



WebQuest for HRM



**COLLABORATIVE
BLENDED LEARNING
METHODOLOGY
(CBLM)**

VER. 2

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1. The theoretical rationale behind the Collaborative Blended Learning Methodology (CBLM): basic components

1.1 Introduction: 'The Future Society is a learning society'

Rapid changes in technologies and the emergence of new areas of competency are leading enterprises leaders to delegate authority to lower levels within company management structures. This process has emerged initially in medium sized enterprises rather than smaller companies. This delegation of authority is intended to reduce costs and is only incidentally accompanied by the development of new skills and knowledge for managers (Andersen, 2003). However, it is leading to new educational and competency needs by employees.

The global context of technology and, above all, the emergence of the information society, have facilitated access to information and knowledge and at the same time have changed work organization and skill requirements. The new opportunities for technology enhanced learning requires considerable motivation and effort on the part of learners, particularly to assemble qualifications on the basis of 'building blocks' of knowledge acquired at different times and in different contexts.

Education and training, whether acquired in the formal education system, on the job or through informal learning, is seen by policy makers as the key for employability and personal development. Preparing learners to manage the progress towards new business challenges and a new society based on technology is an educational challenge for educators. Blended learning is seen as a potentially powerful pedagogic approach to delivering education. Web 2.0 can support blended learning combining collaborative and self-paced learning enhanced by a variety of Web 2.0 social tools.

This idea of learning is described in the Collaborative Blended Learning Methodology (CBLM). In order to better understand this educational methodology and how it can be used in the training and learning process it is useful first to explore some of the concepts that comprise the theoretical basis of this methodology.

1.2 An introduction to Web 2.0

The Internet and especially Web 2.0 social technologies have changed dramatically the way people communicate and acquire the information.

Web 2.0 encompasses a variety of different meanings that include an increased emphasis on:

- user generated content,
- data and content sharing,
- collaboration,
- the use of various kinds of social software,
- new ways of interacting with web-based applications,
- the use of the web as a platform for generating, re-purposing and consuming content.

The best way to define Web 2.0 is “to make a reference to a group of technologies which have become deeply associated with the term: blogs, wikis, podcasts, RSS feeds etc., which facilitate a more socially connected Web where everyone is able to add to and edit the information space” (Anderson, 2007).

Web 2.0 is not a technology as such, but a new way of thinking, a new perspective on the entire business of software – from concept through delivery, from marketing through support. It is about the interactivity and productivity applications on the internet that provide the ability to produce, communicate, collaborate, share, store, network and learn. Publishing information on the web no longer requires programming or web design skills. The Web itself is being transformed from what was called “the Read Web” to the “Read-Write Web,” in accordance with Tim Berners-Lee’s original vision original conception of the Web as a read-write medium¹.

Web 2.0 technologies have equipped educators with a potentially rich repertoire of services and applications. However, there is a challenge not only to explore and evaluate these emerging technologies, but also to implement them in the most efficient and creative way in and out of the conference room.

The following keywords explain some of the concepts associated with Web 2.0:

It’s an attitude, not a technology: It’s a new mindset to how the Web can be used.

¹ <http://www.w3.org/People/Berners-Lee/>.

A network effect: Describes applications which become more effective as the numbers of users increases. This effect is well-known in computer networks, with the Internet providing an example of how network traffic can be more resilient as the numbers of devices on the Internet grows.

The long tail: With the growing number of the internet users, this can provide new business opportunities for niche markets which previously may not have been cost-effective to reach.

Small pieces, loosely coupled: As the technical infrastructure of the Web stabilises, it becomes possible to integrate small applications. This enables more rapid development of services and can avoid the difficulties on developing and maintaining more complex and cumbersome systems.

Openness: The development of new licences (such as Creative Commons for content and Open Source licences for software) can allow integration of data and the reuse of software without encountering legal barriers.

Trust Your Users: Rather than having to develop complex access regimes, a more liberal approach can be taken which can make use of service easier.

Network as a platform: The Web can now be used to provide access to Web applications, and not just information resources. This allows users to make use of applications without having to install software on their local PC.

Always beta: With Web applications being managed on central servers, rather than on desktop computers, it becomes possible for the applications to be enhanced in an incremental fashion, with no requirements for the user of the application to upgrade their system.

1.3 Collaborative Learning

According to the 70:20:10 model (McCall, Eichinger and Lombardo, 2010) developed at The Career Architect Development Planner, published by Lominger Limited while 70% of what we learn at work is experiential and 10% is formal, a sizeable 20% comes through observing, collaborating with and receiving feedback from colleagues. Collaboration has been defined by Linda Harasim (1995) as «...any activity in which two or more people work together to create meaning, explore a topic, or improve

skills». Peter Jarvis (1987) stated that learning always occurs in social situations and that learning is both a social and a personal phenomenon. The sharing of multiple perspectives tends to increase the knowledge learned and the satisfaction derived from the process. There is evidence from traditional classroom environments, non-traditional face to face environments, and from on line environments to indicate that collaboration can enhance learning. What do we mean by collaborative learning and in what ways can it positively affect learning?

In training collaborative learning processes can lead to:

- a. High achievement – social & personal development:** Collaborative Learning promotes high achievement as well as personal and social development. Li (2002) came to this conclusion after surveying more than 1,000 research studies investigating the relative effects of collaboration, competition and individualistic interdependence.
- b. Motivation:** Collaborative Learning increases the understanding of content and provides greater motivation to stay on task.
- c. Independent learners – team learners:** Collaborative Learning helps trainees actively construct content, take responsibility for their work and resolve group conflicts. It is especially important in the context of developing team work skills.
- d. Critical thinking:** collaborative learning enhances critical thinking as it allows trainees to discuss, clarify and evaluate ideas. Collaborative learning fosters the development of critical thinking through discussion, clarification of ideas, and evaluation of others' ideas. According to Johnson and Johnson (1988), there is persuasive evidence that cooperative teams achieve higher levels of thought and retain information longer than those who work quietly as individuals.
- e. Higher order thinking:** Collaborative groups are characterized by shared leadership, shared responsibility for each other, individual accountability, positive interdependence, trainer observation and intervention, direct teaching of social skills and groups monitoring their own effectiveness. If the purpose of instruction is to enhance critical–thinking and problem–solving skills, then collaborative learning is beneficial.
- f. Social and cognitive skills:** Collaborative Learning enhances both social and cognitive skills.

Web 2.0 technologies offer opportunities for participatory learning and training as well as self-paced and autonomous learning. Blended learning integrates tools and methods within training and learning programmes.

1.4 Blended Learning

Blended learning is an approach to using technology that seeks to integrate different tools and methods and employ them in one programme. The 'key' training idea that is underpinned by blended learning is 'choice'. Being able to select the most convenient methods based on learners' needs is central to blended learning. Thus blended learning can respond to different training needs.

Blended learning is not just a blend of online and face-to-face training but is based on the use of a range of learning material and methods to engage, excite and satisfy the learner (Wilding-Webb, 2011). "There is the need to appeal to all learning styles (Honey & Mumford, 2000) and to ensure learning domains (Bloom, 1956) were considered during the design and delivery phases".

Webquests, which will be explored in more depth later in this report, can offer a mix of methodologies bringing together the most effective instructional practices, theories and models into one integrated activity and including critical thinking, cooperative learning, authentic assessments, technology integration, scaffolding model, cognitive and constructivist theory (Dodge, 1995).

1.4.1 Blended Learning and motivation

Motivation

The motivation of learners is one of the challenges in blended learning. The aim of the Collaborative Blended Learning Model (CBLM) is to develop and support self-motivated and self-regulated learning. Such an approach requires new skills from both trainers and learners, especially as much traditional training in SMEs is quite strongly trainer directed.

Learners may have little experience of self-directed learning and may lack the skills and motivation to plan and direct their own learning. The overall aim of the Webquest for HRM project is to develop self-directed and self-motivated learning as we believe such processes are critical to the development of lifelong learning in SMEs. Trainers have a key role in providing appropriate support for learners at every stage in a Webquest 2.0.

The motivation of learners is one of the challenges in blended learning. Zimmermann (2000) proposed following model of learning and motivation, which helps trainers and learners to understand the process and to define their own learning strategy.



Figure 1. Model of learning and motivation (Zimmermann, 2000)

Planning / Setting goals

- a) Task analysis – what are my goals for this training? How will I plan my learning time?
- b) Self–motivation – What is interesting for me in this training? What do I want to achieve?

Task / Self–control

- a) Self–control – What is my learning progress?
- b) Observation of own learning process – How do I feel using these kind of learning methods?

Self-reflection:

- a) Self–evaluation – What have I learned?
- b) Self-reflection on the learning method - How will I adopt my learning process in the future?

The idea of self–regulation is the core of the Zimmerman model (Zimmermann, 2000). It requires from learners skills in the planning of the learning process, setting goals, completing tasks and evaluation. On the other hand we want to introduce another model from Malone and Lepper, (1987) explaining seven factors affecting intrinsic motivation, which can be applied for adults and SMEs:

- Challenge
- Curiosity
- Control
- Fantasy
- Competition
- Cooperation
- Recognition.

Challenge

People are motivated when they are working towards personally meaningful goals.

The key here is that the goals must be personally meaningful. People need to explore for themselves what they want to or need to learn. This leads us to the Zimmermann model, where learners own goals were also emphasised.

Curiosity

People are motivated by the discrepancy between their present knowledge or skills and what could be achieved. Formative tests can help here – self assessments that they can complete before they start to identify their own strengths and weaknesses. Such a test can be also a part of a webquest.

Control

People are motivated when they can control what happens to them. That means more than simply allowing them to click on the next button.

Fantasy

People are motivated when they can imagine relating what they are learning to real life settings.

Competition

People are motivated when they can compare their performance favourably to others.

Co-operation

People are motivated when they can feel satisfaction from helping others. Participation in activities requiring thoughtful answers increases significantly when people know that their answer will be shared with other learners. Webquests, which includes group tasks, are a good answer to this need.

Recognition

People are motivated when others recognise and appreciate their accomplishments. Nothing undermines motivation more than feeling ignored and isolated. Enabling people to highlight contributions from others creates the possibility for peer approval, and public acknowledgement from a tutor is a powerful tool in maintaining enthusiasm and commitment.

1.5 The Collaborative Blended Learning Methodology connected to Webquest 2.0: a definition

According to the definition proposed by M. Perifanou (2009), the Collaborative Blended Learning Methodology (CBLM) refers to “Webquest 2.0 collaborative projects that take place less as face-to-face meetings but mostly online, supported by (a)synchronous Web 2.0 technologies combining at the same time collaborative learning with self-paced learning”. In the following diagram (Figure:3) the Collaborative Blended Learning Model is presented as a schematic description of the Collaborative Blended Learning Methodology (CBLM).

