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OIKODOMOS

a virtual campus to promote the study of dwelling in contemporary Europe

WORKPACKAGE **QPLN**

Evaluation of Results and Projects Impact in Long Life Learning

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This report summaries assorted data which has been collated during the project reviews the effectiveness of the outputs against key questions and sets the results in a broader pedagogic context. The questions are designed to answer the question “how close did OIKODOMOS come to achieving its goals?”

1) Introduction

OIKODOMOS has been an ambitious project which set out to enhance the quality of learners experiences through the development and application of virtual learning spaces.

The virtual learning space developed and implemented during HOUSING@21.EU was aimed at integrating web-based platforms in architectural education (on) a European scale" (Madrazo and Massey, 2005). It used an online repository to facilitate the collection, study and discussion of housing case studies in partner institutions and a separate web-based environment to support the creation and presentation of innovative housing design proposals during an annual face to face workshop. A retrospective evaluation of HOUSING@21.EU at the beginning of the OIKODOMOS was used to guide the redesign of the platform and enhance the pedagogic process (see reports PR EP1 & PR EP2). OIKODOMOS was established with the aim of developing a structured virtual campus to support innovative pedagogic approaches that integrate on-line activities with the curricula at each partner institution. Alongside developing the platform the project has explored the development of a blended learning model which supports learning and teaching interactions in both face-to-face and distance modes of teaching.

2) Scope of the Evaluation

The initial plan for evaluation of OIKODOMOS was based around achievement of the intended outcomes of the project, summarised in Madrazo et al (2007). At the projects inception it became clear that it would be necessary to achieve a common understanding between partners of their understanding and application of educational language and concepts in order to achieve the project objectives. In parallel, rather then base the evaluation on a snapshot of results achieved at the project end it was decided to use a mixed formal and informal evaluation process to feedback and help guide the projects development. This process would include feedback to support translation of the educational objectives into a viable application of the technology and sequential feedback on the face-to-face Joint Workshops. Alongside the other objectives of QPLN this translates into the list of outcomes to be evaluated given in Table 1 below:

Table 1. Questions to evaluate OIKODOMOS Outputs

1) Do the students experience the intended pedagogy?
   a) Was the approach student centred?
   b) Are the L&T processes well defined (including the involvement of professionals)?
   c) Do all partners should have a common understanding of the pedagogic / Learning and Teaching (L&T) processes?
   d) Is the learning platform able to support the L&T processes required?
   e) Do the technologies introduce any barriers to the learning processes?

2) How blended have the Learning and Teaching (L&T) process been?
   a) the mix of face-to-face and online or elearning
   b) the blend of local and Joint Workshops activities
   c) the blending of partners activities towards a common goal

3) Do the Workspace and Housing Repository fulfil their intended roles?

4) Are students disadvantaged by the use of this blended learning model?

5) How do the learning and teaching models used in other environments compare with those of OIKODOMOS?

6) What has been the wider impact of OIKODOMOS?

The evolution of the project reached its climax through the final face-to-face workshop and associated pre and post workshop activities. The evaluation findings which were used to guide the development of the Joint Workshops are briefly outlined, but the majority of the evaluation focuses on the questions above in relation to the final Joint Workshop and development of the platform.

3) Methodology

The discussion of questionnaire results below is informed by being a participant observer in partner discussions, observations of the Learning Activities (LAs) and Task development process, and participation in the Joint Workshops.

Following the first Joint Workshop (Ghent) focus groups of students were used to evaluate their experience, the results being fed back into a post workshop meeting. The use of focus groups as post workshop evaluation tools proved to be problematic due to the difficulty in making space in students programs towards the end of the week, ideally after their final presentations. For subsequent Joint Workshops (Grenoble and Bratislava) evaluation questionnaires were used to capture similar information to the focus groups. The questionnaires used Likert scales with open response boxes. As the number of responses from each cohort was small analysis has been based on mapping and interpretation of the descriptive statistics, informed by the students comments.

A staff focused questionnaire (see Appendix 1) was based on an approach developed and used by one of the evaluators in a previous Anglo-American e-learning project (Rees *et al*, forthcoming). The questionnaire was distributed by email to co-ordinating partners for distribution to their staff who participated in the project. There were two responses. Principle staff in each of the teaching institutions were taken through a semi-structured interview, the questions being given in Appendix 2. The responses from staff are used to inform the discussion and conclusions below.

4) Post Joint Workshop student evaluations

More detail is available in the summary Joint Workshop evaluation reports for each location. The focus groups and questionnaires were used to evaluate student's preparation for the workshops, their experience and to collect information on their ideas for improvement. The results informed the ongoing design of the workshops, clarified and reinforced impressions of the Oikodoms team, and helped to guide the following developments of the Joint Workshop processes.

