodic way. For that, the guidelines on the Process had an important role and also had a part for a more regular group work with mutual help amongst them and to the collaborative construction of knowledge. Where the control group is concerned, we noticed that sometimes they were a little "adrift", with no orientations to show them the way. The relationship between group members was conditioned by this factor because everyone wanted to be the leader.

We were able to conclude that the WebQuest methodology enhanced an autonomous and active learning by the students which permitted to change and modify the way that classes were usually taught and thus we defend its insertion as a supportive tool to the collaborative construction of knowledge.

For further research and based in our results we suggest to compare the impact of the process in solving short term WebQuest.

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