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## **WebQuests: a tool or a transdisciplinary methodology?**

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### **Summary**

The role played by WebQuests and their impact on teachers' training is the aim of this piece of writing. WebQuests are a permanent item we have been dealing with, since 1999, in teachers' training courses and workshops. Here we describe the history and the experience we have on this subject.

As a matter of fact, Setúbal Higher School of Education and its Competence Centre have been developing pre-service and in-service teachers' training workshops and courses where WebQuests have continuously been present as the main content.

We try to present the breaking and turning point of our experience towards the integration of that methodology in our training sessions, the kind of audience we've been working with, and some reflection on the role of WebQuests in teaching practice.

### **Keywords**

WebQuest; WQ; teacher's training; methodology; teaching; learning; reflection

## **I - Introduction**

The concept of WebQuest was created in 1995, by Bernie Dodge, a professor of San Diego State University, who defines it as

“A WebQuest is an inquiry-oriented activity in which some or all of the information that learners interact with comes from resources on the internet, optionally supplemented with videoconferencing.” Dodge (1997)

This paper is not particularly about the different phases of the construction model created by Dodge; anyway, we indicate, briefly, the different components of this methodology of educational use of the Internet. So, a WebQuest is constituted by:

**Introduction** – providing the scenario and the background information

**Task** - explaining the activities to accomplish and must be meaningful and relevant to students

**Process** - indicating the steps or phases to follow and the Resources or sources the students may need to accomplish the task

**Evaluation** - mentioning the way students are going to be evaluated

**Conclusion** - stressing the advantages of making that kind of work; defying students for further learning on the theme.

This methodology has been integrated, since 1999, in pre service and in service teachers’ training activities in Setúbal Higher School of Education (ESE de Setúbal) after a reference made in an interview made to a secondary school teacher.

The next contact with the information available on Dodge’s site and the analysis of WebQuests, designed by teachers of different teaching levels and areas, made clear the understanding of its educational importance.

Taking for granted that this methodology had enormous potentialities for education and it was an adequate means of integrating the Internet in classroom activities, the next step was the preparation of a divulgation session, open to our school teachers and to other teachers, belonging to other teaching levels.

To frame this first internal teachers’ training in ESE de Setúbal, we produced a document online which we just called WebQuest, published on Abolina Project (<http://www.ese.ips.pt/abolina/webquests/quest/index.html>) in the area we called Web Adventures (Aventuras na Web). This was an adventure on adventures, as it has been named, having the document assumed itself the structure of a WebQuest. Taking advantage of the curiosity towards the educational use of the Internet that was arising, at that time, among teachers, our goal was to

promote some internal discussion on the interest of this methodology at an educational level, and to intervene in in-service teachers' training.

Thinking over this first divulgation workshop, we can say that, although we had at the time a certain perception of the potentialities of this methodology, we had no idea of its value at a formative (pedagogical) level, and as an excellent means of promoting educational integration of ICT, as it is recognised today by many teachers.

Some of the questions raised, during the first training session, and others that came up along the reflection made on the work developed, have then been recalled in debates and informal discussions among the team of teachers and trainers.

Below, we identify some of those questions we consider pertinent.

### **From the topic to the task**

The concept of WebQuest encourages the opportunity to involve actively the students in teaching-learning activities, designed in an interrelationship of contents, interests and necessities.

To construct a WebQuest it's required planning and development, with a relative degree of complexity. As the authors refer, the starting approach to WebQuests must follow an evolution line from simple to more ambitious. In this training movement, the goal is to provide teachers with moments of debate and discussion about this methodology in order to facilitate the construction of quality educational materials and their integration in classroom activities.

The first question to ask within the construction of a WebQuest relates to what the teacher wants the students to learn. In this sense, the decisions made about the choice of the topic and the definition of the task are crucial moments and in some cases key factors for the elaboration of a WebQuest.

