TWiki-based facilitation in a newly formed academic community of practice

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ABSTRACT

This paper reports on the first results of an on-going project whose aim is to evaluate whether a wiki-based knowledge sharing tool like TWiki facilitates effective processes of knowledge building, sharing and transfer and fosters collaboration in a community of practice made up of Italian teachers. The project started in October 2004 and first data were collected five months later. The project was an attempt to provide them the opportunity to build more productive working relationships, stimulate new ideas, take advantage from the sharing of the broad range of professional knowledge and expertise that resides within the school. We chose TWiki as collaborative environment because its features met our needs quite well: it is open, free, easy to customize, has a versioning system and does not use proprietary technology.

User training focused on both conceptual and technological aspects of TWiki.

An ethnographic approach was applied to describe users' behaviour and dynamics. The results presented here describe a number of patterns of user activities together with some problems derived from the specific social and cultural context of TWiki usage observed.

General Terms
Experimentation, Human Factors.

Keywords
Wiki-based case study, TWiki, wiki-based community of practice, collaboration.

INTRODUCTION

This case study explores the situated use of TWiki, a wiki implementation, to support a group of 25 teachers, belonging to different schools in the same urban area, who volunteered for a project sponsored and funded by the Municipality of Ancona, Central Italy. The objective was to build a Web portal to host a professional online community of teachers. Participants in the project wished to support each other in their everyday practice, collecting and sharing examples of good practice, collaboratively creating teaching materials, building up a database of teaching resources, developing new teaching strategies and learn from the others' experience about new

methodologies and ways of exploiting technological tools. They saw the project as an opportunity for increasing their effectiveness as teachers but also as a motive for engaging in collaborative work. A Web portal would have helped the teachers achieve their goals: besides serving as a motivating display of their experiences and a location for discussions about work practice, possibly as a means to involve the wider community. A TWiki site was then configured to allow for group collaboration because its features satisfied the stated requirements quite well: it is open, does not use proprietary technology, it is free, easy to customize and has a versioning system. The other people were involved in project were: the project coordinator as trainer and two PhD students as participant observers to follow the community start-up and early phases of development.

Although teachers create new knowledge through their work, it is often poorly documented and must be better managed to capture both tacit and explicit forms, by teachers working together as members of communities of practice [5]. Collaboration is not a current practice in Italian schools. The widespread individualistic approach to teaching makes the development of a collective sense difficult for professionals even to contemplate. Nonetheless, here we have a case where a collective sense of goals and teaching approaches has been called for. However, collaboration is a complex and demanding activity. It requires developing trusting, collegial relationships; dealing with conflict and maintaining clear focus [4]. On this assumption, teachers were given a blend of face-to-face and online guidance. In the first months its members developed their own rules of participation, through online and face-to-face discussions and behaviour modelling. We chose to adopt an ethnographic approach to study the community using different techniques: semi-structured interviews, participant observation, field notes, informal conversations. TWiki log files, too, provided relevant data.

The rest of this paper is organized as follows:
Section 1 details the TWiki architecture and implementation and the reasons why it was selected.
Section 2 draws an outline of communities of practice identifying their constituent elements.
Section 3 reviews the context of our case study. Describes the methodological approach and analyses the case study.
Section 4 describes the findings based on data collected and interpreted to gain a first insight into the nature and quality of the collaboration among the community members and highlights problems encountered.
Finally we draw our conclusions about the experimentation.

1. TWIKI IMPLEMENTATION

The main reason why we have chosen TWiki (www.twiki.org). among the many different wiki implementations is the presence of a local (Italian) small community of experts that have been helpful in setting up the system and customizing it (didattica.dma.unifi.it/WebWrite; twiki.dsi.uniroma1.it). The site address is: http://www.scuolacollaborativa.it/twiki/bin/view TWiki is a versioning, template based wiki. The, "topics" (Web pages), are divided into "webs", that is, areas (just one level of directory). TWiki is a rich wiki and we have successfully exploited many of its features in our project. In particular we have found the following very useful:
-attachments management
-user/group access control
-revision control
-skin and template management
-management of metadata associated to topics.
The access control is based on individual and/or group permissions at site, web and topic levels. Before being displayed, text is processed by the wiki "beautifier" for the transformation from wiki syntax (quite rich in TWiki) to HTML. It is possible to use any HTML tag inside the text respecting some general rules:

- do not span a tag over more than one line
- remove all empty lines.

This last feature has been very useful to allow users to build topics in which images and graphics are extensively used. JavaScript can be added to TWiki applications. During the beautifier process dynamic components may be inserted using "special" tags. Using different templates it is possible to customize, at user level, TWiki "look-and-feel". This is called "skin" mechanism and has been used to customize the look of the site. The top and left bar of the topic are in fact customizable at web and user level. For security reasons the TWiki installation runs under chroot. The chroot command forces a program to run under a subset of the file system, without allowing access from it to any other parts of the file system.

The main features to be reproduced under chroot are, respecting the FHS (File Hierarchy Standard)**:**

-the Revision Control System
-the Perl library used inside TWiki script
-the sh and bash shell command.

Another useful TWiki feature is the plug-in mechanism and template system, that we have used to develop a multi-language version of this tool. In order to be easily accepted by our customers, we need an Italian interface. We also wanted to keep the original English interface, instead of simply translating it. We have developed a slightly customized version of TWiki that allows the choice of interfaces in different languages. Instead of translating the templates, we have chosen a wiki-like approach, using a special page (pointed by a TWiki preference variable, VOCABULARY) that keeps, in a table, the translation of all "framework" strings, that are then inserted into templates using "special" tags. In this way it is possible to use different skins in different languages, without many efforts. In fact, to add a language it is necessary to add a column for the relative language in the vocabulary topic.

TWiki developer Andrea Sterbini, from Rome La Sapienza University, has implemented a plug-in for handling different translations of the same page, modeled after Wikipedia. One page is the main one, and contains the links to all translations. Each translation simply declares which is the core page for translations, and links to all translations are automatically inserted. Finally, from the point of view of our research we have found very useful both the fact that the system dynamically generates and presents statistics from a comprehensive set of aspects deriving data from the log files and the automated e-mail notification of topic changes.

2. THE STUDIED COMMUNITY OF PRACTICE

2.1 The social and cultural context

This case study explores the use of a wiki to support collaboration in a group of 25 teachers belonging to different schools in the same urban area. The core group has 10 regular contributors, 5 of which have taken quite definite roles. The participants of the project come from different school orders: nursery school, where they work with children between the ages of three and five; primary school, where they deal with children in the age group of 6 to 11 and secondary school (age group 11 to 14). They are specialized in a range of different knowledge domains: Science, Math, Art, Italian, History, Geography, though most primary school teachers instruct one class of children in all the subjects. They are now facing the challenge of enriching teaching and learning through imaginative educational use of ICT and have to deal with related issues.