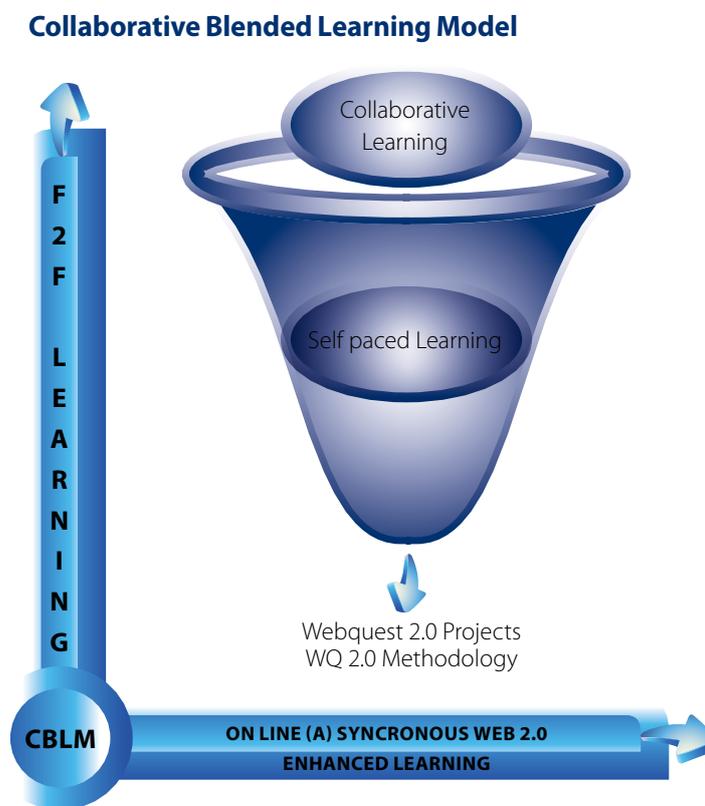


Figure 2. Conception of the Collaborative Blended Learning Model (Perifanou, 2009)

The diagram proposes two learning environments that can be combined: a) Face to face learning and b) On line learning supported by synchronous and asynchronous tools. The combination of both learning environments can offer a blended learning environment in which learners can work in collaboration or in a self-paced mode.

Technology is constantly and rapidly evolving and that means that trainers will have either to find flexible methodologies that can be adapted to the technology changes or to create new methodologies. The Webquest 2.0 embeds the use of Web 2.0 technologies in challenging and interactive tasks. Its general

aim is to place learners in the centre of the process, and to scaffold learning in every step in order to develop not only autonomy and responsibility, but also collaborative, social, cognitive, metacognitive and computer skills. Another educational challenge for this framework is to prepare learners for self-regulated and lifelong learning.

Learners can work on Webquest 2.0 on line and off line, in common face to face meetings or individually. The trainees have the possibility to work in collaboration with their group on their Webquest 2.0 either synchronously (using tools such as Skype or virtual classrooms for communication) or asynchronously (using, for example, a wiki for collaborative editing and discussion) or in both modes. There is a timeline for the completion of each step of a Webquest 2.0 project depending on the type selected, short or long Webquest 2.0.

The Webquest 2.0 is an inquiry-oriented activity that takes place in a Web 2.0-enhanced, social and highly interactive open learning environment, in which the learner can decide to create his or her own learning paths choosing the Web 2.0 tools and the on line resources needed for the completion of the final Webquest 2.0 product. The trainer orientates the learners in their learning process giving them the possibility to choose between more directed or more self-orientated activities and tasks.

1.6 Typical Web 2.0 tools used in business training

There are many Web 2.0 tools, which can be used in for training in companies. These are increasingly being made available as 'cloud' applications, providing easy access for SMEs. There is no need to host these applications on enterprises' own servers, and tools can be used for limited periods of time, when they are needed.

It should be noted that not every Web 2.0 tool mentioned below is well established in every market or country e.g. microblogs are seldom used in Poland, even for business communication. The list below illustrates the possibilities of some of the Web 2.0 tools.

1. BLOGS: A website with entries provided in chronological order. Blogs can be used for a variety of purposes, ranging from reflective learning shared with others online through to dissemination channels for organizations. Blogs are often used by company employees in order to disseminate particular knowledge.

The main characteristics of blogs are the following:

- There are one or several authors that produce entries
- Visitors can add comments
- New entries and comments do not substitute for older ones
- It is possible to subscribe in order to receive news via email or through RSS readers
- Entries usually include the source of information, thus validating it
- There is little need for proficiency in HTML or other coding languages.

Two of the most popular blog hosting services are: *Blogger*² and *Wordpress*³.

2. MICROBLOGGING: This is another type of blog with very short posts of up to 140 characters. They are often used to share web links or other kinds of information. The most popular microblogging service is *Twitter*⁴.

3. WIKI: A wiki refers to a collaborative Web-based authoring environment. The term wiki comes from an Hawaiian word meaning 'quick' and the origins of the name reflect the aim of the original design of wikis to provide a very simple authoring environment which allows Web content to be created without the need to learn HTML language or HTML authoring tools. "A wiki is essentially a website constructed in such a way as to allow users to change content on the site" (Graeme, 2006). A wiki is used to refer to the documents created, the site where it is located and the software to produce the wiki.

The key elements of a wiki are:

- hypertext structure
- social authoring – collaborative production
- process log in "history"
- limited use of HTML
- dynamic document – always under construction

Two of the most popular wiki hosting services are: *Wikispaces*⁵ and *PBwiki*⁶.

² www.blogger.com

³ www.wordpress.com

⁴ www.twitter.com

⁵ www.wikispaces.com

⁶ www.pbworks.com

- 4. PODCAST:** A podcast is a series of digital audio files that are released episodically and often downloaded through web syndication to portable MP3 players, such as iPods. One of the most popular podcasting hosting services is *Podomatic*⁷ while *Audacity*⁸ is a popular free audio editor for recording, cutting, and mixing audio.
- 5. SOCIAL SOFTWARE SERVICES:** Applications which facilitate sharing of different resources such as bookmarks, photographs, etc. Examples of popular social software services include: *Flickr*⁹ for sharing photos, *Slideshare*¹⁰ for sharing slides and presentations and *Scribd*¹¹ for sharing presentations and documents.
- 6. SOCIAL NETWORKS:** Communal spaces which can be used for group discussions and sharing of resources. Two of the most popular social networks services are *Facebook*¹² and *LinkedIn*¹³ for professional networking.
- 7. SOCIAL BOOKMARKING/TAGGING:** A bottom-up approach to provide tags for resources and to allow them to be retrieved. One of the most popular social bookmarking services is *Diigo*¹⁴.
- 8. SYNDICATION TECHNOLOGIES:** *RSS* and *Atom* formats have been developed to enable content to be automatically embedded elsewhere. *Rich Site Summary* or *Really Simple Syndication* was initially developed to support the reuse of blog content. *RSS*'s success led to the format being used in other areas (initially for the syndication of news feeds and then for other alerting purposes and general syndication of content). The *Atom* format was developed as an alternative to *RSS*. One of the most popular *RSS* readers is *Google Reader*¹⁵.
- 9. MASHUP SERVICES:** A mashup is a service which combines data and services from multiple sources. Two of the most popular mash up services are *Pageflakes*¹⁶ and *Netvibes*¹⁷.
- 10. COLLABORATIVE EDITING TOOLS:** These tools allow users in different locations to collaboratively

7 www.podomatic.com

8 www.audacity.sourceforge.net

9 www.flickr.com

10 www.slideshare.net

11 www.scribd.com

12 www.facebook.com

13 www.linkedin.com

14 www.diigo.com

15 www.google.com/reader

16 www.pageflakes.com/

17 www.netvibes.com/

edit the same document at the same time. Two popular collaborative editing tools are *Googledocs*¹⁸ used for simultaneous text editing and *Voicethread*¹⁹ for collaborative editing of presentations of photographs and/or videos together with text comments.

11. SURVEYS: These tools allows users to set up a poll and embed the poll widget in a blog or website and then track the responses on the website. Two popular tools are *PollDaddy*²⁰ and *SurveyMonkey*²¹.

12. VIRTUAL CLASSROOMS: Applications or software that allow collaboration in a virtual classroom. These provide users a variety of different tools including audio, whiteboard, chat and screen sharing. The most popular applications include *Adobe Connect*²², *ClickMeeting*²³ and *Spreed*²⁴. *Google Hangouts*, part of the *Google+* social networking service provides a space for live online meetings between trainers and learners. Interaction and annotation tools allow trainers to share whiteboards, presentations, documents and multimedia files and to communicate in both oral and written media.

Web 2.0 social technologies could offer numerous opportunities for participatory learning and training. But how important is the role of collaboration in the learning and training process?

18 www.docs.google.com/

19 www.voicethread.com

20 www.polldaddy.com

21 www.surveymonkey.com

22 www.adobe.com/products/adobeconnect.html

23 www.clickmeeting.com

24 www.spreed.com

2. The Collaborative Blended Learning Methodology (CBLM) in practice

The idea behind the *Collaborative Blended Learning Methodology (CBLM)* was defined the most effective blend of innovative methodologies that could make the best use of the advantages of the social Web 2.0 tools.

What is important in every case is the selection of the 'right' Web 2.0 environment for projects based on the *Collaborative Blended Learning Methodology (CBLM)*. The basic characteristic of this online environment is to enhance collaboration between participants and the trainer. A discussion area, a forum or/and a synchronous communication service like instant messaging can enhance communication and peer assessment between the participants. The possibility of collaborative editing, synchronous or not, is another important feature for an online learning environment. Sharing different types of files (word, video, audio, etc.) and keeping record of the work done are also two important services in an online environment. We describe in more detail several Web 2.0 tools, which can be used for training in our Manual.

In order to understand the Webquest 2.0 project and how we can better organise the activities and choose the appropriate online learning environment, it is important to explore in more depth the Webquest 2.0 methodology.

2.1 Collaborative Blended Learning in SMEs

Face-to-face training is still the most popular training method in enterprises. However according to the "MMB Learning Delphi 2011"²⁵ survey conducted among e-learning experts in Germany, Austria and Switzerland, blended learning will be the most popular learning method in companies within next 3 years according to almost 90% of the respondents in the research.

²⁵ Institut für Medien- und Kompetenz Forschung, "MMB Learning Delphi 2011",
http://www.mmb-institut.de/monitore/trendmonitor/MMB-Trendmonitor_2011_II.pdf

In another survey, conducted by CEGOS²⁶ in 2011 in Germany, France, Spain, Great Britain and Italy among 2542 employees, 37% said they had participated at least once in a blended learning programme and 59% of those employees had a possibility to use collaborative tools for training. The most popular collaboration tool was video conferencing with 33% of employees surveyed using this tool, 22% wiki, 21% blog, 20% forum, 14% podcast (Figure: 4).

Collaborative tools used by employees in the last three years

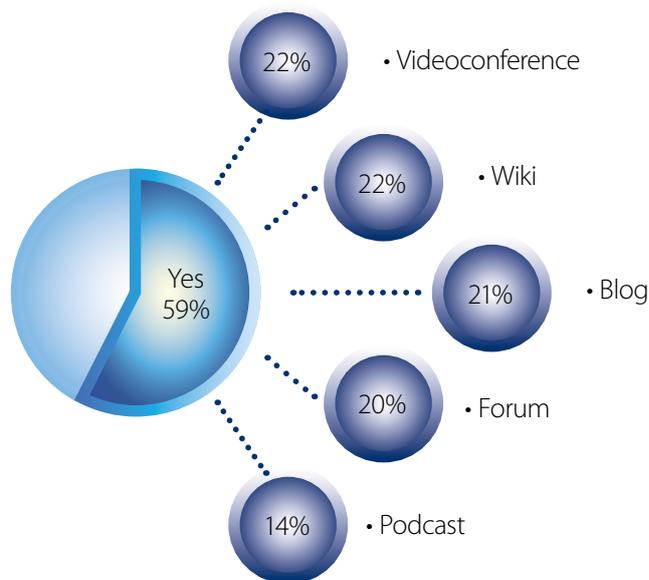


Figure 4. Collaborative tools used by employees in 2009-2011 (Cegos European Survey, 2011)

Although the results of CEGOS research seem optimistic in terms of use of collaborative learning in companies, 'classical' e-learning (Computer Based Learning and Web Based Learning) is still the most common on-line learning approach. It is important to note that Web 2.0 collaboration tools are used differently in different countries. All depends on the context, theme, target group, etc. One solution may be more popular in one country, and in the other is almost unknown. This requires a high sensitivity to people's needs and careful observation of the business market.