The formulation of hypotheses, relative to the topic, is almost always associated to a first approach to the web, being its aim the search of quality and quantity materials, adequate in terms of content and age level to the students.

The control of Web searching techniques and the natural difficulty in searching adequate information, in a reasonable period of time, seems to generate, very often, a kind of frustration feeling in teachers. One of the most frequent reactions to this is the hasty attempt, to change the topic. However, the teachers' persistency leads them to the contact of new and even unexpected materials which, after evaluation, contribute to the formulation of the starting ideas, changing what seemed to be a feeling of misfortune into a new challenge and enthusiasm, bringing about ideas for other tasks, different from the ones which had been predetermined at the time of the first topic choice. As a matter of fact, it seems that quite often do resources compel the final choice to define the task to be accomplished by the students, overcoming the initial interests of teachers.

During the next step – the definition of the **task** – and on a first approach we find many times a kind of confrontation between task and process. In some cases the **task** is described, highlighting the contact of students with information, rather than the involvement in learning promoting activities, which must be materialised in the final work to be done by the students. This way, the definition of the task assumes general features, rather dim, and in some cases it provides several (*mis*)*understandings* in confrontation with a very descriptive **process**, detailing every step of the students' work. In other situations, it's the *task* that's described in a creative way, including a sub division of the task, and the integration of different activities to be done by the students.

The trainer's intervention, in these situations, is an interesting challenge because, on the one hand he (she) has to overcome a few uncertainties of the teacher over the discussion of his(her) proposition, and on the other hand, during the construction of a WebQuest, it's not always easy to understand the teacher's perspective, as he (she) may not yet have precise ideas about the **final product**, although he (she) may have already written suggestions. One of the adopted strategies is to let him (her) develop a little further his (her) proposal and try to confront him (her) with the analysis of the different components (**introduction, task, process**) trying to highlight their relationship and make clear the definition of the **task** and the analysis of the available **resources** for students.

This strategy of leading to reflection over the coherence and the articulation between the different components, already designed, seems to diminish the teacher's anxiety as for the waste of time during the final choice of the topic and the search of adequate resources on the web. To make the trainee teachers go through the different components of the WebQuest seems to be an appropriate process and it's a fundamental help which makes the trainees redo and/or enrich their proposals, integrating new ideas and new items resulting from the contact with Web resources.

### **A question to be solved**

One of the pedagogical arguments for the attribution of social roles to the students concerns the fact that that strategy promotes the collaborative work, developing in the student a deeper knowledge on a particular aspect of the activity, working as a motivating learning factor. A second and more practical aspect is related to some topics that may be more complex, more comprehensive and/or controversial. In these cases their exploration by the students may be facilitated or made more adequate using sub-tasks.

Assuming a WebQuest as an activity which is developed in group work, sharing responsibilities in every group may take for granted the attribution of roles to be played by each group element, getting involved in the activity in a way that the final work is not only the amount of the parts but a final assignment, accomplished with everybody's help.

Some of our WebQuests have a different feature. Three of the first WQs made in our School, by pre-service primary teachers (Mathematics/Natural Sciences variant), present the task development in groups, playing each one of them a different role, not distinguishing the activities to be done by the elements of the same group.

These three WQs have been published on Abolina, as it has happened with the first twenty WQs made by trainee teachers in our School, being afterwards considered examples and analysis themes in later trainings. This model has been adopted by other teachers because, as they've stated, it emphasizes the diversity of knowledge on the same reality for different student groups, as well as a richer interaction among students after school. In some of these cases there's a final activity which tries to involve the whole class in its accomplishment.

There isn't yet a firm idea of the best process to follow, but the flexibility seems to be the most realistic solution.

## **Process**

During the time we've been involved in teachers' training, concerning the conception of WebQuests, we have felt that it's during the elaboration of the process that teachers think more of their students.

During the Basic School Teachers' Training the factors that are more often referred concerning the students are their age level and maturity, as well as the existence of adequate competences to work with the Internet.