The core group of teachers volunteered to participate in a project sponsored and funded by the Municipality of Ancona, Central Italy. The project, entitled "STUdiARE", activated within the frame of the Year 2002 nation-wide E-government Action Plan, had a twofold objective: first, to promote the use of information and communication technologies to automate the administrative tasks of schools and ensure the online accessibility of relevant

information to families and, second, to develop a teaching Web portal with the aim of fostering collaborative work among teachers. The interest of the teachers' community focused on the second objective.

These people belong to the wide professional teaching community therefore already share a wide repertoire of resources, tools, and meanings. Participation in the project would have provided them the opportunity to build cooperative relationships with colleagues with varying expertise, learn from their peers and transform current working practices, in a word to adopt a community of practice perspective on professional development.

Wenger [9] describes communities of practice as "groups of people who share a concern or a passion for something they do and who interact regularly to learn how to do it better". A virtual community has an online component; it is "a group of people whose members are connected by means of information technologies" [10]. The studied community works mostly off-line, in fact TWiki has been used as a complement to face-to-face collaboration.

The community building process is a lengthy one. In our case study five months is undoubtedly a very short time span for the community to fully develop: it has the potential, though, to become a true community. At the time being, the observed group appears to fulfil some of the basic requirements of communities of practice identified by Wenger [9]: they share common interests and are mutually engaged in their enterprise; they do share a number of objectives, though still rather broad ones with no definite deadlines, that have been negotiated in face-to-face meetings and later reasserted in the first online discussion when they came to an agreement as to the site structure; their focus is mainly on the development of a collaborative attitude, they have been sharing professional expertise and are trying to create the conditions for tacit knowledge to become explicit and make it available to anyone interested. Practices are a fundamental element of communities: they exist because people are engaged in actions whose meanings they create and negotiate with each other. In TWiki the community members are developing their practices both online by publishing either sole-authored or co-authored contents and in face-to-face meetings learning how to use the tool, uploading materials, planning their contributions to the Web portal.

Communities of practice are considered a powerful learning tool in the light of Wenger's social theory of learning [5], according to which learning happens in the context of social practice. Newcomers are welcome in the TWiki experimentation group and participate in the tasks relating to the practices of this community, working side-by-side with the oldtimers during face-to-face meetings and while online imitating other users' actions availing themselves of the "raw text" functionality.

Prior to starting the project, a minority of teachers were already used to hold regular face-to-face meetings in order to plan and coordinate their activities; among these a few had already been engaged in online activities or discussions related, for example, to refresher courses. However, in the overall group of teachers, the majority had always worked individually and had limited experience with ICT.

3. CASE STUDY ANALYSIS

3.1 Project overview

Besides the teachers, the project involved other actors: the councillor in charge of the municipal education services, an engineer appointed as the project coordinator by way of his mastering of the TWiki implementation and two PhD students from the Faculty of Engineering of the local University. The students did the research work as part of their doctoral thesis acting as participant observers to follow the community start-up and early phases of development. Initially the teachers had broad, long-term objectives. In the course of the first school year (October 2004 – June 2005) they wanted to build a Web portal using open source

technology and experiment it, without involving their students, with the following purposes:

- collect and share examples of best practices;
- circulate experiences and projects successfully realized;
- collaboratively design teaching materials;
- build up a database of shareable teaching resources and ideas;
- collectively develop new teaching strategies;
- learn from their colleagues' experience how to try out new methodologies and technological tools.

To foster the emergence of a community whose aim was to communicate, collaborate and coordinate their work across time and space barriers, initial users' requirements were: an open source, easy to use Web publishing tool, a documentary database, a knowledge base building and management system, an asynchronous communication tool such as a forum. The project coordinator suggested using TWiki because its features met all the initial requirements; as for the forum request, he was positive that TWiki "add comment" functionality would have served the same purpose. The teachers, overcoming initial concerns about the rather disconcerting unusual "openness" of the system agreed on the choice; however, because of persistent security and safety concerns related to possible spamming or vandalism they asked for access restriction to the environment. The project coordinator granted the request without considering another possibility: to make the site accessible read-only by non participants.

A specific training course was devised for the system users. Specific training both in appropriate TWiki use and in the culture and social aspects of wiki use proved beneficial. The four training sessions facilitated by the project coordinator were attended on a regular basis only by the core group, while others participated occasionally. The course was designed to familiarize TWiki users with its basic features: once they mastered TWiki formatting rules, they were able to create, structure, save and edit new topics, create links by means of WikiWords, upload materials, attach and manage files, create slideshows, add comments and thus organize shared spaces for discussion. Training was also essential to help users overcome lack of familiarity with wiki philosophy. An implicit aim of the course was to train future trainers.

Communities, like other living things, evolve going through a number of phases [10]. We have observed three phases in the community life cycle so far: the incubation phase, the learning and experimentation phase and now, the expansion phase. This community started as a loose network of people who had in common the need for professional development and were offered the technological means and the organizational support to put together their resources. Their potential developed as they started building connections, learning to use the software and engaging in joint practices. The third stage of community development coincides with the involvement of yet more teachers in a new training course where a member of the core group acts as trainer and facilitator, reporting on the positive early experience and showing concrete examples of how TWiki peculiar features could be successfully exploited to suit the needs of a teachers' community.

3.2 Methodological approach

We have chosen to analyse the community from an ethnographic perspective, as this seems to be the most suitable approach to gain an insight into contexts of socially and culturally situated actions especially when the purpose of the researcher is to understand how people negotiate the uses of technological systems and construct and attribute meanings to them [8]. Therefore the scope of the research is not to extract a

general pattern of TWiki use generalizing the results but rather to observe and study a specific activity system and users' behaviour and dynamics. One possible strategy was to find indicators to describe users' collaborative activities and action patterns in order to measure the effectiveness of collaborative practices developed in this specific system. In ethnography there are many possibilities for data collection. We have integrated different techniques: participant observation, semi-structured interviews, informal conversations, field notes and data extracted from the system log files.

3.3 Data collection

TWiki allows for three sources of data collection:

- monthly Web statistics (derived from log files)

- page history

- log files

The Web statistics allow a first glance time or individual related distribution of activity on a monthly basis. The page history, through which we can retrace who did what and when is also a valuable source of data regarding the collaboration process. Data from log files were imported into a spreadsheet and filtered according to the specific information we wanted to extract. Log files keep a detailed record of TWiki usage, identifying who performed operations (identified through login name and computer IP address), records kinds of actions (attach, changes, edit, save, register, view, search, rdiff, rename, upload), when and on which web and topic they were performed. Based on this data a lot of valuable information can be inferred regarding individual's performance, the community overall level of collaboration and site size and growth. Information about users' perceived effectiveness and problems encountered could be obtained by means of observation, semi-structured interviews, field notes. Purpose of the interviews was to inquire about the following:

- Degree of motivation

- Individual collaborative attitude

- Previous (if any) collaborative experiences

- Technological skills

- Previous participation in online communities

- Level of involvement in the project/Expectations

- User interface perception

- More commonly performed operations on the system

- Site usability and navigability

- TWiki actual use with respect to initial objectives

- Problems experienced in the use of TWiki

- Relevance of institutional support to the project

- Learning potential of communities of practice

- Consequences at community management level of the absence of formalized roles such as moderators or tutors

On the whole we have collected both quantitative and qualitative data.