²⁶ Cegos European Survey, (2011) "An analysis of L&D practices in Europe"
<http://www.slideshare.net/clives/cegos-2011-learning-trends-survey-draft-final-may-11>

2.2 Training needs and challenges in SMEs

Changing business environments and the global market crisis are challenging SMEs in every country. In order to keep pace with these challenges SME must:

- be innovative
- be able to manage knowledge
- have well qualified staff.

For HR departments it presents the following challenges:

| Challenge |
|--|
| 1. Reducing training costs through: <ul style="list-style-type: none"> – reduction of travel time and accommodation costs – providing training to larger numbers of staff at a lower cost to the business – lower capital outlays for e-learning technology – spending less time away from the job |
| 2. Monitoring of training results. Training must be measurable, trackable, recordable, and easy to link with other learning. |
| 3. Delivery of knowledge and skills as fast as possible and in small 'packages' |
| 4. Easy access to the company's knowledge and skills |
| 5. Better alignment of the training to employees' needs |
| 6. Stronger involvement of management in training |
| 7. Exchange of knowledge and skills between different departments in the company |

Table 1: HR Challenges

One of the solutions, which can help HR department to face the challenges, is the implementation of Web 2.0 tools and collaborative learning in combination with face-to-face training and 'classical' e-learning.

2.3 Benefits of the introduction of Collaborative Blended Learning for SMEs

Colin Steed (2011) in "Live online learning for improved business performance" mentions the following benefits of live online training, which seem to be realistic as well for collaborative blended learning in SMEs:

- Shorter and more focused courses;
- Courses that are more interactive and collaborative;

- Greater opportunity to practice either in groups or individually;
- Ability to share with other learners;
- Ability to learn without having to leave the place of work;
- Ability to learn at a convenient time;
- More likelihood of receiving «just in time» learning;
- Probability of being trained more often and in a more timely way;

In addition, collaborative learning methods allow learners and organisations to:

- Learn step-by-step. There is the opportunity to try out gained knowledge and skills and report the results to the trainer and get feedback;
- Learn from colleagues dispersed throughout a geographic area without the travelling need;
- Build a knowledge base, which is built on a natural way during the learning process;
- Introduce innovative learning methods to staff, which encourage them to be innovative in their day-to-day business and to build the competitive edge of the company;
- Introduce a new company culture focused on lifelong learning.

2.4 Challenges of Collaborative Blended Learning in SMEs

New media provide new possibilities for small and medium sized enterprises but it is still essential to update competences and adjust them to the changing environment. There are a number of problems that should be considered.

On the one hand, implementation requires a new way of thinking about learning processes:

- Management – “We strongly support the learning process of our employees and allow them to implement new knowledge”.
- Employees – “I’m responsible for the results of the training and new knowledge and skills”.

On the other hand, self-study and asynchronous learning methods require high motivation from learners. Trainees’ needs should be carefully measured and the concrete agenda should be given. Thus, participants will be more focused on the task and they will have a clear view on how it will be conducted and when it will end. This is especially important in the context of the business environment of SMEs where people do not have time to participate in long courses divided into many parts.

Finally, it is essential to provide an e-learning infrastructure (either as a cloud solution or on company servers). This depends on the company's possibilities and motivation, and may depend on implementing open-source solutions.

Not every SME has its own trainers. Training companies working for SMEs must be aware of the benefits of collaborative blended learning and be able to combine face-to-face training with online provision. Schiavone and MacVaugh (2009) say: "the adoption of a technological innovation, and technological change itself, is thus dependent on an individual sense-making process that a potential adopter undertakes every time he/she recognizes that an innovation may satisfy their needs and be socially accepted and awarded by their community."

Companies that decide to implement Web 2.0 tools for learning have to take into consideration various challenges and develop a plan on how to deal with them.

A. Challenges for companies and HR departments

- The right choice of Web 2.0 tools and the implementation of them in the company (including their use for teaching and learning).
- The promotion of new learning methods within the company (including to the management or other decision makers).
- Computer and internet connectivity are needed for each participant.
- It is an advantage when company already introduced knowledge management and systems to support the exchange of knowledge within the company.
- The development of a corporate culture which allows employees to take part in online training within working hours.
- The measurement of the effectiveness of the use of Web 2.0 tools.

B. Challenges for participants

- Motivation for self-paced learning.
- Awareness of self-paced learning methods and their own learning style.
- Time management within the learning process.
- A new approach to training is required: 'learning' instead of 'being taught'.
- Multitasking while using a computer, e.g. incoming emails that are distracting trainees' attention during training.

C. Challenges for training companies / trainers

- Measuring the effectiveness of the use of Web 2.0 tools.
- Monitoring the quality of internet sources used for learning
- Trainers must be skilled in moderating and monitoring the learning process
- Motivation of trainees.
- Management of technical issues in order to be able to use Web 2.0 tools for in-company training (e.g. problems with firewalls in the client's company).
- The preparation of on-line learning materials can be time - consuming
- The promotion of internet as a reliable source of knowledge to both the management of the client's company and to trainees.
- The presentation of the advantages of e-learning and the use of Web 2.0 tools as compared to traditional face-to-face training.

3. Introduction to Webquest 2.0

3.1 Definitions: What is a Webquest and a Webquest 2.0?

The name 'webquest' is comprised of two parts: a) 'Web' – to indicate that the World Wide Web is used as the primary resource in applying, analysing, synthesising and evaluating information, and b) 'Quest' – to indicate that a question is presented within the webquest, which encourages learners to search for new meaning and deeper understanding (Pelliccione and Craggs, 2007).

Webquest was generally defined as “an inquiry-oriented activity in which some or all of the information that learners interact with comes from resources on the internet” (Dodge, 1995). Webquests were first developed by Dodge (1995), a Professor of Education at San Diego State University, as a way of enhancing higher order learning for learners which maximised the use of the web in a scaffolded or supported manner (Watson 1999). The promotion of high level cognitive processes is the key feature that distinguishes a webquest from other models of structured learning using the Internet like, for instance, Treasure Hunts and Scavenger Hunts. These differ essentially from webquests because they require no more than a mere search for answers to questions rather than collaborative, cognitively rich enquiry. Webquests are built around an engaging and attainable task that is not a simple answer to a question but involves problem solving, judgement, analysis, or synthesis (Starr, 2000; 2000b:2).

According to Dodge’s definition of a webquest, we may distinguish two kinds of webquest: a short term webquest, which can be used for companies that want to train their employees within a day. Usually such a webquest lasts for 1-2 hours and its structure is condensed with information. The longer term webquest is usually designed for 5 hours or longer, with one session is divided into two or more parts. Each part ends with the moderator’s feedback and some guidelines for the next step of the webquest.

The instructional goal of the two different webquest types differs. Shorter webquests may focus on knowledge acquisition and integration whilst longer webquests, aiming to extend and refine knowledge, will require deeper analysis of a question deeply and transformation. Longer webquests may be divided into a number of different sections or sessions, with feedback and evaluation provided for each section.

A revised definition by Dodge extends the idea of a webquest: “an inquiry-oriented activity in which most or all of the information used by learners is drawn from the Web. Webquests are designed to use learners’ time well, to focus on using information rather than looking for it, and to support learners’ thinking at the levels of analysis, synthesis, and evaluation” (Dodge, 2001). Tom March (2004; 2007), who has collaborated with Dodge on the development of the webquest model and has continued his efforts to refine it, has also offered a revised definition of webquests, described as: “[...] a scaffolded learning structure that uses links to essential resources on the World Wide Web and an authentic task to motivate learners investigation of a central, open-ended question, development of individual expertise and participation in a final group process that attempts to transform newly acquired information into a more sophisticated understanding. The best webquests inspire learners to see richer thematic relationships, to contribute to the real world of learning, and to reflect on their own metacognitive processes”.

The use of ICT has opened a new culture of training and learning. Interaction and collaboration play an increasing role in lifelong learning and place learners in the centre of the learning process in order to develop their autonomy, responsibility, and social skills. The development of such strategic skills is facilitated by scaffolded learning, where learners are given support, which is gradually reduced, until they can apply new skills and strategies on their own. ICT and especially Web 2.0 technologies can support this process since they multiply the types and forms of interaction, offer new forms of mediation and advice and increase the types of support (Villanueva, 2006; Ruiz, 2005).

The challenge for educators and trainers is to integrate these possibilities into a more autonomous task which helps the learners’ to fulfil their own learning plan. Learners should be trained to become progressively autonomous and eventually able to set their own aims, reflecting on their learning processes and assess their learning progress in order to face the educational challenges through lifelong learning. Lifelong learning is important for learners in order to cope in today’s workplace context and educators/trainers should successfully prepare them for that.

Both Bernie Dodge (2007) and Tom March (2007) have discussed the idea of the adaptation of the webquest methodology to the educational needs of the digital era. They claimed that Web 2.0 tools offer great opportunities to enhance webquests and that the collaborative nature of Web 2.0 applications can offer many opportunities for tasks to be taken to a new level of webquests. Dodge proposes using technologies like podcasts, *Voicethread*, *Diigo* and *Twiddla* as tools to be included in creative projects that can capture the learning process through a webquest. Those interactive tools can share primary sources, including videos/audio/text to invite comments and communication and can promote collaboration, in

real time, between people anywhere in the world. These interactive experiences available on the 'read/write' web should be connected with the webquest methodology. Dodge (2007) sees for the future an incorporation of Web 2.0 developments with webquests.

The major weakness of the original webquest is that the design structure provides limited interaction with learners. The extent to which learners can actively participate in the process and collaborate with other learners is quite low and there is a focus on written content instead of the active engagement of learners in their learning process. Some researchers (Kurt, 2009) have expressed the need for adapting the webquest methodology to the Web 2.0 era, while Perifanou (2009, 2011) has implemented webquest activities in blended learning supported by Web 2.0 technologies (wiki, blog) in a Foreign Language Learning context.

To fully take advantage of all the possibilities that current Web 2.0 technologies offer, a revised webquest framework for educators and trainers is proposed together with a new definition of a Webquest 2.0.

"A Webquest 2.0 is an inquiry-oriented activity that takes place basically in a Web 2.0-enhanced, social and interactive open learning environment, in which the learner can decide to create his own learning paths choosing the Web 2.0 tools and the on line resources needed for the completion of the final Webquest 2.0 product (Perifanou, 2011)".

The length of a Webquest 2.0 depends on the trainees' needs. As regards the allocation of time to on line and face to face tasks and activities, this can vary depending on trainees needs. The trainer can propose the option of participating only in one face to face training session or to complete the whole Webquest 2.0 project entirely on line. It is important that the trainer and the trainees agree on the schedule of the training programme.

3.2 What are the essential parts of a webquest?

The webquest framework is evolving and continues to be developed and refined in order to meet the demands of a changing world in education. It is also attracting interest from other sectors in learning, including in training, which is the focus of the webquest project.