These two factors are related with the kind of proposals that the teachers make. Sometimes it's apparent in the simplification of the task, other times in overdoing the sub-division of the work to be done by the students.

In certain experiences made in the classroom, the decisions related to the referred factors have led the teachers to share their reflections on the students' achievement and on the final products. For these teachers the students' involvement in the different activities and the final works refute the exaggerated fears related to the mentioned factors, which if not carefully measured, may be impeditive of designing an adequate educational activity for students.

The way the teacher organises the **Task** and the **Process** offers him (her) the possibility to develop a logical structure of small tasks and helps, having the students in mind, as well as the appropriate methods that may favour their activity.

Dodge (1999) suggests an amount of procedures that proves to be an indispensable support that teachers may recur to, to get a more sustained decision on the proposal to make, particularly on the tasks to recommend to the students, according to the chosen topic. According to this author, the decision about the task choice must not be speeded up; on the opposite, it must be a decision based on the reflection of several meaningful factors, which must be matured in teachers' minds.

## **Evaluation**

Each WebQuest needs a **rubric** for evaluating students' work. The standards should be fair, clear, consistent, and specific to the tasks set. Many of the theories of [assessment](#), [standards](#), and [constructivism](#) apply to WebQuests: clear goals, matching assessments to

specific tasks, and involving the learners in the process of evaluation are all concepts from earlier workshops that apply here.  
Concept to classroom. (2004)

If it's not easy to build up a WQ, especially if it's the first time we do it, and if all the phases imply a great deal of reflection, the evaluation step is no less important and worth a second thought.

As a matter of fact, we think it's the step of the WQ the teachers pay less attention to, as they may consider the **process** far more important than the result of the work, which is true, to a certain extent, as the practice shows.

Nevertheless, we've always claimed our trainees' attention for the evaluation as an integrant part of the WQ, which shouldn't be neglected by the teachers.

The experience, however, gives us a different picture of this. In fact teachers never pay much attention to evaluation and they have the idea that this phase is just to give tips to the students, about their commitment and performance during the development of their projects.

On the other hand, and very often, evaluation just focuses on the final assignment and it frequently refers only to the final part of the assignment, the work presentation.

This may be the weakest point when designing WebQuests, as it withdraws a bit its serious character, since teachers don't care much about it. Although trainees were always alerted for the necessity of thinking over the WQ evaluation criteria and well defined indicators, the fact is that it wouldn't pass and the majority of the WQs we helped to create in our training sessions are examples of this. Either they are too vague or too minimal, as far as evaluation is concerning, in a way that the true sense of the work developed by the WQ can be questioned.

It's abusive to try to explain why this happens but we must surely be aware of this limitation to see how we can make it work out. It's perhaps one of the skills teachers have to reflect more on, so that they can understand the value of this WQ phase, even in terms of helping them have a precise idea of what has each student achieved during the WQ development and how they can measure the students' intervention at several levels. If teachers realize how practical and helpful this can be, saving them lots of time and boredom, maybe they will pay more attention to it.

## **II – The WebQuests in the classroom**

Although the WQ methodology has been worked in some pre service training curricula, as well as in complementary and specialized training, it is in in-service training that this strategy has been worked more persistently and with more adequacy.

This way we can say that there are several courses and workshops where the WQs are an integrant part of their syllabuses, including also several cases of workshops dedicated to this methodology. This is the case of the workshops "Do espaço virtual à sala de aula" (From the cyberspace to the classroom) and "Na Internet: Navegar com sentido" (On the Internet: sensible surf) where we've worked with

teachers of several curricular areas and teaching grades, namely primary and secondary school grades. These workshops have always included a practical component to produce WQs, meant to be used in the real field work with students of the trainee teachers.

As a matter of fact, the produced WQs, some of them better achieved and others less, according to the degree of understanding and commitment in the appropriation of the methodology by the trainees, have not always been subject to experimentation they were supposed to include.