3.4 Data analysis

The objective of this analysis is to examine whether mining the information extracted both from the TWiki records, community observation and interviews can reveal interesting trends in the collaboration profile of community members. At individual level, we have tried to understand the significance of individual activity in the knowledge-building context and individual perceptions. We have derived patterns of activity to retrace instances of shared practices. We have also identified the most

relevant periods of activity for the entire project. From the figures we will be able to notice periods of large or scarce activity, actions frequency and distribution over time. Problems and criticalities have emerged from interviews, observation and field notes.

3.5 Qualitative data

Qualitative data have been collected analysing the history, contents and style of site pages. In a wiki there are two ideal distinct forms for contributions: ThreadMode and DocumentMode, but in the TWiki site there is sometimes no clear distinction between the two modes: comments happen to be embedded into contents, discussion often been inspired by the page topic.

3.5.1 Social norms
TWiki, like any other wiki, appears to be a rule-free environment. Anyway, we found out that, contrary to what wiki philosophy may lead one to think, users do not act arbitrarily, in fact their behaviour is governed by a set of social norms. Such norms are not always set explicitly but are nonetheless recognized by users. Implicit rules can provide needed flexibility for growth or changing conditions.

The group already brought some of the rules with them, while other rules have been codified within the community through shared practice. Belonging to the same community teachers have a high degree of shared social and cultural identity which determines what behaviour and style is or is not acceptable.

On this connection we would like to bring the attention to two points: writing style and signing pages. The style in which documents are produced is not what we would define Web-friendly: besides being very formal, it is even too lengthy and verbose – not surprisingly, almost all users express themselves in a patronising teacher-like style. Although being consistent with the institutional context in which teachers operate, it is not that suitable to Web

content. One of the users prompted the adoption of a rather informal style in discussions and in personal home pages, thus establishing a new rule.

As for the second point, users had reached a sort of consensus about not signing their contributes; but again one of the users, one whose production is outstanding, broke the rule and started applying his signature to the contents he authored, thus remarking his intellectual property. Nobody followed his example; our explanation is that all other users are instead inclined to promote shared ownership of data.

3.5.2 Social roles
A role defines the way a person interacts with TWiki, it is a word that describes his/her activities and responsibilities. We agree with Guzdial, Rick and Kerimbaev [3] that the roles identified are "products of the social process and the affordances of the environment". The following roles have been identified:

system administrator: can impose restrictions

trainer: teaches the mechanics and the concepts of TWiki

facilitator: helps users, rises motivation, coordinates actions

wiki gardener: fixes out-of-place things, corrects typos, rearranges pages

prompter: suggests courses of action, prompts new rules and uses

informer: circulates news around the community

connector: keeps contacts with the institutional world

collaborative author: co-authors contents

blogger or "one-man-band": authors contents exclusively by himself

viewer: browses through the site without actually contributing

4. FINDINGS

4.1 Collaboration indicators

Evaluating the community activity we have derived a number of collaboration indicators to gain an insight into the status of collaboration among community members and measure the

effectiveness of collaborative practices developed. We make a distinction between indicators specifically related to the TWiki environment and generic ones.

1. Collective designing and structuring of the TWiki site creating webs or areas of collaboration devoted to specific subjects.

2. Content co-authoring

3. Editing documents authored by others to different degrees, from minor spelling corrections to large text submission

4. Refactoring, means creating additional pages devoted to subtopics, renaming or deleting pages, reorganizing pages moving them to other webs or grouping them differently

5. Distributing, updating, integrating pieces of news and information; eliminating obsolete information

6. Synthesis of results of discussions

7. Creating new empty topics

8. Filling up empty topics

Other identifiable generic collaboration indicators:

- Discussion on subjects of common interest

- Mutual cognitive stimulation: users' actions trigger others' actions in response (ex: style switching from formal to informal or vice versa)

- More or less explicit invitations to collaboration: launch and acceptance of collaboration proposals

In appendix A you will find screenshots illustrating the above-mentioned indicators

4.2 Activity distribution

The overall activity has not been altogether regular. The short community life cycle shows peaks of activity around the training course lessons. Sparse or irregular usage of TWiki may signify that the community is not working enough. Reasons for this have been enquired upon and responses given by the teachers themselves. There are mainly three reasons. One is lack of time. Teachers are tangled by all sorts of commitments in their everyday work. Another is slacking of motivation due to the fact that in most cases headmasters and fellow teachers don't acknowledge the extra workload required by this activity. Third, many of them have not built enough competence yet to use TWiki autonomously. This is the reason why they have been concentrating their activity during the training course with the technical expert at hand ready to help solving problems, give advice, suggest courses of action, facilitate use, raise motivation. To measure the size and growth of the site we have applied the most basic metrics that consist of counting the number of pages and the number of contributions per each web per time unit. The chosen time unit is month on an overall period of five months. We consider contributions the "save" and "upload" actions. Of course these are only quantitative data, this doesn't say much about size and quality of contributions. In total for the full 5-month period we have counted:

-38 registered users

-10 regular contributors

-100 pages/topics

-2865 average page views per month
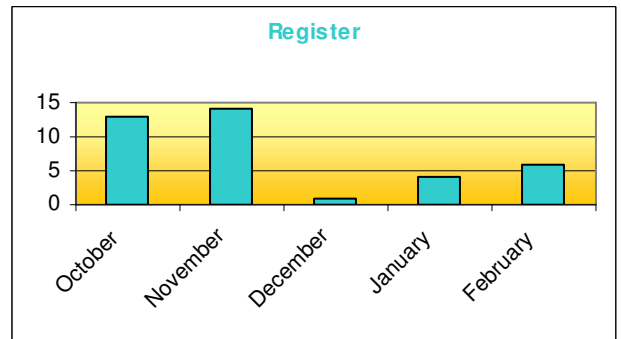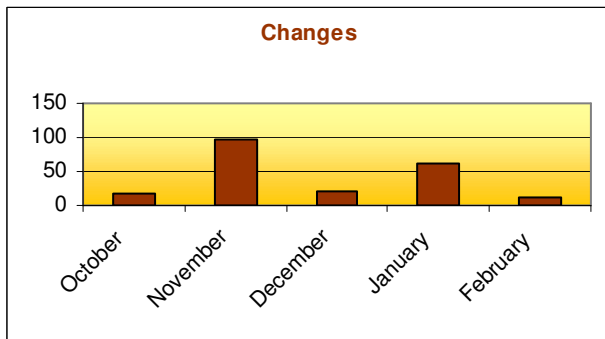
-695 average page saves/uploads per month