According to Dodge (1995), the typical webquest framework used in educational sector has several components including a) an introduction; b) a task; c) a process; d) resources and e) evaluation f) feedback (Table:1).

| PREPARATION | LEARNING PROCESS | CONCLUSION OF LEARNING PROCESS |
|-----------------|---------------------------------------|--------------------------------|
| 1. Introduction | 2. Task 3. Process 4. Resources | 5. Evaluation 6. Conclusion |

Table 1. WQ Framework: Webquest Basic Elements (Dodge, 1995)

1. In the 'Introduction', the 'Preparation Phase', the trainer has as a main goal to gain trainees' attention, provide background information and introduce the activity, a real life problem.
2. The second phase, the 'Learning Process' consists of the next three basic sections; the 'Task' or a case study to be addressed: This problem-solving task is at the heart of the webquest and the most important part of the webquest (Dodge, 2002). A primary component of the task section is to explain to the trainees what is expected to be created for evaluation, and so learn about the different roles that they will take on and what the result or product should actually be at the end of their webquest project. Dodge has provided additional assistance to educators attempting to create the webquest task through his online training materials. His 'Taskonomy'²⁷ helps educators envision a wide array of possible webquest tasks (Dodge, 1999, 2002). The proposed taxonomy of tasks (Dodge, 2002) describes twelve models that could help in the creation of a webquest. These tasks include retelling, compilation, mystery, journalistic, design, creative product, consensus building, persuasion, self-knowledge, analytical, judgment and scientific.
3. The next section, the 'Process', is where step-by-step instructions and guidance will be provided to the learners in order for the task to be completed. It is here that collaborative teams are formed and roles for each member of the team identified. Specific guided activities are often included in the process. This procedure is very important and it is what Dodge calls the 'scaffolding', that is, a series of activities or materials to support the trainees in the completion of the task (Perez Torres, 2007).

In every type of a webquest activity the educator/trainer can propose tasks and roles which are tailored to the learning style of each learner. During traditional training, choosing the learning activities based

²⁷ Dodge's taxonomy: <http://webquest.sdsu.edu/taskonomy.html>

on the trainees' learning style is very difficult. Dodge (2002) presented a list of several learning scenarios and roles providing guiding details for each case.

4. The 'Resource' section is the area where the learners can find the set of information resources needed to explore for the task's completion. These resources are most typically Web-based, though widely available print or video resources can be identified for learner's use as well.
5. Finally, the third phase is the 'Evaluation' part where the trainer informs the trainees of the way that they will be evaluated. Trainers can create a rubric by using several online rubric makers (Jones, 2005).
6. In the last section the 'Conclusion', the learners are invited to think about what they have learned and the educator/trainer usually encourages them to research further about the topic and extend the experience into other domains. (Young & Wilson, 2002).

3.3 Webquests 2.0 framework: 7 'Learning Circles'

'7 Learning Circles' is a revised webquest framework that is web 2.0 enhanced and has a more 'participatory' structure and provides a greater deal of interactivity than was possible in the original versions. This 'Web 2.0' updated framework (Table:2) is comprised of the following seven components:

| Sections | 7 Learning phases - 'Circles' |
|--|---|
| <p>1. Warm up</p> <p>Warm up preparatory activities/ Introduction to the Webquest 2.0 context.</p> | <p>Description This is the preparatory Webquest 2.0 phase. In this section the trainer proposes warm up on line activities in order to introduce the general context of the Webquest 2.0 project.</p> <p><u>The main educational goals of this section are:</u></p> <ol style="list-style-type: none"> to explore learners' prior experience/knowledge and connect it with new information related to the Webquest 2.0 project; to explore topics of interest; to explore learners' prerequisite skills (required for the completion of the webquest2.0 tasks); to identify and analyse learners' educational/training needs and based on these design and propose concrete activities and tasks; to invite learners to propose ideas for a Webquest 2,0 scenario; <p><u>The supplementary educational goals of this section are:</u></p> <ol style="list-style-type: none"> to leverage learners' intrinsic motivation; to support autonomy; to promote collaboration and discussion; <p><u>Time allocated for F2F/On line sessions:</u> The trainer has to define the time frame needed for each 'face to face' and on line session according to the trainees' learning needs.</p> <p><u>On line-suggestions:</u></p> <ol style="list-style-type: none"> Activities/discussion could take place in a group blog, a Facebook group or another web 2.0 platform that the trainer will propose. An online 'exploratory' questionnaire could also be used to better explore learners' prior experience, specific skills, learning needs and learning expectations. |
| <p>2. Introduction</p> <p>Definition of the Webquest 2.0 topic/central idea</p> | <p>Description In this phase the trainer defines the central idea of the Webquest 2.0 scenario/project.</p> <p><u>The main educational goals of this section are:</u></p> <ol style="list-style-type: none"> to provide a general description of the Webquest 2.0 situation that all the groups will have to face; to discuss about the proposed scenario. <p><u>The supplementary educational goals of this section are:</u></p> <ol style="list-style-type: none"> to leverage learners' intrinsic motivation; to support autonomy; to promote collaboration – discussion; <p><u>On line – suggestions:</u> The Webquest 2.0 scenario can be published on line and the trainer can invite learners to leave their comments.</p> |

| | |
|---|---|
| <p>3. Task</p> <p>Definition of group and individual Webquest 2.0 tasks (on line templates)</p> | <p>Description</p> <p>In this phase the trainer presents all the details of the proposed Webquest 2.0 tasks & subtasks (group and individual) in templates.</p> <p>Every group will have to complete a joint group task (divided in subtasks) and each member of the group will have to complete an individual task (divided in subtasks). It is recommended that the trainer provides more than one individual task to every learner so that the learners can autonomously decide which task is more suitable for them.</p> <p><u>The main educational goals of this section are:</u></p> <ol style="list-style-type: none"> to present all the group and individual tasks; to present in a clear way every step of the task in 'guide' templates; to inform learners that they can have choices regarding the Web 2.0 tools, resources, individual tasks. It is their responsibility for what choices they will make; <p><u>The supplementary educational goals of this section are:</u></p> <ol style="list-style-type: none"> to enhance critical thinking—higher order thinking skills; (Bloom's revised digital taxonomy²⁸/ Marzano's²⁹ framework should be consulted). to improve organisational skills; to leverage learners' intrinsic motivation; to support autonomy; to promote collaboration – discussion; <p>Regarding the proposed resources, it is important that the trainer carefully evaluates and ensures that they are</p> <ul style="list-style-type: none"> – relevant; – provide the learners with the appropriate input to develop the task; – suitable for the learners' level of competence and needs. <p>Even though trainer's help is necessary, learners should explore the list of the proposed links and evaluate the resources themselves and decide which to use in order to better complete the tasks.</p> <p>It is also necessary to evaluate the Web 2.0 tools. Learners will decide which ones to use.</p> <p>SAMPLE OF TEMPLATES</p> |
| | <p>GROUP TASK Template – Group's name</p> <p>Field/context: Describe the field/context in which this WQ2.0 can be applied</p> <p>Topic domain: Define the topic of your WQ2.0 scenario describing briefly the content of the specific group task.</p> <p>Level of expertise/prerequisite skills: Define the level of experience (low-medium-high) & the skills that learners should have (e.g ICT skills).</p> <p>Number of group members: Provide information about the number of participants of each group.</p> <p>Title/description of group task: Write the title & briefly describe the group task.</p> <p>Learning objectives/outcomes: Define the purpose of the WQ2.0 group task(e.g. promote online discussion) and the final learning products (e.g. create a forum).</p> <p>Assessment tools/strategies: (Recommended: Self and peer evaluation of the process / final product) Describe the evaluation tools that will be used (e.g.rubrics,) and when (e.g. end) & the purpose (e.g. self/peer or final product).</p> <p>Sharing final WQ 2.0 experiences: Define the social tools that you will use in order to share the WQ2.0 learning experience & the final outcomes with „real world“.</p> <p>Time f2f/online: Define the time allocated to the on line and f2f sessions in order to fulfil the WQ2.0 group task</p> <hr/> <p>INDIVIDUAL TASK Template-Trainee's name</p> <p>Level of expertise: Define the level of experience (low-medium-high) that learners should have to fulfill the task.</p> <p>Title/ Description of individual tasks (free choice): Write the title & briefly describe the WQ2.0 individual task</p> <p>Learning Objectives: Define the purpose of the individual task (e.g. develop strategic thinking skills).</p> <p>Learner's goals: Invite learners to briefly describe their learning expectations.</p> <p>Self and peer evaluation of the process / final product: Describe the evaluation that will be used (e.g.rubrcs) & when (e.g. in the end) & the purpose (e.g. self/peer or final product).</p> <p>Time f2f/online: Define the time allocated to the on line and f2f sessions in order to fulfil the WQ2.0 individual task.</p> <p>The task templates were inspired by the JISC templates (Beetham & Sharpe, 2007).</p> |

28 <http://edorigami.wikispaces.com/Bloom%27s+Digital+Taxonomy>

29 <http://www.kurwongbss.eq.edu.au/thinking/Dimensions/dimensions.htm>

4. Guidance– Process

Useful Instructions to support the learning process and the completion of the Webquest 2.0 task

Description

In this section learners can find ‘process’ instructions that can fully support them to complete all the tasks/ subtasks (group and individual) beginning with the learners dividing in groups and ending with the presentation of the final task–product.

The main educational goals of this section are:

- a) to provide a list of ‘guide’ process instructions; this is necessary guidance in order to help learners to successfully complete the tasks.
- b) to thoroughly describe every step of the learning process divided in 4 sections (described in the following paragraphs);

The supplementary educational goals are:

- c) to enhance critical thinking–higher order thinking skills;
- d) to improve organisational skills;
- e) to leverage learners’ intrinsic motivation;
- f) to support autonomy;
- g) to promote collaboration and discussion;
- h) to develop metacognitive strategies (set their own learning goals, reflect on what they already know and the knowledge they can use to achieve the goals, reflect on what they need/want to know to complete the task, select the resources in accordance with their objectives and with their assigned roles, evaluate both the learning process and the outcome of the activity).
- i) to increase their self–awareness
- j) to develop skills for evaluating the effectiveness and quality of their own work.

INSTRUCTIONS

Preparation: Before the learners begin with their work actions should be made in the ‘Guidance–Process’ section:

- a) Groups have to be defined by the trainer;
- b) Each group has to access the ‘Task’ section to find and download the online ‘group tasks templates’ and then every member of the group has to visit and download the online ‘individual task’ template. In both templates there will be a space dedicated to the learners in order to check their preferences and control every step in order to avoid missing any of them;
- c) Each group should visit the “Closed & Open evaluation’ section and find the assessment tools that will be used for the evaluation of the individual and group work. It would be also useful to provide learners with a Check list of evaluation criteria of the final product (for example writing criteria) to support their self or peer evaluation.

Inspired by Dodge’s (2002) ‘Webquest thinking process taxonomy’ and by Eisenberg and Berkowitz (1990) ‘Information Problem Solving framework’, the learning process was divided in 4 phases:

Reception: Each learner explores the tasks/material/tools presented in the templates and makes the final decisions. followed by a short discussion with colleagues and the trainer. All the documents provided by the trainer support learners during the process. Learners explore and locate information using the resources that they have chosen but learners can be also encouraged to find more resources and evaluate the relevance of the sources provided for their individual roles.

‘Individual’ Transformation/ Synthesis–Production: Each learner extracts, elaborates and organises the information found (by reading, hearing, viewing) and can ask either trainer’s or his/her group member’s support. Each learner produces the output.

‘Group’s Transformation/Synthesis–Production: All the groups try to elaborate all the individual products and complete the group task developing the final group product.