This fact is, no doubt, the most negative factor of these training workshops, therefore lacking a serious reflection on the impact of this methodology on the teaching and learning processes of different curricular subjects. Anyway, some statements have been made, constituting reliable indicators of the success and limitations of the methodology.

One of the trainees, for instance, confirms the success of the methodology through the orientation she gives to her students, even when they are already used to working in project, with the consequent result of better final products, both in quality and in quantity.

On the other hand, another colleague, who has been interviewed about her experience in the use of WQs in her 11th grade English classes, is peremptory as for the success of this methodology with her students; in fact she has been using practically the same WQ "The role of the media in world conflicts" for 4 years, that she created in a training workshop in ESE de Setúbal in 2002.

She says:

"I think WQs are a good strategy for teaching languages, because students like it very much; they even surprise me for what they manage to do. The manuals should include this proposal for various topics they integrate; teachers could have, this way, one more chance (choice) of working with their students in a different way."

Teacher FR Statement

She considers that students learn more with this methodology at several levels, such as the team work, the management and organization of information, the autonomous work, not to mention the English language skill level, maybe because they spend more time using English to accomplish the proposed tasks, doing research in English language sites, having to produce materials in English which are assessed later, according to several criteria, including the language accuracy.

"Students seemed to have learned, above all, as far as language, attitudes and values acquisition level is concerned."

Teacher FR Statement

In the interview to this teacher we must emphasise that she considers it is at the level of the final products, resulting from the proposals made in the task that one can realize, in a better way, the worth of the WQs in the learning-teaching process, in this case, of a language.

She says:

“The results are very good, above all concerning the team work, the final products resulting from the proposals made in the task, the commitment of the kids, the organization of the work and the summaries they are able to do.”

Teacher FR Statement

As for the obstacles to the integration of WQs in the daily routine of the teachers, she is quite clear when she says that the support necessary for the use of a WQ turns this practice into a bit more complex process, for the need of an equipped classroom with computers and Internet access, which is not always an easy issue to deal with:

“The main limitation to the use of WQs in our classrooms has to do with the support frame necessary, with specific equipments and physical resources (room, equipment,, Internet) which schools, sometimes, don't provide.”

Teacher FR Statement

### **The WebQuests in language teaching: experimentation reports**

To fulfil the aim of interacting dynamically with the teachers of schools, belonging to the **LapTop Project** in Portugal, that had been distributed to be supported by the Competence Centre of Setúbal Higher School of Education, we decided to implement distance-learning workshops for Language and Mathematics teachers, as a great number of these schools was situated far away from Setúbal. In languages, the topic proposed for these training workshops has been the WebQuest.

The workshops aimed to be a proposal that would work in the sense of the appropriation of a technology by the teachers and the subsequent experimentation in the field with students, reflecting on their practice afterwards. So the workshops had the following goals:

- To acquaintance language teachers with a methodology of great educational success: the WebQuests
- To motivate language teachers for the use of ICT in educational contexts, namely the ones connected to the Competence Centre of Setúbal Higher School of Education
- To search, organize and analyse WQs, adequate for language teaching
- To experiment and report the use of WQs in language classes

From the workshops assessment made by the teachers, we can assure that the suggested methodology seemed to be quite appropriate to the goals schemed for the training

So, as for the suggested tasks the majority of the involved teachers carried out the plan which included a sequential proposal, during more or less a month and a half, of four (4) challenges.

On a first phase, we tried to make the teachers aware of their training space in a moodle platform, open for this purpose, suggesting they should personalize it.



Next, in **task 1**, trainees had to explore several sites and resources to get acquainted with the methodology WebQuest, so that they could answer the questions about the methodology, present in the forum open for the purpose.

In **task 2** we suggested the teachers to choose and analyse critically a WQ, from various sites proposed, according to the subject they were teaching. A guiding document for the analysis was provided, sent, later on, by the teachers to the moodle platform.