Figure 1
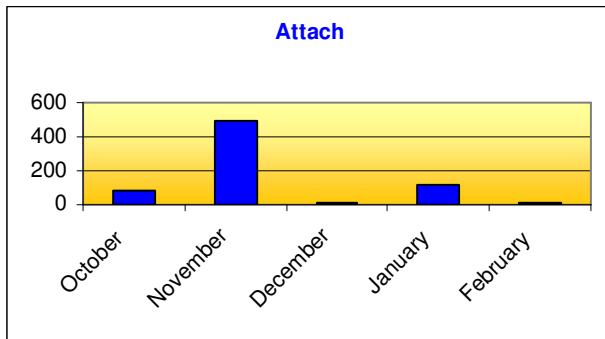
Attach

Figure 5

Register

Figure 2

Changes

Figure 6

Rename

Figure 3

Move

Figure 7

Save

Figure 4

Rdiff

Figure 8

Search

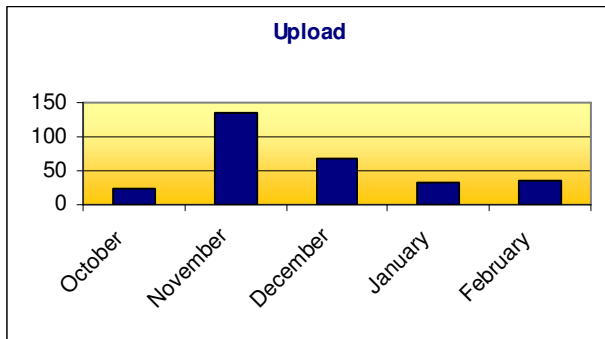**Figure 9**

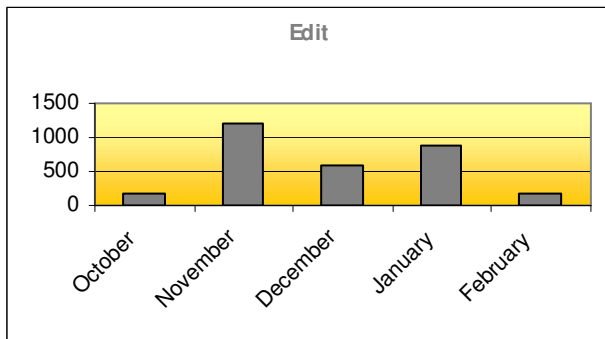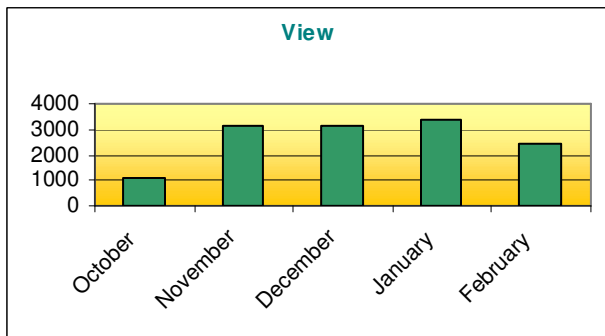**Upload**

Figure 10

Edit

Figure 11

View
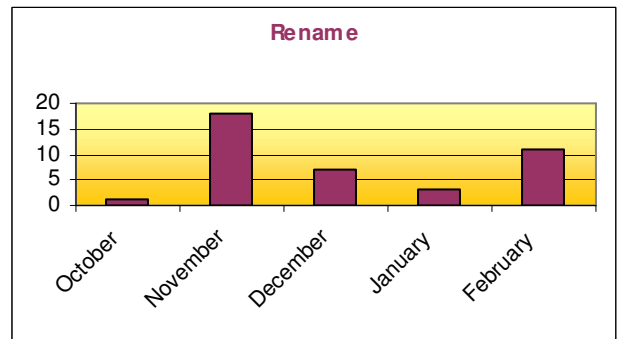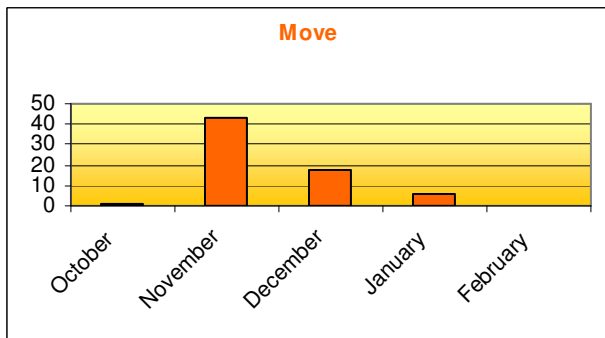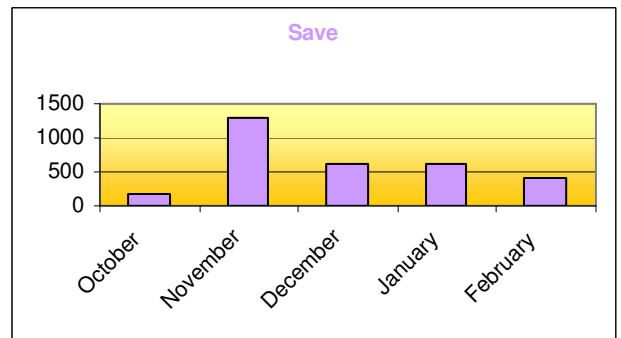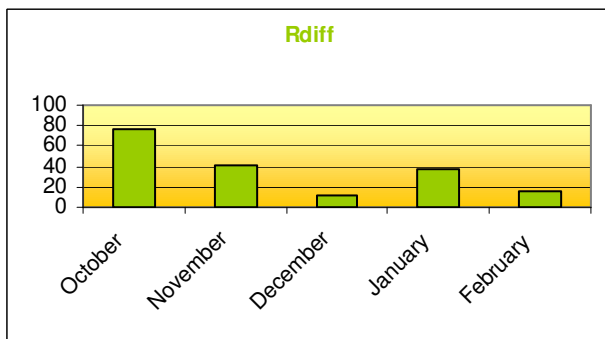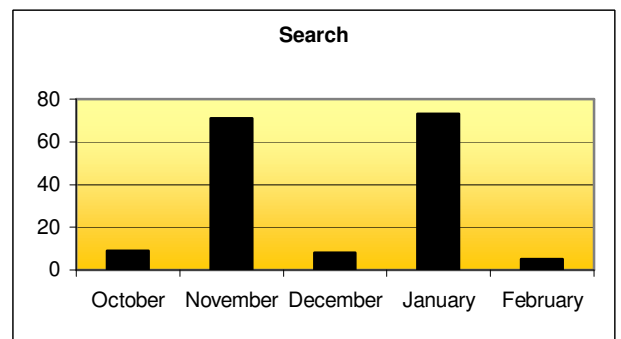
4.3 Patterns of activity

How do individuals contribute to the community? Within TWiki different users take on different roles and obviously they do not contribute to the same degree. We have tried to identify patterns of action among the members of the community:

1) Five members have authored and maintained a single topic or a set of topics that have not been modified by any other member except by their author. We may infer:

-each author has individually taken charge of an area of collaboration or of a subject;

-the site has been decomposed into a number of sub-sites each one implicitly (no open documented negotiation of task division) assigned to one member with a specific knowledge domain;

-discipline boundaries are yet to be crossed;

-TWiki allows for site division into restricted areas of collaboration

2) Five have authored and have been regularly modifying most documents in the TWiki repository. They have started earlier than others and have gained a deeper mastery of the tool functionalities. We may infer that such members are major responsible and a true leading role may develop over time.