Evaluation: Self and peer evaluation of the individual task process and product.

| | |
|---|--|
| <p>5. 'Closed & Open' evaluation</p> <p>Definition of Webquest 2.0 assessment strategy</p> | <p>Description</p> <p>In this section learners can be informed about the assessment tools and strategies that will be used to evaluate their learning experience (process, final product). The assessment strategy proposed in this phase is the combination of 'closed' and 'open' evaluation. Trainers can choose all or some of the assessment stages proposed. 'Closed' Evaluation (evaluation involves only the participants–trainer)</p> <p>1st stage: Peer/trainer's feedback During the Individual task's process peers can provide feedback, and answer each other's questions. Trainer can monitor the work and provide feedback to support learners in case of difficulties. (If peer feedback is proposed as part of the activity, it would be useful to provide the learners with assessment criteria or standards that can guide them when examining each other's work).</p> <p>2nd stage: Self evaluation After the completion of the Individual task learners should fill the Self– evaluation Form of the individual task process and product (Were the title and the description of the task clear?; Which difficulties have I faced?; Why?; How I solved them? etc).</p> <p>3rd stage: Peer–group evaluation After the completion of the group task learners should fill the Group Evaluation Form in groups. Peer evaluation of the group task process and product and the final presentation (Which difficulties have we faced? why? how we solved them? etc).</p> <p>4th stage: Trainer's evaluation Trainers can decide the assessment tool (for example a rubric) to evaluate the final outcomes or/and to monitor their progress and provide feedback in different stages of the activity.</p> <p>5th stage: Open evaluation Web 2.0 information and communication tools can promote authentic feedback. Learners can publish the final product to an 'authentic' audience and ask for feedback. Since communication is authentic, learners are motivated to engage in meaningful interaction.</p> <p>The main educational goals of this section are:</p> <ul style="list-style-type: none"> a) to develop learners' skills to evaluate the effectiveness and quality of their own work; b) to develop learners' skills to evaluate the effectiveness and quality of their own work their peers; c) to develop meta cognitive strategies (evaluate both the learning process and the outcome of the activity); d) to leverage learners' intrinsic motivation (authentic assessment supported by an 'authentic' audience). |
| <p>6. Conclusions</p> <p>Sharing & discuss about future projects in and out the training community.</p> | <p>Description</p> <p>In this section Ifinal impressions regarding the Webquest 2.0 learning experience and new ideas for future are expressed. Learners can extend their activities and further explore the same topic or propose another Webquest 2.0 scenario. Web.2.0 technologies can offer to them possibilities not only to support this effort but also to open their discussion to a wider community that could share the same interests. This authentic feedback of different perspectives can bring many new ideas and open new learning experiences.</p> <p>The educational goals of this section are:</p> <ul style="list-style-type: none"> a) to develop meta cognitive strategies (further discuss about what they have learnt). b) to leverage learners' intrinsic motivation (self confidence for the outcomes, open discussion). <p>In this section participants summarise what they learned and what / who they will implement new knowledge and skills in their business activities. The trainer's role is to support this process.</p> |
| <p>7. Trainer's guide</p> <p>Useful instructions to share with trainers' community</p> | <p>Description</p> <p>In this section trainers share with their professional community useful instructions that could guide other trainers to successfully use the Webquest 2.0 scenarios/projects in their trainings. A guide–template and evaluation rubrics (assessment of trainees' performance, of the final products or of the Webquest 2.0 scenario quality before/after they use it) are recommended. Adopting another Webquest 2.0 scenario to the needs of different groups of learners is challenging but takes less time comparing to the development of a new one. Providing clear recommendations to trainers can provide valuable support. Web 2.0 applications facilitate the transfer of knowledge and constructive dialogue within a professional community can open new perspectives for the development of Webquest 2.0 scenarios/projects and the trainers' continuing professional development.</p> |

Table 3. Description of Webquests 2.0 Framework: '7 Learning Circles' (Perifanou, 2011)

The 'Webquest 2.0 Learning Process Map' (Figure: 5) aims to show the relation and interconnectivity of each step of the Webquest 2.0 structure. Each circle has a different number and colour and represents each step of the 'Webquest 2.0 framework: 7 learning circles'.

The third learning circle, the 'Task', represents the most important component of the learning process. The learner begins the Webquest 2.0 project with the first two learning circles 'Warm-up' and 'Introduction' and continues with the exploration and the implementation of the 'Task' and the 'Guidance'. The learner is also informed about the evaluation strategy proposed.

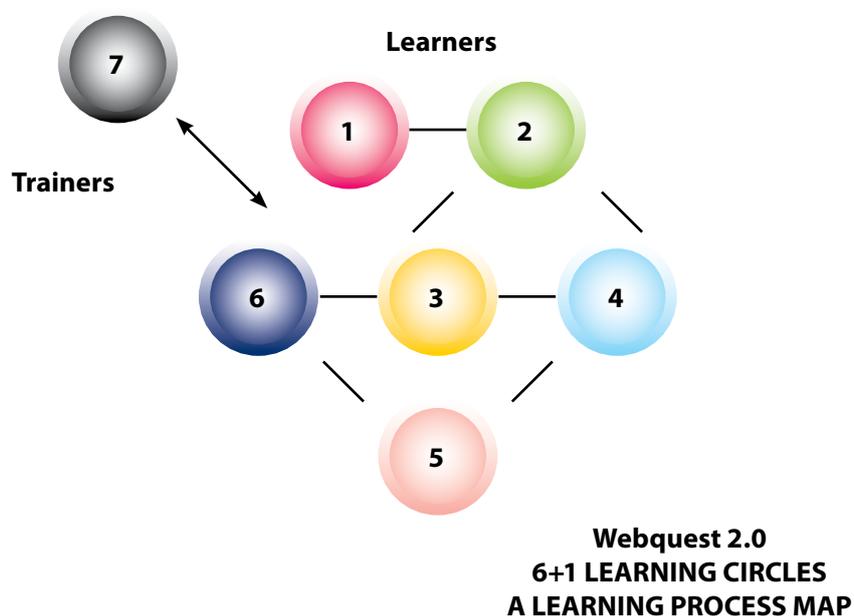


Figure 5. Webquest 2.0 Learning Process Map

The learning process is concluded with the last two learning circles the 'Evaluation' and the 'Conclusions'. The 'Task' is the most important component of the Webquest 2.0 structure and it is interconnected with all the other learning circles as it provides all the information related to the individual and group tasks that the learners have to complete. There is also an additional learning circle that is dedicated to the trainer and provides useful support to the trainer's professional community that would like to learn how to implement a specific Webquest 2.0 scenario. According to the 'Webquest 2.0 Learning Process Map', the learners are independent and responsible for their learning process while the trainer supports and orientates them when it is needed. This framework aims to scaffold and support the trainees during the development of the Webquest 2.0 project.

Scaffolds, as core components of a webquest, are "temporary frameworks to support learners'

performance beyond their capacities” (Cho & Jonassen, 2002).

Social software tools can be used in ways that address learner centred concerns for self managed learning and control. A personalised, learner centred design offers a dynamic perspective that incorporates pedagogical scaffolds to support novice learners to learn and apply previously unknown thinking strategies, skills and practices (Aleven, et. al, 2003).

The idea behind the proposal of the updated Webquest 2.0 methodology is not to replace original version update it and provide an enhanced pedagogic approach using Web 2.0 and social software tools.

Barriers to the Wequest 1.0 version:

- **Low interactivity:** the major weakness of those webquests is that the design structure of this method provides limited interaction between learners. The extent to which learners can actively participate in the process and collaborate with other learners is limited and there is a focus on written content instead of the active engagement of learners in their learning process;
- **Closed learning environments:** there is little or no collaboration with learners out of class;
- **Space and time limited lessons (only F2F):** the lesson takes place only in class at a certain scheduled time;
- **Inflexible structure:** learners have to follow instructions (a limited list of web resources) proposed by the trainer and they have no alternative options;
- **No prior exploration of educational needs;**
- **Closed assessment:** the assessment is decided by the trainer;
- **Lack of support for trainers:** trainers cannot get feedback or support for their work from other colleagues.

Key features of the Webquest 2.0 version in order to overcome the barriers to the webquest 1.0 version:

- Scaffolding for learners in every step of the learning process;
- Engaging the learners in more interactive tasks supported by Web 2.0 technology;
- Proposing more flexible tasks that offer more than one choice / learning pathway (e.g. proposing alternative paths to follow or letting learners choose between different sub-tasks or alternative ways to perform the task);
- Creating tasks based on the learners’ educational needs giving them the opportunity to feel more autonomous during the learning process by taking their own learning decisions and reflecting

during and afterwards on their own learning;

- Providing a list of resources to learners and encourage them to find more resources and evaluate the relevance of the sources provided for their individual tasks/subtasks;
- Supporting collaboration in and out the class;
- Incorporating tools to support self, peer and open assessment that lead to reflection on the learning process and outcomes providing a form of metacognitive scaffolding;
- Cultivating the feeling of being connected with an authentic audience that could not only give feedback but also share knowledge and new ideas;
- Giving trainers the opportunity to share their own Webquest 2.0 plans and practices in a wider community;
- Guiding learners to effectively use emerging Web 2.0 technology;
- Including informal modes of learning providing learning opportunities without time and space limits.

A more theoretical discussion of this revised Webquest 2.0 framework can be found at the end of this document.

The following section provides guidelines for completing a Webquest 2.0 project, adopted for SMEs.

3.4 How to complete a Webquest 2.0 for SMEs

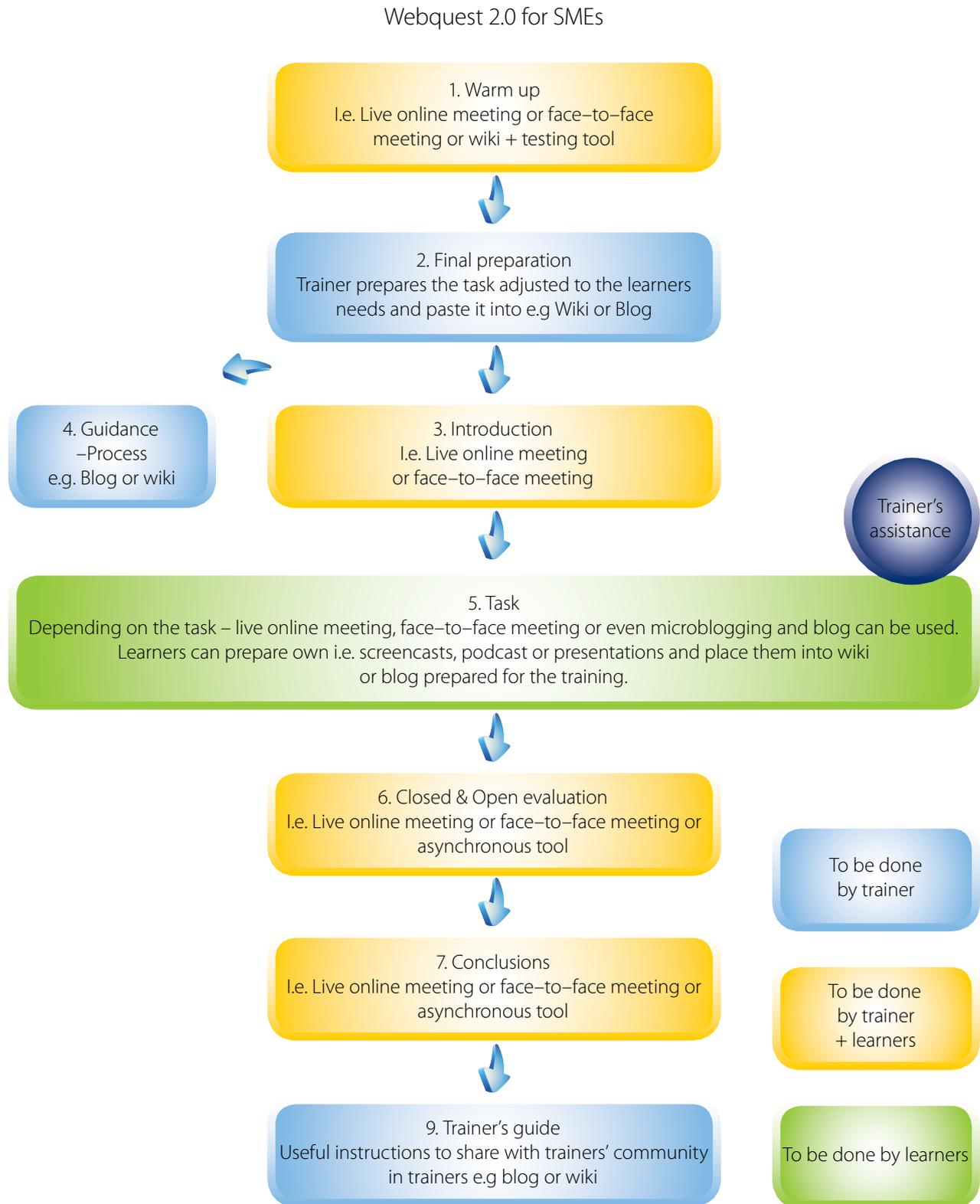


Figure 7. Webquest 2.0 for SME Learning Process Map

If you feel some parts of the following framework do not meet your needs, this is fine.