**Task 3** consisted of the divulgation of date, hour, class, form and WebQuest to be used in the field experimentation with students. This activity anticipated a public contract of the trainees in which they'd tell how they would use the chosen WQ with students, having previously taken care of the whole logistics necessary to this kind of lesson.

In **task 4** teachers had to do and share the experimentation reports of the use of the chosen WQ with students, trying to show what the class had really been like, with the WQ they had chosen. We suggested the integration of classroom photos, cautiously treated, for security reasons. A guiding model for the report of the experience made by the trainees was suggested, although teachers might follow it or not. Almost all used this model to report their experiences.

Later on, we suggested the trainees, if they considered wise, to publish on the platform the most relevant student works, within this training period. Although few materials were sent there, the space got richer as time went on.

The reports of the WQ experimentation with students proved that the methodology provided classes with great student motivation and interest, having the teachers mentioned, the feeling of educational success for several times.

"A WQ, if well designed, may become a strong ally, both in the motivation work necessary to the creation and maintenance of reading habits and in the implementation of activities that may facilitate the exercise and the development of skills to deal with information.

"So, I think we can speak of educational success, either concerning motivation, or concerning the process as it's a methodology of work that's framed on a certain structure that helps the students along their way, to achieve certain goals.  
Teacher MJMN statement."

The students accepted the classes with WQs with great enthusiasm, being reported both teachers and students' wish to repeat this kind of class activity.

"As for the students, their satisfaction, good mood and commitment were the best. I've taught, but I've also learnt much and the atmosphere created was very nice. What's left is the wish to repeat it and the sorrow for not having worked this way before. The share of knowledge and the help were natural. There are always ICT experts!"  
Teacher GS statement

“Successful lessons, the sense of student autonomy and of a different class with WQs in language teaching were also recurrent topics of the good practice reports made by trainee teachers.”

“The students loved the experience of looking for answers to their questions in an autonomous way and at their own pace. They didn’t feel forced to wait for their colleagues when they ended their activity ...” They really enjoyed this different way of having an English lesson”.

Teacher APB statement

“I think it’s been a very interesting activity for the students and it’s been very rewarding to watch them stuck to the screens, looking for information necessary to the accomplishment of the recommended tasks. No doubt that in terms of motivation it’s been a total success.”

Teacher CL statement

There are also several teachers’ statements concerning the kind of learning achieved by the students:

“I think this WQ is an answer to the necessity of adopting work and learning personalized methodologies; it leads to the search, selection and organization of information to change it into active knowledge. It also allows the adoption of adequate strategies to solve problems and make decisions, using the foreign language to communicate accurately [...]”

Teacher CL statement

We must also highlight the contribution of the WQ to the behaviour improvement of students with difficulties in knowing how to act in a classroom

“Even the students with more difficulties in French cooperated actively. I must refer that the students showing more difficulties in behaving in a classroom have reacted quite positively, becoming (momentarily?) committed and responsible students”

Teacher MB statement

It’s also mentioned the adequacy of this methodology for language teaching:

“This kind of work is really adequate for language teaching, as it stimulates the student’s wish to learn and intervene in the structure of his (her) language learning, rewarding his (her) training as an autonomous and prepared student for a permanent education, as it encourages investigation, reflection and innovation of language learning”

Teacher ACT statement

Several teachers stated they are going to use this methodology and integrate it in the year planning of their teaching practice.

“I consider that the use of the WQ has enriched my knowledge and my teaching practice and it will be an activity to include in future school year plans.”

Teacher HG statement

“I became motivated for the use of WebQuests in future topics, inclusive when I’ll teach the Short Story very soon

Teacher IP statement

The students also asked for more of this kind of class work, in spite of the language difficulties some of them had to face.