3) Four members have made minor modifications to a number of files authored and substantially modified by others.

4) A number of members only read from a favorite set of topics checking up on the contributions of others from the list of changes. Very occasionally contribute to community-wide discussions.

5) The project coordinator has been acting as "wiki gardener". He has led the training course taking on the role of community facilitator, laying the ground for trust to grow and helping people thinking in new ways about sharing information and resources.

4.4 Uses of TWiki

It seems that in the early stages of its use TWiki, once collectively structured, has worked more as a space for storing finished products rather than working repository. In fact, the main effort appears to have been on circulating experiences and projects successfully realized.

In the whole site there are two examples of collaboratively built teaching material. It appears that with the growth of the community a few subgroups of two to four people have emerged each working on a specific area.

Later some community members set themselves a definite task, therefore started to use it actually as a knowledge and project management tool.

The highest number of contributions from different members is on topics of general interest.

Discussions have taken place on community-wide matters that have contributed building a sense of belonging and of community.

On- and off-line discussions aimed at:

-collectively building and structuring the site

-suggesting ways to improve the site visibility

-suggesting ways to cross the community boundaries and open up the site to anyone interested.

4.5 Problems and obstacles perceived

Many of the problems listed hereafter are not necessarily due to TWiki but have their roots in the social and cultural practices of the community using it; on the other hand, if the users perceive them to be system-related, they could have a detrimental effect on TWiki use and, in the long run, on its success. We report three orders of problems: usage-related, technical, social

4.5.1 Usage related problems

1) The site is in English and few people master English successfully; we have tried to solve the problem localizing the site (only partially by now, due to lack of time) both translating textual content and developing a slightly customized version of TWiki that allows the choice of interfaces in different languages.

2) Users dislike the idea of a new syntax to learn, even the ones with a technological background. TWiki formatting syntax is perceived as rather complicated and this forces users to often look up the rules while writing. In some cases html tags are needed and only a few people know html at all. This has prevented some users to become actively involved, referring actual document authoring to the more expert ones.

3) On the whole content creation and attachments management is perceived as quite complicated, while site navigation is considered quite smooth. This may discourage the use of TWiki specific functionalities. Users prefer to resort to external programs and resources they are already acquainted with, like Microsoft PowerPoint, and upload presentations or whatever they realize. It could be a matter of conceptual organization. More generally, it is attributable to average low technological skills. Anyway, users feel the need to engage in some more training.

4.5.2 Technical problems

Limited attached files size currently set at 10000 KB: file size limitation is perceived as an obstacle to uploading large files such as images or movies.

4.5.3 Social obstacles to TWiki-based collaboration

From a review of current findings regarding factors affecting wiki-based collaboration [1] [7] we already expected some of the social obstacles as mentioned below to emerge:

-Frustration at having own materials modified

-Fear of other people's criticism of one's own work, as criticism is not felt as constructive. Users are therefore less likely to contribute.

-Reluctance at giving up ownership of material as result of collaborative writing (some people apply their signature to make clear who authored the text) due to persistent feeling of ownership. Anonymity is felt disturbing.

-Fear of destructive input (the widespread concern with safety and security called for access restriction) though being aware that

deleted or deeply modified content can always be rolled back.

However, we did not expect the following criticalities to emerge:

-Unwillingness and hesitation at editing other people's work (at the beginning someone sent the project coordinator e-mails asking for his permission to edit other people's writings) for fear of offending.

-The idea of rendering publicly available documents that will remain in a state of perpetual unfinishedness is off-putting; people will not easily take on responsibility for this.

4.5.4 Problems related to community management and development

-Lack of coordination

-Lack of community "keepers" able to individuate problems and suggest solutions

-Lack of external visibility

-Lack of short-term objectives and definite deadlines

-Lack of social support from headmasters and fellow teachers

CONCLUSIONS

On the whole we can say that initial perceived effectiveness of TWiki was low, due to unfamiliarity with the tool and the concepts of wiki-based collaboration. However, overcoming the initial concerns about the rather off-putting "openness" of the technological environment users now feel positively about TWiki potentialities thanks to the training received. Although we believe it is not the technology in itself that is valuable, but rather how it is used, nonetheless TWiki has triggered a process of change in ways of interacting and managing professional resources. In this light the experiment was undoubtedly worth the effort and we have all reasons to recommend TWiki as a valuable tool for a community of practice to engage in the process of shared construction of knowledge across the Internet. A community would be all the more successful if, besides receiving appropriate training, they customize the site to suit their needs, are granted adequate social support and recognition, adopt positive attitude towards change and are supported by one or more facilitators to better cope with criticalities. A rich and complex site such as TWiki ought to be customized to suit users' specific needs. Moreover, we think the environment would work better on a not-too-large scale, say, 50-60 people. Larger numbers are likely to pose site management problems.

Technologies do not fall into a social void. Members of communities of practice make use of technologies in their own social and material context and in so doing they make sense of technologies somehow "reinventing" and "redesigning" them. Users attach socially negotiated shared meanings to technologies and act as mediators between the meanings designers attribute to technologies and the way they use technological systems in their everyday practice [11]. Wikis are not designed for predetermined uses and users and this means that it is up to the users to define meaningful tasks and uses.

TWiki experimentation is still under way; a group of teachers is currently using this environment to cooperatively design their school Web site welcoming ideas from anyone interested in contributing and this proves that they are now able to work on their own. It appears that sustained participation can be hoped for.

gave a precious contribution to TWiki Implementation section.