Similarly, feel free to change the templates to suit the needs of your trainees. Our main aim is to develop flexible and creative training opportunities. And for that to happen we need to engage with trainers who can make flexible and creative use of the opportunities which technology provide for learning.

For example:

Circle 5 - Open evaluation: if open evaluation is not necessary or not possible in case of your training, you can skip this step.

Circle 6 – Conclusions: you can redesign this step and ask participants for they summary of learning process: what they learned and what / who they will implement new knowledge and skills in their business activities.

Circle 7 Trainers Guide: if instructions sharing within the professional community of the trainer is not necessary or not possible in case of your training, you can skip this step or just prepare the guide for yourself and / or you colleagues from your organisation.

A *Collaborative Blended Learning* programme can consist of several smaller training units which shall be combined in a way which will allow you to reach the training goal.

The way the trainer will combine these training units depends:

- on the goal of the training,
- on the physical location of training participants (one location or a geographically dispersed workforce),
- on the availability of training participants (how much time they have for a training),
- on technical issues (which kind of platform the company has or which Web 2.0 are authorised for use for training by IT department, etc.).

Please find below some examples of *Collaborative Blended Learning* programmes:

A.

1. CBL training before a face-to-face training aimed at knowledge delivery.
2. Face-to-face training, where the prior gained knowledge will be used.
3. Follow up with CBL.

B.

1. Face-to-face training.
2. CBL training aimed at additional knowledge delivery.
3. Follow up with CBL.

C.

1. CBL training before a face-to-face training aimed at knowledge delivery.
2. 1-day face-to-face training, where the prior gained knowledge will be used.
3. CBL training before a face-to-face training aimed at knowledge delivery.
4. 1-day face-to-face training, where the prior gained knowledge will be used.
5. Follow up with CBL.

Webquest 2.0 requires use of computers during completing tasks. While developing your CBLM program please note that organisations may not have used computers intensively as part of face to face training session. Furthermore the use of computers during soft skills training can be felt as inappropriate.

Our experience shows that a mixture of face to face and online learning is seen by participants as successful. Online learning could provide better integration with practice in the workplace. Many organisations are beginning to appreciate the potential of online learning for professional development and training in their organisations. This is particularly so with SMEs with a geographically dispersed workforce.

It is important to remember that participants are grateful for the opportunity to access the Webquests 2.0 and the learning materials after the training sessions.

3.5 The role of the trainer and moderator in the learning process

Training on line involves many of the skills and competences that any good trainer will have.

Independently of typical trainer skills, a trainer who wants to use e-learning and Web 2.0 collaboration tools should:

- have (online) facilitator skills - in particular trainers need to think about how they can support their trainees on line. It may involve the use of different tools and a different way of organising work, as well as knowledge in using computers and a broad variety of software;

- be interested in e-learning and collaborative learning;
- be skilled in IT in order to use Web 2.0 software and support participants in terms of computer literacy;
- have knowledge of how to combine the training tools in order to achieve the training goal.

We recommend that any trainer providing e-learning and Webquests 2.0 online for the first time should themselves first participate in an elearning course or session and reflect on the similarities and differences and how they need to adapt their practice to cope with the opportunities and difficulties online training and learning provides.

4. Webquest 2.0 theoretical foundations

The success of webquest projects is based on the fact that they were designed to bring together effective instructional practices, theories and models into one integrated learning activity including a model of motivation (March, 2007), critical thinking, cooperative learning, authentic assessments, technology integration, scaffolding model, PBL, learner-centered, inquiry-based and constructivist approaches (Dodge, 1995, Hopkins–Moore & Fowler, 2002; Matejka, 2004; Lamb & Teclehaimanot, 2005; March 1998a; Coquard, 1998; Watson 1999; Hopkins–Moore & Fowler, 2002; Yoder 2003; Lamb & Teclehaimanot 2005; Egbert 2005; Richards 2005; Pelliccione and Craggs, 2007).

In exploring each theoretical core element of a webquest, it will be more clear why webquests not only have become very popular since they were introduced in 1995, but also why they have been the subject of numerous journal and magazine articles and have been widely adopted in K–16 education (Zheng et al., 2008). In other words, a deeper analysis of the theoretical foundations of the webquest methodology can better clarify the reasons of its success.

4.1 Motivation

One of the advantages of the webquest methodology is that it can increase motivation among learners as is confirmed by research (Tsai, 2006b; Murray, 2006; Fernandez 2007). What is less known is that the initial webquest development was also based on Keller's ARCS Model (Attention, Relevance, Confidence, Satisfaction) model of motivation (Keller, 1987). This approach can support curriculum development and implementation increasing potential motivation (March, 2007). The creator of the webquest methodology was guided by the ARCS Model focusing on:

- a) an introduction that should gain trainees' attention (Attention),
- b) a good choice of topic and roles (Relevance),
- c) a guided learning process that could make learners feel more confident (Confidence),
- d) an authentic topic and a real world audience that could promote learner engagement (Satisfaction).

The result of the webquest 'design process' is the development of a highly motivating methodology that can support the learner during the learning process. Trainees are given real resources for their learning. Participation in the group work is promoted by participants sharing responsibility and contributing real expertise in finding a group answer, rather than simply fulfilling an assignment. Lastly, the authentic assessment and the fact that the final webquest product can be presented not only in the conference room but to an authentic audience for feedback and evaluation motivates learners (March, 1998).

Learners have more control over what they do as they express their needs ('warm up' section), make their own choices, have a range of task options ('task' section) and ask for peer and open feedback when they need it ('guidance'/'evaluation' sections). Positive feedback on performance tends to enhance a person's perceived competence and this is well supported by the new framework.

4.2 Higher order thinking/critical thinking

Higher order thinking skills include creating, evaluating and analysing (Atherton, 2002) and pedagogies that promote these skills are varied but include challenging the learner, promoting active participation, argumentation, problem solving, conducting investigations and tackling subject matter that is complex (Tytler, 2004).

Critical thinking can be thought of as a higher order skill associated with the ability to think logically based on information evaluated according to certain criteria. Higher order thinking is "the intellectually disciplined process of actively and skilfully conceptualising, applying, analysing, synthesising and/or evaluating information gathered from, or generalised by, observation, experience, reflection, reasoning or communication, as a guide to belief or action" (Scriven & Paul, as cited in Coster & Ledovski, 2005). Critical thinking skills can also be illustrated using Bloom's Taxonomy. The first three levels of knowledge, comprehension, and application are often referred to as lower order thinking skills. The remaining levels of analysis, synthesis, and evaluation are therefore known as higher order thinking skills or critical thinking skills.

Benz (2001) reports that webquests are a way of structuring and directing higher-order learning using computers, while Jonassen (2009) describes webquest as an example of 'mindtools'. Mindtools are 'computer-based tools and learning environments that...facilitate critical thinking and higher-order learning'. As a mindtool, the webquest requires cognitive activity. It is designed to develop

and stimulate cognitive and creative interaction with one’s environment as mediated through the Internet (Kirschner & Whopereis 2003). More research findings (Popham & Wentworth, 2003; Kanuka, Rourke & Laflamme, 2007, Pelliccione & Craggs, 2007) confirm these reports. According to Dodge, the solution to a webquest cannot be copied and pasted (Dodge, 1995) and the key idea that distinguishes webquests from other Web-based experiences is that “a webquest is built around an engaging and doable task that elicits higher order thinking of some kind. It’s about doing something with information. The thinking can be creative or critical, and involve problem solving, judgment, analysis, or synthesis” (Starr, 2000). Following March’s ideas (1998), true webquests prompt trainees to ‘transform newly acquired information into a more sophisticated understanding’ (March, 2003). In the early days of brainstorming the webquest, Professor Dodge drew a picture (‘Thinking Visually with webquests’) that showed ‘learning inputs’ coming from the left, entering something of a ‘blackbox’ and then emerging from it transformed into ‘understanding’ (March, 2007) as presented in the following table.



Table 3. WebQuest and Knowledge Transformation³⁰ (March, 2007)

The challenge was to illuminate some of what can happen in that ‘black box’, to posit replicable processes that can produce this transformation. What Dodge did was to relate the idea of the transformation of the information with the right webquest tasks that could promote the process of higher-level thinking, in accordance with the framework of Bloom’s taxonomy. March pointed out that webquests that ‘only hang around the lower levels of Bloom’s taxonomy’ could not help trainees construct new meaning (March, 2004). March (1998) also pointed out that one of the main features of any webquest is that learners tackle questions and prompts that facilitate more advanced, higher levels of thinking. An answer to some sort of ‘real world’ question could be the ideal task form of a ‘good’ webquest (Lipscomb, 2003). In addition to this, it was suggested that questions can create the cognitive dissonance that leads to investigation and assimilation of a more robust understanding (March, 2004). Based on this idea, March (2004) introduced in the revised webquest framework the use of such a question. Typically, this was the ‘task’ framed into a question, known as the ‘Main Question’ of the webquest and was aimed at the whole group of learners. The ‘new generation’ of webquest use an overarching, open-ended question, as well as a combination of low-level and high-level thinking questions to support the scaffolding of

³⁰ ‘Thinking Visually with webquests’: <http://edweb.sdsu.edu/Webquest/tv/>

learners' learning and in this way to reach by a higher-level thinking.

Bonk and Reynolds (1997) additionally argued that the promotion of higher-order thinking through online learning requires challenging activities, that enable learners to link new information to old, construct meaningful knowledge, and use metacognitive abilities. When learners are self-regulated they have more possibilities to execute learning activities that lead to knowledge creation, comprehension and higher order learning (Stubbé and Theunissen, 2008) by using processes such as monitoring, reflection, testing, questioning and self-evaluation.