"The students considered the chance of repeating this kind of class work, although some of them recognised their inability of decoding the text in English, as they are students with lots of language problems"  
Teacher MA statement

Anyway, all the teachers' students have enjoyed this activity and pointed out some reasons:

"We are the ones who look for information; the lessons are very didactic, because as we learn we're doing what we like: surfing the Net; the WebQuests call the students' attention more; we organize the work in a better way; we have more opportunities to improve our marks"  
Teacher MR statement

To conclude, a passage of one of the reports presented, that summarises well everything this methodology promotes and implies

"This activity has been, no doubt about it, very motivating for the students who, in a general way, have developed it enthusiastically and devotedly. As for the research, the students, although familiar with the Internet, showed some difficulties in selecting information. They often chose information which was repetitive and accessory. As for this, I had to help them make the right decisions, before the production of the poster. At the level of task division, there's been a good cooperation, having weaker students worked with better students. As for the final product, almost all the produced posters offered a good distribution of text/ image and some of them lots of creativity. In the final presentation, the students showed more difficulties concerning oral expression, supporting themselves, above all, on the Powerpoint sum up they had prepared."  
Teacher SF statement

### **III – Conclusion**

This paper tries to show how meaningful it has been to train teachers and introduce them to the WQ methodology for several years. Although it isn't assumed as a true study, the paper tries to share our experience, concerning this topic, as training teachers and reflect, with trainees, on the potentialities of teaching and learning with WebQuests.

We have no romantic views on this subject and we know WebQuests are not the medicine for every problem of our teaching system. Anyway we truly believe this strategy is a good help for teachers and fundamental for students, as Tom March stresses.

"Viewed through the eyes of traditional education, who would want a learning resource that presents the world in all its chaos, offers more opinions than facts, and requires a subtle intelligence to sort the gems from the junk? Viewed from a more student-centered, active-learning perspective, what better resource could you imagine! With the Web, students must take charge of their learning and scrutinize everything. WebQuests can help you facilitate this shift and provide students with the skills they need to navigate, rather than surf, the Web. Shouldn't we empower students to reach their destinations, not flounder in the surf of each shifting wave?"  
March, T. (1998)

As a matter of fact, students work and live with technology around. So, why should they be prevented from using computers in the classroom? We believe that many behaviour problems of the school of our days can be solved with the help of the computer in the classroom, but well programmed activities must be prepared by teachers when using technology. WebQuests may be a good answer for this. The focus is on learning and not on technology, and that makes the difference. Besides this, the fact of dealing with project-based learning guarantees the motivation and commitment of students, as Lamb reminds:

“Project-based learning, problem-based learning, and inquiry-based learning all three closely relate to the information processing approach. They all fit well with technology-rich learning environments where the focus is not on the hardware and software, but on the learning experience. In each case, technology is used to facilitate learning. It may be a tool to organize ideas (such as Inspiration), search for current information (such as an online news source), or present ideas (such as PowerPoint presentations). However the focus of learning environment is the student's excitement about solving a problem or addressing an issue they find meaningful.”  
Lamb, A. (2000)

The teachers' training work we've developed for several years has proved the benefits of using WebQuests, both for teachers and for students. Nevertheless, to write a WQ it's not an easy task yet. Sometimes teachers say it's difficult to produce something worth while and they speak of the great deal of work it represents. As Dodge puts it:

“In some ways, a WebQuest puts more burden on the teacher, because we ask teachers to find good useful Web sites ahead of time rather than having kids find them themselves. But, on the other hand, it puts more burden on the kids. And that's where it should be. Because kids have to make sense of what they are reading. They have to learn how to learn, learn how to work with each other, and to work with information that isn't, at first, clear.  
Dodge, B. (2004)

Besides this, the necessary logistics for the use of WQS in our classrooms is still a considerable obstacle for its massive utilization. Anyway, and relying on the majority of the trainees' statements, we believe WebQuests are here to stay and much writing is still going to be produced on this matter.

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