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APPENDIX A

Screenshots relevant to collaboration indicators

Figure 1: Collective designing and structuring of the TWiki site
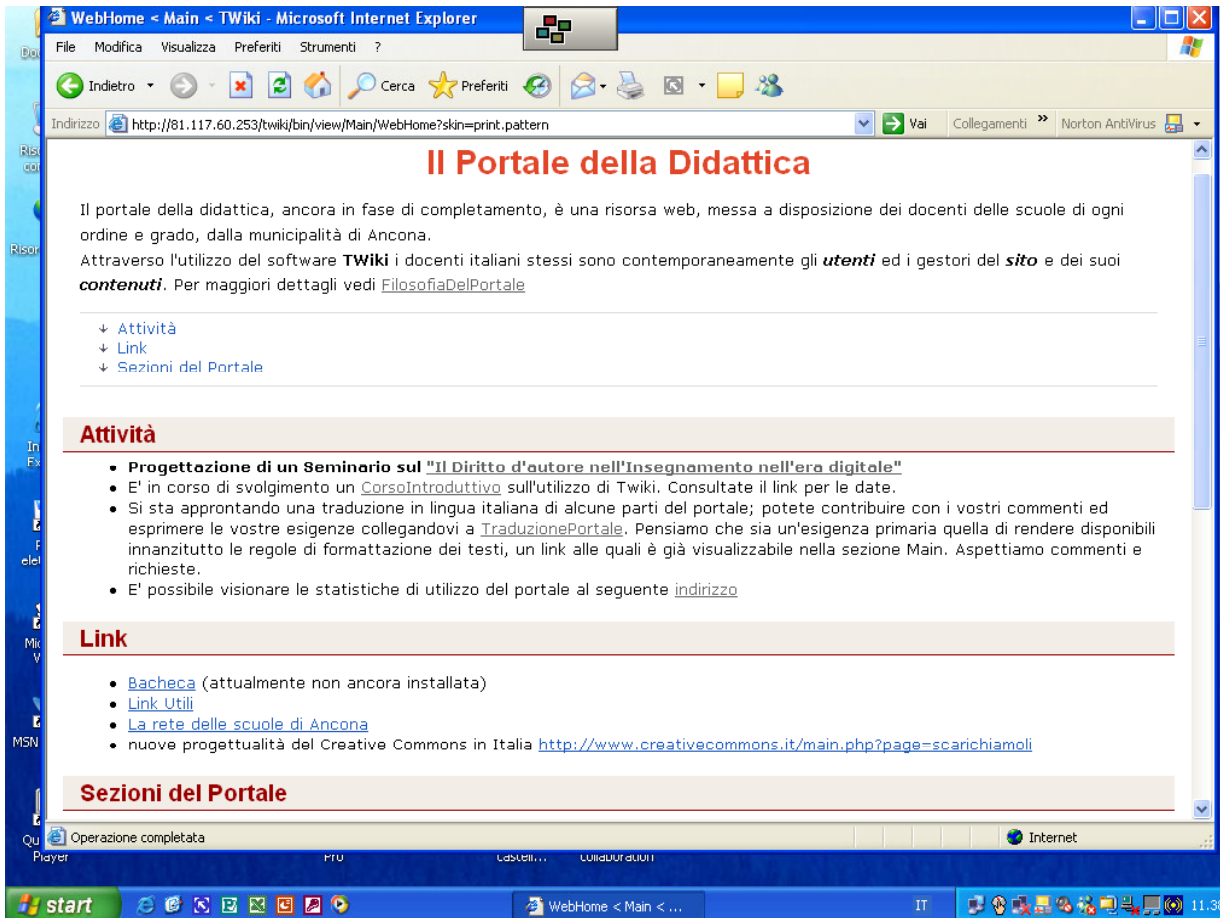
Figure 2: Collective designing and structuring of the TWiki site
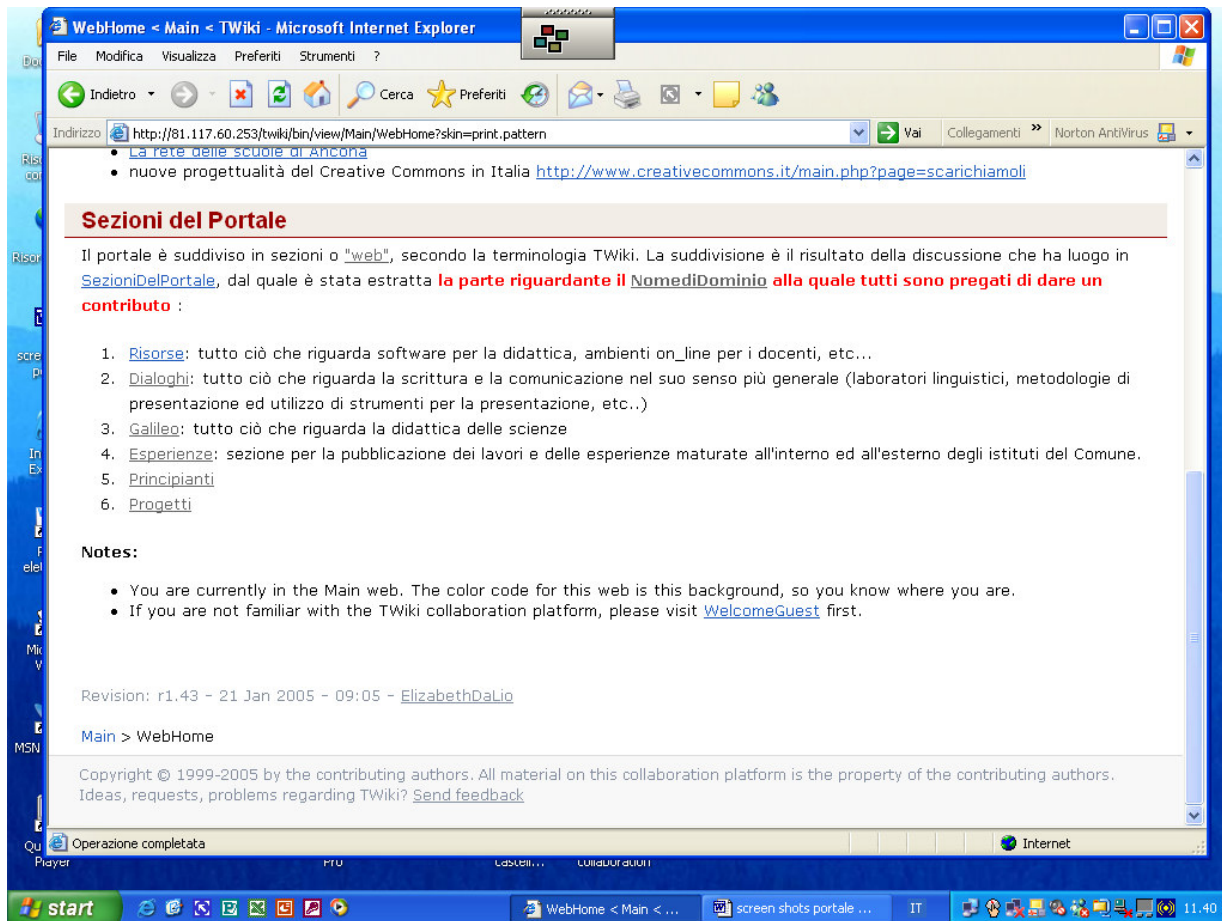
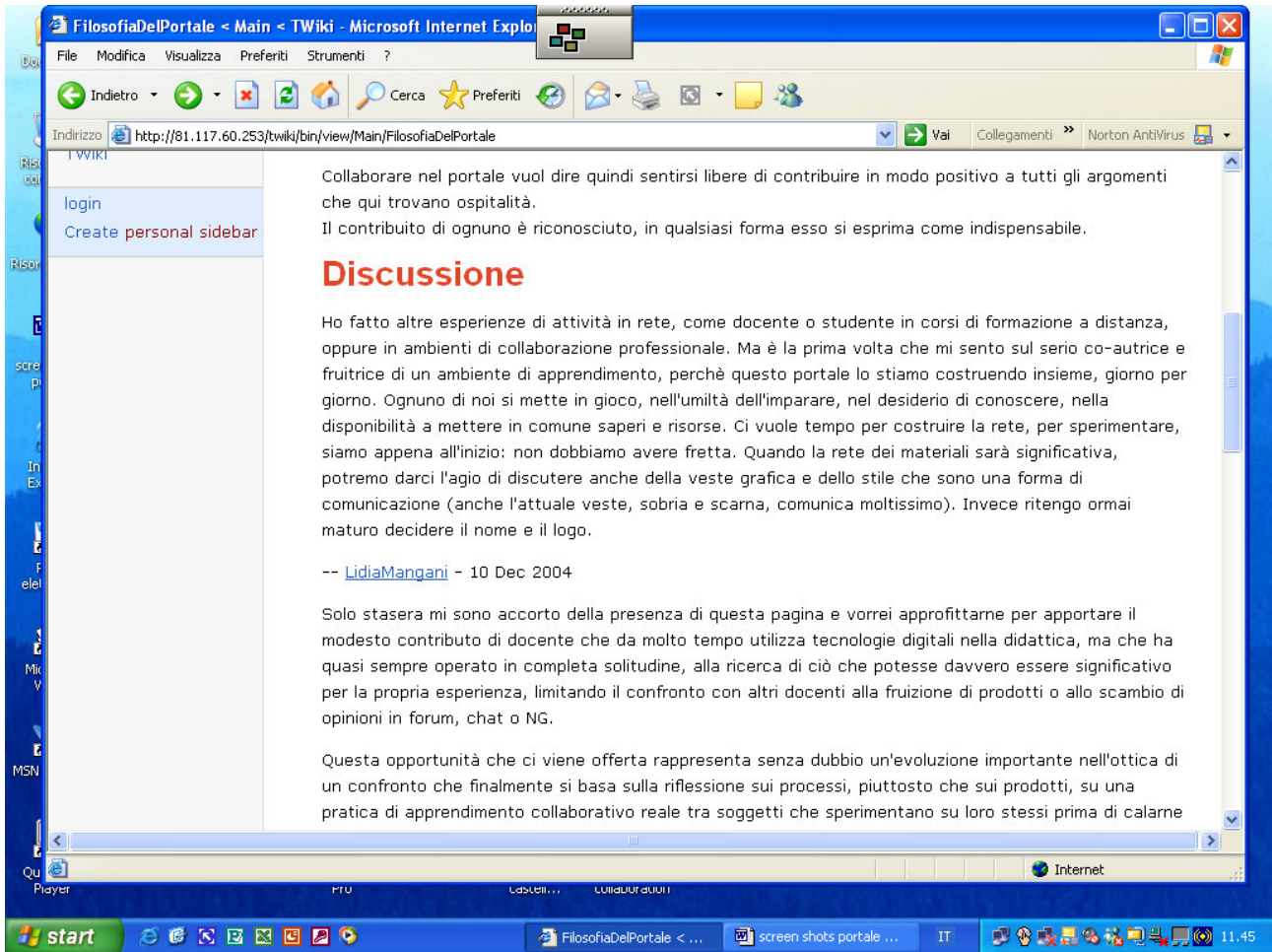**Figure 3: Discussion on subjects of common interest. Use of "add comment" functionality"**