According to several studies (New Media Consortium, 2006, 2007, 2008, 2009; Salaway, Caruso & Nelson, 2008, Owen, Grant, Sayers & Facer, 2006; Bryant, 2007; Minocha, 2009; CLEX, 2009), the integration of social software into learning design can make a qualitative difference to giving trainees a sense of ownership and control over their own learning. The revised Webquest 2.0 framework proposes challenging Web 2.0 enhanced activities that promote self-regulated and collaborative learning and incorporate elements which prompt learners to use cognitive and metacognitive strategies (Bloom's revised taxonomy e.g analysing, synthesising, comparing and classifying Internet resources; analysing different perspectives on an issue; deducing, generalising and drawing conclusions; building one's own solution and reflecting on the process). This combination can offer ideal learning conditions for the promotion of higher order thinking.

4.3 Collaborative learning/Cooperative Learning

Collaborative Learning is defined as a situation in which two or more people learn or attempt to learn something together (Dillenbourg, 1999) while in cooperative learning trainees work with their peers to accomplish a shared or common goal. The goal is reached through relations with a group of learners that require positive interdependence, individual accountability, interpersonal skills (communication, trust, leadership, decision making, and conflict resolution), face-to-face interaction, and group processing (Johnson & Johnson, 2003). In order to improve trainee's skills, two characteristics must be present:

- a) Learners are working towards a group goal or recognition;
- b) Success is reliant on each individual's learning (Brown & Ciuffetelli Parker, 2009). According to Johnson et al. (1998), not all groups are cooperative groups. Putting groups together in a room does not necessarily mean cooperative learning is taking place (Johnson & Johnson, 2003).

In order to have effective cooperative learning the following five essential elements are needed:

- positive interdependence, so that trainees perceive that success will depend on each of them;
- individual accountability, that each individual's performance is held accountable and is assessed individually;
- fruitful interaction, so that trainees collaborate, applaud and help each other as they do the assigned task;
- social skills, which means that trainees need to learn how to work in collaboration and this should be part of the learning process;
- and group processing, meaning, discussion on how to improve group work (Johnson & Johnson, 2003).

Group work has become a critical element of webquests. The webquest framework promotes cooperation by allocating individual roles to learners through which they are required to gain a personal perspective on a topic, while being accountable to their group of peers. Through this process the learners are then required to share the results of their investigation, within a small group context, in order to develop a deeper understanding of the topic, while contributing to the group's ultimate goal. (Pelliccione & Craggs, 2007). By running several webquest groups in the same company, learners will also see that different solutions were chosen by each team because of the quality of the group members' research and argumentation skills. As learners complete more webquests they will become increasingly aware that their individual work has a direct impact on the quality of their group's final product and this promotes motivation in learning.

With emerging Web 2.0 technologies, the web has become a collaborative learning platform that enables learners to choose their own tools in order to create and share knowledge and ideas in a distributed environment. Learners have become more responsible for their own learning as they have the possibility to create the learning environment to best suit their learning goals and needs for networking, knowledge construction, social interaction and collaboration. Conole and Creanor (2007) report that learners 'have high expectations of how they should learn, selecting the technologies and learning environments that best meet their needs with a sophisticated understanding of how to manipulate these to their advantage' (p. 11).

The revised Webquest 2.0 framework aims to support and prepare trainees to successfully learn in collaboration with other learners in and out of the classroom reaching their individual and group learning goals. A range of free open source Web 2.0 applications like wikis, blogs, social bookmarking,

microblogging can enhance collaborative learning through providing environments where learners can communicate and co-create, publish and share their work. They also have the possibility to better reflect on the process followed to complete the group or individual task (like checking drafts of their work on a wiki's history pages) or to reflect on the feedback provided by trainers, moderator or other trainees, in and out the training room (comment feature in blogs, wikis etc.) or to reflect on the final work of their collaborators.

4.4 Webquests: constructivism, inquiry-based learning, project-based learning (PBL)

Constructivism is the principal pedagogic theory behind the webquest model, supporting Inquiry-Based Learning and scaffolding learning. Central to constructivism is the idea that individuals are active participants in the learning process, and not just passive receivers of information (Savery & Duffy, 1995; Karagiorgi & Symeou, 2005).

Constructivism is based on the premise that knowledge cannot be transmitted but has to be constructed by the individual. Therefore, learning is an active process of integrating information with pre-existing knowledge. According to constructivist approaches to learning (Jonassen et al., 1993; Wilson, 1997; Williams & Burden, 1997; Murphy, 2000; Grant, 2002), learners have to activate the mental processing which results in understanding and in the creation of meaning from their own experiences. In constructivism, the control over the learning process shifts from the educator to the learner, with the learner playing an active role in the learning process. Learning takes place in context and through collaboration and provides opportunities to solve realistic and meaningful problems. In contrast, trainers focus mainly on preparatory activities and, critically, scaffolding in case assistance is needed. Consequently, the trainer is an initiator of and an adviser in the learning process (Ullrich et al, 2008). The constructivist learning approach, together with the increasing influence of technological advancements in education, require the use of meaningful authentic activities, to give the learning situation a purpose and meaning and, thus, to make the activity an example of situated cognition (Reeves et al., 2002; Matejka, 2004; Baccarini, 2004).

Webquests, through their constructivist nature can provide a context for collaboration and social interaction in which learners will construct their knowledge by being engaged in meaningful activities (Simina & Hamel, 2005). According to March (2004), webquests, as inquiry based activities (Dodge, 1995), facilitate understanding and the creation of connections between the areas of learning and also provide

opportunities for reflection and association of the learning ideas with the real world. Webquests can be used in different contexts. The constructivist role of technology is widely acknowledged in the design of a realistic setting (Jonassen et al., 1993; Reeves et al., 2002; Stoks, 2002; Matejka, 2004; Hanson-Smith, 2004; March, 2004). It facilitates access to information and hence knowledge construction as long as those technology-based learning environments represent multiple real world realities in case based tasks that promote collaborative knowledge construction. The idea of knowledge development is well described by Bednar, Cunningham, Duffy and Perry (1992) who state that knowledge can be developed through the sharing of multiple perspectives and the learners' interpretation of those perspectives. This idea represents one of the basic educational aims of the webquest methodology.

One educational approach that is connected to webquest methodology is project-based learning (PBL). Constructivism, inquiry-based learning and cooperative/collaborative learning lay the theoretical foundations of PBL. It is an instructional, learner-centred approach in which trainees work in teams to explore real-world problems and create presentations to share what they have learned (Warschauer et al., 2000). Webquest uses similar concepts to PBL, hence making teaching and learning more interesting and engaging for both trainers and trainees. PBL provides situated learning based on a project while webquest goes a step further; this methodology creates a constructive learning environment for learners to easily understand the context and construct the knowledge that aims in learning about how to think and how to acquire further abilities (Jia Rong, et al., 2007).

Within the literature, constructive environments are described as 'interactive' and therefore, facilitate the construction of knowledge through the use of tools, collaboration with others and position the learner at the centre of the instructional process (Shuell, 1990). In the case of the webquest methodology, the educator's role is to 'orientate' the learning by orchestrating learners in organising more efficiently their group work and in promoting a positive interdependence (promote interaction, individual and group accountability, interpersonal and small group skills, group processing). Supporting learners during the description of the webquest task is a crucial step. By breaking the task into smaller pieces and asking learners to undertake specific sub-tasks, webquests are a learning scaffold allowing different degrees of guidance through their design. Finally, learners are also given the opportunity to reflect on what they have learned and discuss possible extensions and applications of the acquired knowledge. The educator supports learners in every step of their learning experience.

4.5 Scaffolding learning

Webquests are appealing because they provide structure and guidance both for learners and for educators (Dodge, 2001). These temporary frameworks to support trainees performance beyond their capacities (Cho & Jonassen, 2002) are considered to be a way of scaffolding.

Scaffolding is a central concept of webquests and within the literature it is described as a means of providing structure to trainees, keeping them focused on the task, at the same time avoiding being over prescriptive. Webquests use scaffolding in order to engage learners in higher level cognition (March, 1998) as they promote problem solving tasks, provide links to websites and guide the development of thinking skills through inquiry (Dodge, 1998; March, 2004; Lara & Reparaz, 2007). What is important in scaffolding is that it supports trainees' learning of both how to do the task as well as why the task should be done that way (Hmelo-Silver, 2006). According to McKenzie (1999), scaffolding offers the possibility of self-assessment to trainees, clarifies expectations and outcomes and keeps trainees on task, and provides important source material.

Within the literature, scaffolding can be provided in various ways in different parts of the webquest (Watson, 1999; Dodge B. & March T, 2002; Fiedler, 2002; March T., 2004; Kundu & Bain, 2006; March, 2007). Every step of the webquest framework provides a detailed description of what the learner has to do in order to scaffold and structure knowledge through an authentic experience. Each learner who is a part of a group needs to work on and find solutions to a real life problem taking on a particular role. Links and other resources provided by the trainer direct learners to find the appropriate information that will support them in reaching their learning goal and concluding the activity through creating the final learning product. Such a scaffolding activity challenges learners' thinking, enhances collaboration among the participants and also interaction and as March (2005) points out "such scaffolding is at the heart of the webquest model".

Bernie Dodge (2000) proposes three types of scaffolding that can be used in a webquest: reception, transformation and production. In this way he describes in a more concrete way the three stages of scaffolding. 'Reception scaffolds' assist learners in understanding, gathering, organizing and recording information from the sources. 'Transformation scaffolds' assist learners in transforming information into some new form. This transformation may require several thinking actions such as brainstorming, selecting, analysing, synthesising, reviewing contrasting, etc. Finally, production scaffolds assist learners in producing the output in a particular presentation format that can include pre-produced templates

but also multimedia.

There is a rich variety of webquest templates available on the Internet and a considerable number of webquests accessible through portals. The use of these can greatly reduce the amount of time that trainers have to invest in seeking appropriate material on the Internet in order to develop webquests.

4.6 Digital literacy and rich resources

One of the basic ideas around the webquest methodology is that learners have to face real life situations that include social interaction, collaboration, critical thinking and of course effective use of the internet and technology in general. A key aspect of digital literacy is the ability to search for and evaluate the right information for the right purpose. The webquest methodology can provide support to learners in order to develop their digital literacy. Working in groups with facilitator support can assist the learner to better understand how to effectively use the internet, find and share information, and use web 2.0 and social software.

Trainers can create webquest activities without an advanced level of computer skills. All they need, apart from basic computer literacy, is access to the internet and of course a computer or handheld device.

According to March (2005) "Webquests take advantage of the Web's ability to present resources that might be interactive, media-rich, contemporaneous, contextualized, or of varied perspectives". The multiple representations of a topic offer to the learners the opportunity to better evaluate the information and construct a new understanding of it. Coiro (2003) points out that these multimedia representations demand new ways of thinking about how to access, manipulate, and respond to information. She puts forward webquests as activities to train learners in multiliteracies. She considers that "In terms of new literacies, these web-based inquiry projects demand fairly high levels of thinking and collaborative problem solving that may surprise readers used to more traditional reading tasks". She also argues that the presentation of information in different modes, not only prepares learners for multimodal literacy, but also accommodates individual differences in learning style, helps comprehension and facilitates transfer to long-term memory. The creators of the webquest have also stressed that this is a format intended to take advantage of the Web's capabilities and so develop digital literacy. This literacy is necessary to navigate the hyperlinks in ways that enable the construction of purposeful meaning. Being able to evaluate information from the internet (e.g. evaluate the accuracy and usefulness of resources,

distinguish fact from opinion, assess the purpose and the ideology behind online texts) is another essential skill that can be developed through webquest activities.