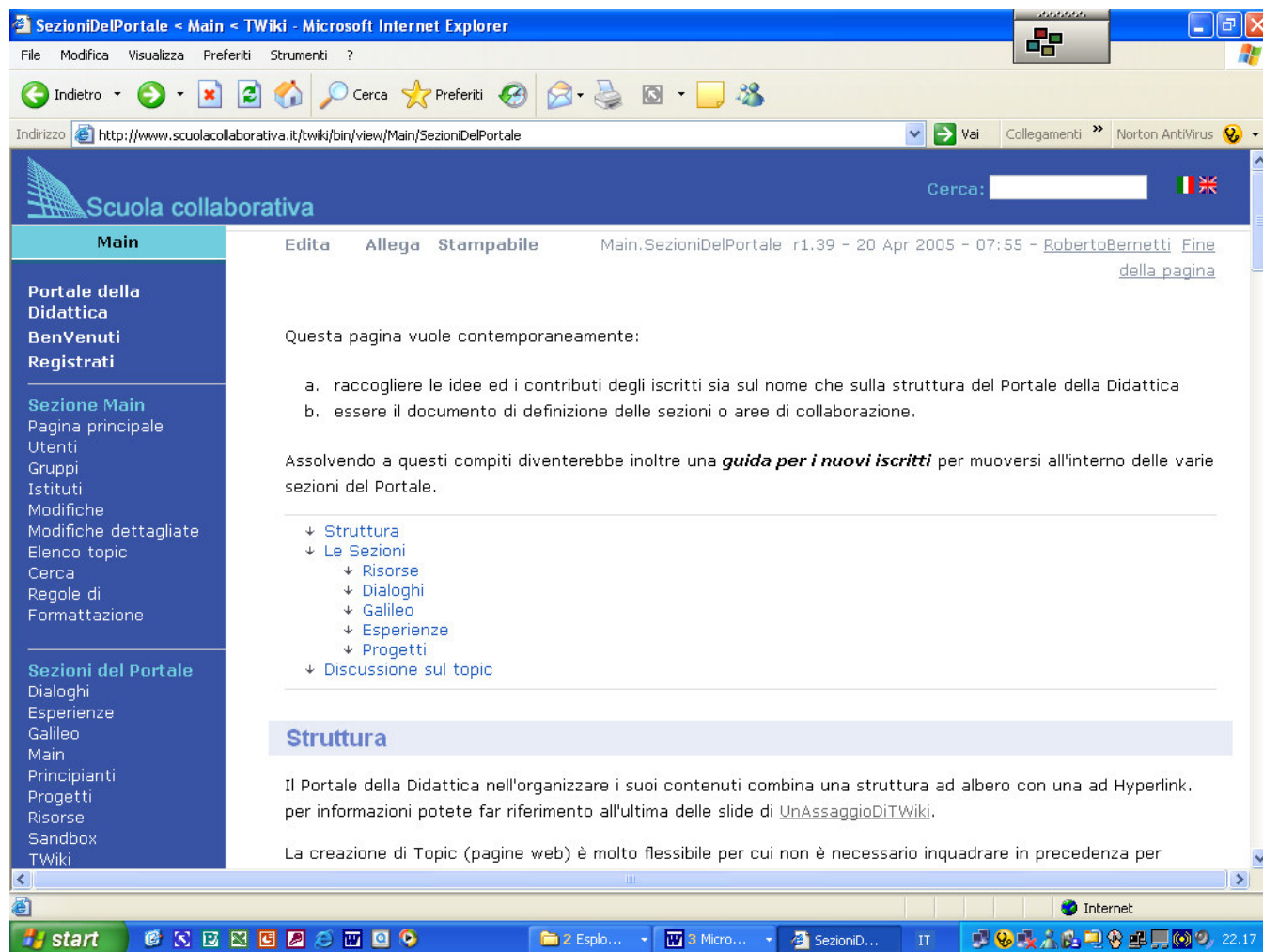**Figure 4: Synthesis (April 2005) of results of a discussion (dated November 2004)**

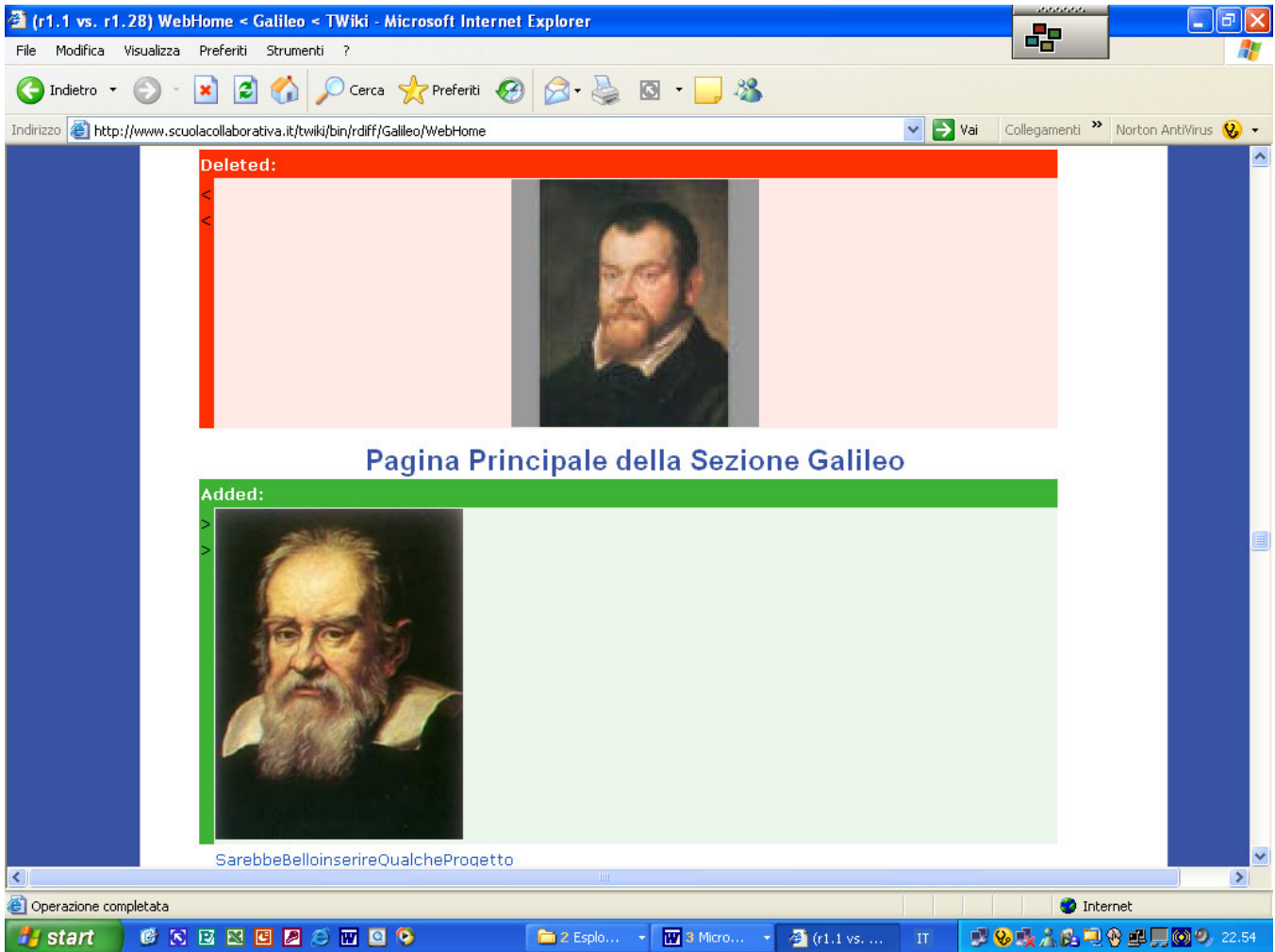**Figure 5: Editing documents authored by others (page history)**

Figure 6: Content co-authoring. 13 revisions between 9 Dec 2004 and 16 Jan 2005

Figure 7: Distributing, updating pieces of news

Figure 8: Creating new empty topics (in yellow /question mark)

WebHome < Galileo < TWiki - Microsoft Internet Explorer

File   Modifica   Visualizza   Preferiti   Strumenti   ?

Indietro | Cerca   Preferiti

Indirizzo http://www.scuolacollaborativa.it/twiki/bin/view/Galileo/WebHome | Vai   Collegamenti   Norton AntiVirus

Powered by TWiki

SarebbeBelloinserireQualcheProgetto

PollockeiFrattali

Finalità

Migliorare la qualità dell'insegnamento scientifico è uno degli obiettivi della scuola. Le esperienze condotte in questi anni nelle scuole, a partire dalla sperimentazione del Progetto SeT[2] (Educazione Scientifica e Tecnologica) hanno puntato: * sull'utilizzo delle risorse del territorio; * sulla realizzazione di attività di laboratorio; * sulla documentazione delle esperienze * sulla ricerca e scambio di materiali anche attraverso le reti telematiche

Attività

Se volete sapere qualche cosa sul MuseoPaolucci visitate il topic corrispondente

Cari iscritti al Portale, vi vorrei segnalare l'indirizzo di un sito creato dall'Ocse che intende favorire una migliore comprensione dei processi di apprendimento. L'indirizzo in questione è http://www.teach-the-brain.org. Grazie a Teach the brain (il sito è in inglese), i docenti avranno un punto di riferimento per approfondire la conoscenza del funzionamento del cervello, come esso apprende e come le scoperte delle neuroscienze possono aiutare a migliorare i metodi pedagogici. Ne sono venuta a conoscenza stamane sulla rivista telematica sophia.it cui sono iscritta. L'incipit dell'articolo in questione era:

" L'attuale modello di apprendimento in classe è adatto al nostro cervello? Perché alcune persone non riescono a sviluppare sufficienti capacità matematiche o linguistiche? Perché uno studente su sei è ribelle e non riesce a integrarsi a scuola? Quanto le emozioni influenzano l'apprendimento? E come aiutare gli alunni dislessici?..."

Spero possa essere di vostro interesse. Lucia Fraboni

Internet

start   2 Esplo...   3 Micro...   WebHom...   IT   22.58

Figure 9: Explicit invitation to collaboration

Figure 10: Personal homepage design in a personal style

Figure 11: Standard personal homepage

Figure 12: Homepage customization following example of Figure 10

Figure 13: Hints for discussion on site homepage

Figure 14: In the same page you can switch between two languages, just click on a flag