In the era of the 'read/write' web information is presented in richer multiple-media formats which integrate diverse elements: written text, animation, graphics, interactive tools, audio and video. The high degree of interactivity and socialisation offered can support the process of understanding information and building knowledge in a collaborative but also self-directed way.

Shetzer and Warschauer (2000) have categorized electronic literacies into three areas: research, communication and construction. 'Research' encompasses a range of navigation, reading, and interpretation skills, including how to effectively search the Internet, how to evaluate information that you find, and how to critically consider multimedia information. 'Communication' involves mastering the pragmatics of various forms of synchronous and asynchronous communication, both in one-to-one interaction and 'many-to-many' electronic discussion forums. 'Construction' involves the ability to work individually or collaboratively to write and publish information on the Internet, and includes mastery of hypermedia authoring.

The revised Webquest 2.0 framework can support learners in developing digital literacies so that they can take advantage of the learning possibilities that web 2.0 technologies can offer like using advanced search tools (open electronic databases in order to locate information), or communicating with experts for a specific topic via forums, microblogging tools or other tools of communication, co-creating authentic material including audio, video and text, participating in open communities etc.

The following table (Table: 4) presents in parallel the basic theoretical elements of Webquest 1.0 and Webquest 2.0 methodology. It shows the common features and the differences between the two webquest versions.

| Theoretical core elements | Webquest 1.0 | Webquest 2.0 |
|--|--|---|
| Basic educational Theories/ Models | Social Constructivism (Vygotsky, 1978,) / Problem Based Learning (Sweller, 1988) / Inquiry Based Learning (Savery & Duffy, 1995) /Learner centered approach (Dewey, Piaget, Vygotsky). | Social Constructivism (Vygotsky, 1978) / Problem Based Learning (Sweller, 1988) / Inquiry Based Learning (Savery & Duffy, 1995) /Learner centered approach (Dewey, Piaget, Vygotsky). Connectivism Learning Theory (Siemens, 2005) Lifelong Learning/ Autonomous Learning/ Blended Learning |
| Theory of Scaffolding (Social development Theory-ZPD) | Quality resource links, compelling problems and production of templates/ Framework of 6 stages. | Quality resource links, tools (free selection included), production of group and task templates/Framework of 7 stages (Learning Circles). |
| Theories/Models of Motivation | Keller's ARC model of motivation (1984) | Intrinsic motivation (Malone & Lepper, 1987). |
| Critical Thinking/Higher order thinking | Critical Thinking: Older Bloom's taxonomy (1956): WebQuests 1.0 extend the learners thinking to the higher levels of Bloom's taxonomy; analysis, synthesis and evaluation. | Advanced critical thinking: Webquests 2.0 extend the trainees' thinking to the higher levels of the Bloom's digital revised taxonomy (Churches 2009): applying, evaluating, creating. |
| Collaborative/Cooperative Learning | Collaboration/Cooperation between the members of each group. | a) Cooperation between the members of each group; b) Collaboration between the members of each group; c) Open collaboration with people outside the learning environment supported by Web 2.0 tools. |
| Electronic resources /literacies | "Read" Web 1.0: Internet resources. | "Read and write" Web: Web 2.0 services/ applications. |

Table 5. Theoretical core elements of Webquest 1.0 and Webquest 2.0

5. Introducing the Collaborative Blended Learning Methodology in SMEs

A small or medium sized enterprise intending to introduce the *Collaborative Blended Learning Methodology* has to pay attention to the following issues:

1. Management commitment and support.
2. A project manager is responsible for implementation and well trained in the use of collaborative learning.
3. The development of a pilot project.
4. Training for internal trainers and facilitators must be conducted.
5. A promotional campaign within staff (Motto: "explore, try out, develop yourself, combine, choose the solution").
6. The right choice of training topics:
 - a. Topics for practical use
 - b. Topics which meet learners' needs.
 - c. Only produce Webquests which meet current learning needs
7. Employee's motivation
 - a. Presentation of benefits to the employees.
 - b. Publication of learning success stories in intranet or other in-company communications channels.
 - c. Providing learners with time for learning (pay attention that each employee learns at own pace).
8. Introduce guidelines for the use of collaborative learning:
 - a. Allocate sufficient working time to allow trainees to fully participate in the Webquests
 - b. Guidelines on evaluation tools and deadlines (e.g. who has to complete which training, which information collected within the training will be collected, awards or sanctions in the case of finishing/not finishing the course).
9. Technical infrastructure is available (computer, internet connection, software).

6. The choice of the right topic for a training based on Collaborative Blended Learning Methodology

The right choice of a training topic, which will be deployed as collaborative blended learning, is critical for success of the event. The following check list can help in deciding on the appropriate learning methodology:

| | |
|---|--|
| 1. Is the training urgent for the company? When the employees have to start to use the new knowledge? | <p>If it is urgent, it provides an impetus for participants to complete the training.</p> <p>If it is not urgent and the employees will not have the possibility to try out acquired knowledge, there could be problems with motivation to complete the training.</p> |
| 2. Is the topic sufficiently important that all employees must complete the training? | A mandatory topic will provide an impetus for learners to complete the training. |
| 3. Is face-to-face training really not critical for training efficiency? | In some cases face-to-face training is the most powerful tool. Nevertheless collaborative learning can be an efficient solution used before face-to-face training in order to prepare the participants for the training. On the other hand it can be used as one of the follow up tools. |
| 4. Are the participants dispersed throughout a geographic area? | If yes, it provides a kind of 'natural' motivation to use collaborative learning, since the savings on traveling costs and time, are a motivation for employees. |
| 5. Does the knowledge delivered in the training change quite often (i.e. knowledge about products)? | If yes, the benefits of collaborative learning tools are visible to employees and provides motivation. |
| 6. Are the sources of knowledge / skills, which are intended to be delivered in the training, dispersed in the company? | If yes, it is a great argument for use of e.g. wikis or blogs in order to collect the knowledge and skills in one place, easily accessible and editable by every employee. |
| 7. Are the sources of knowledge, which are intended to be delivered in the training, dispersed in the internet? | If yes, Webquest 2.0 methodology can be used. |
| 8. Is there a need to collect the knowledge gained during the training in the company's knowledge base? | If yes, it is a great argument providing motivation. |
| 9. Are there enough employees to build a training team? | If yes, great. If not, other solutions (e.g. open seminars offered on the market) could be a solution. |

Table 5. Check list for training, based on Collaborative *Blended Learning Methodology*

7. Research Review: What are the educational benefits and implications of WebQuests?

There are numerous studies that analyse the webquest methodology and its basic elements, examine its learning impact in different disciplines, propose useful examples of practice since 1995 that it was first introduced. Apart from Bernie Dodge's research work (see references) who created the webquest methodology, his student Tom March (see references) has contributed with his research trying to further explain and evolve the initial webquest framework and its basic theoretical ideas. Many other researchers (Yoder, 1999; Watson, 1999; Barba, 2002, 2003; Area Moreira, 2004; Adell, 2004; Muñoz de la Peña et al., 2004; Novelino, 2004; Jones, 2005; Peterson et al., 2003; Spanfelner, 2000; Kelly, 2000; Papanikolaou, 2004; Chardaloupa, 2004; Grassato, 2004) have also done research on the same topic.

Although webquests are not activities originally intended for language learning, several researchers have explored their potential for this purpose (Coquard, 1998; Benz, 2000, etc³¹). Other researchers have also explored the impact of webquest in subjects like mathematics (Viseu & Machado, 2003; Guimarães, 2005, etc³²), physic and chemistry, (Bottentuit, Coutinho & Alexandre, 2006; Neves, 2006), history (Cruz & Carvalho, 2005, etc³³) and in many more fields (Blanco Suarez, 2001, etc³⁴).

An interesting literature analysis was conducted by Abbit and Ophus (2008) with the aim to understand better what has been learned about the webquest approach in the ten years since the concept was first proposed. Specifically, the review seeks to identify what has been revealed by the body of research found in refereed journals and professional publications relating to educational technology as well as in conference proceedings about the impact of webquest on the multiple facets of the teaching and learning process including learners' achievement, cognitive level, and motivation. The initial search produced 114 published sources, 108 of which were identified as being related to webquests. Of these 108 references, 58 were papers presented at conferences and 44 were reviewed or refereed articles. Also included were two reports, two web pages, and two theses. The research process for the study

31 Benz, 2001; Koenraad 2002; Luzon M., 2002; Brabbs, 2002; Stoks, 2002; McDonell, 2003; Blasszauer, 2003; Dudeney, 2003; Koenraad and Westhoff, 2003; Perez Torres, 2003, 2006; Dudeney, 2003; Richards, 2005; Simina and Hamel, 2005; Mezzadri, 2005; Perifanou, 2006, Perifanou, 2009; Costa and Carvalho, 2006; Tsai, 2006; Brito and Baia, 2007; Fernandez, 2007; Barros and Carvalho, 2007

32 Cruz, 2006; Gouvea, 2006; Quadros, 2005; Sampaio, 2006; Silva, 2006; Xavier, 2007.

33 Gaskill, MacNulty and Brooks, 2006; Martins, 2007; Cruz et al., 2007.

34 Castronova, 2002; Milson, 2002; Lara and Reparaz, 2005; Gorghiu et al, 2005; Zheng et al., 2005

included a preliminary literature search for all published articles, theses, dissertations, and conference proceedings relating to the implementation of the webquest strategy at all levels of education.

The initial search produced 114 published sources, 108 of which were identified as being related to webquest. Of these 108 references, 58 were papers presented at conferences and 44 were reviewed or refereed articles. Also included two reports, two web pages and two theses. The majority of the articles identified by the literature search were descriptive in nature and were predominantly articles describing how webquest were used in a specific context. Though some of these articles suggested practices and methods that would support the use of webquests in various learning contexts, they did not meet the selection criteria for identifying research-supported practices as they did not incorporate a research method. Forty-one of the retrieved articles (37.9%) described some type of formal research method and met the criteria for further review. The majority of these articles were either empirical or evaluative studies, though case studies, action research, and qualitative methodologies were identified as well.

According to the research findings, several studies identified attitudes and perceptions that were generally positive towards webquest (Carroll, Legg & Taylor, 2003; Fox, 1999; Gaskill, et al., 2006; Santavenere, 2003) while other more notable research identified impacts on motivation (Murray, 2006; Tsai, 2006), clarification of information (Gorow, Bing, and Royer, 2004; Beyerback & Burrell, 2004), as well as the benefits of collaboration (Milson 2002; Kortecamp & Bartoshesky, 2003), development of collaborative work skills (Leahy & Twomey, 2005) and perception of technology skills (Gorow et al., 2004; Dell, 2006).

In the following years, it was also found that the webquest methodology promotes collaboration (Roberts, 2005), motivation, commitment (Lara & Reparaz, 2007), critical thinking and higher cognitive presence (Kanuka, Rourke & Laflamme, 2007; Popham Lina & Wentworth, 2003), in contradiction to an earlier study (Molebash, Dodge, Bell, & Mason, 2002) that explored the 'WebQuest.org' database and found that there may be difficulty in supporting some of the higher level thinking skills. There is a lack of research on the impact of webquests on learning and achievement (Milson, 2001, 2002; Strickland, 2005). Nevertheless Tsai (2006) refers to a higher level of achievement in the language learning context (vocabulary and story reading) while other research (Burke, Guffey, Colter & Riehl, 2003; Gaskill et al., 2006) found there was no significant difference when comparing the webquest methodology to more traditional methodologies.

The findings of the research described confirm that the webquest methodology has a promising future in training.

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