- Tighter selection of students to ensure adequate (English) language ability
- Clarification of learning goals and credit allocation attributed to workshop
- Clarification on role of the international dimension
- Better linking of pre and post workshop tasks to workshop activities
- Pre workshop briefings which involved all participant institutions
- Collaborative working of students across sites in advance of the workshop
- Provision of adequate computing facilities at host site
- Social time early on to allow students to get to know each other better
- Better linking of external speakers talks with main workshop topic
- Greater explanation of coherence of talks with workshop tasks.
- More time for final presentations and feedback
- Increased free time for students to interact with each other and their local environment

5) Post Bratislava (final Joint Workshop) evaluation

This evaluation employed a student focussed questionnaire based on the MECA-ODL approach to evaluating quality in open and distance learning adapted to assess elearning (Riddy and Fill, 2004; Fill, 2005), but with additional questions to capture other information. An iterative process allowed current participants in OIKODOMOS to suggest amendments and additions to the questions and scoring methods. Once all contributors were agreed, the questionnaire was mounted online, all students were alerted by email and asked to complete it. The questionnaire was mounted online at: http://www.surveymonkey.com/s/3VLXMGV and distributed to 54 students. A total of 49 students responded. The full set of questions is given in Appendix 3.

Alongside information on their perception of the environments, the spread of questions was designed to look at students learning and teaching experiences pre and post workshop, their experience of the final workshop, how the students had used the environments, their response to the overall experience and the difference between virtual and face-to-face working. A summary of the questionnaire scores is given below in Table 2 below along with the sections in which they were organised.

Table 2

Post Bratislava Joint Workshop Questionnaire results, 49 responses
Individual profile questions removed
Data scaled :

1-4, Strongly agree, Agree, Disagree, Strongly disagree, + Don't know & Not Applicable as N/A.

Q.NO	Question	Mode	Median
	Pre Joint Workshop		
12	The purpose of international co-operation in-our school learning activities was clear from their beginning	1	1
13	The Learning Activities / Tasks created by teachers in the OIKODOMOS Workspace were relevant, appropriate and clear.	1	1
14	From the start of these activities I was given full descriptions of the learning activity, including learning objectives/outcomes	1	1
15	Before the Bratislava workshop took place I used the OIKODOMOS Workspaces in conjunction with learning activities taking place at my university.	1	1
16	Were you a participant in the Bratislava workshop?	N/A	N/A
	During the Joint Workshop		
17	If YES, Was this the first OIKODOMOS workshop in which you had participated?	N/A	N/A
18	Before joining the workshop in Bratislava I was clear about the purpose of the international co-operation taking place there.	1	1
19	The learning activities we did in my school were a good preparation for the the work in Bratislava.	2	2
20	I used ICT tools before the workshop to gain the information about the site.	2	2
21	Using these tools I was able to access enough information to prepare for the work in Bratislava	1	1
22	Electronic/computer communication helped me to get to know the participants from the other schools well enough to help collaboration before going to Bratislava	1	1
23	The academic support at my university was sufficient for preparation of the learning activities to be carried out in Bratislava	1	1
24	I discussed information on the Bratislava site with students and teachers from other schools in advance of the workshop.	1	1
25	I found students contributions to the discussions helpful	1	1

26	I found teachers contributions to the discussions helpful.	1	1
27	The videoconference presentation before going to Bratislava was helpful to gain information about the site.	1	1
	After the Joint Workshop		
28	The Learning Activities created by teachers in the OIKODOMOS Workspaces were relevant, and their descriptions and objectives appropriate and clear. (This question is a repeat from earlier because some Learning Activities continued from the workshop and some were new.)	1	1
29	In-school activities have been integrated and/or continue the activities begun during the Bratislava workshop	1	1
30	I use the OIKODOMOS Workspace regularly to complete learning activities continuing after the Bratislava workshop.	1	1
31	The learning process, including use of the OIKODOMOS Workspace, has encouraged analysis of the connections between social, economical, technological aspects and the urban-architectural concepts.	2	2
32	Working online collaboratively with foreign partners has been a good experience.	1	1
33	After the workshop I used ICT tools to gain the information about the site and/or to work on the tasks.	1	1
34	Please estimate your overall use of the tools below (This is a repeat of an earlier question so we can look at any change in use of the tools)	N/A	N/A
	About use of the Workspaces		
35	The workspaces and tools were easy to use.	1	1
36	All necessary tools were included in the workspaces e.g. to search tasks, learning activities, resources files & groups; to add/view deliverables.	1	1
37	All the materials in the workspaces were easy to locate and access.	1	1
38	The workspaces was a useful support for achieving the goals of the design project	1	1
39	The methods to obtain support for using the workspaces worked well eg how to update your profile, how to do specific actions such as add task outputs	2	2
40	The response times to questions from learners by staff were adequate.	1	1
41	Using the workspaces suits my way of working	2	3
42	The workspaces provides a good environment in which to work collaboratively	1	1
43	What do you like, what is done well in the workspaces?	N/A	N/A
44	What didn't you like, could be done differently?	N/A	N/A
45	Please include any other suggestions for improving the OIKODOMOS Workspaces.	N/A	N/A
46	We would like to organise some short, follow up meetings / discussions with individuals. If you are willing to participate please give your name and email address below.	N/A	N/A

All the responses fall into the agree side of the scale, which suggests the students have found their experiences generally positive. The scores for question 41 are discussed under 3 below and other aspects of the results are discussed under the specific evaluation outputs as appropriate.

The more detailed scope of questions in Table 2 have been mapped against the main output valuation questions given in Table 1, summarised in Table 3 below.

Table 3

Q.No	Evaluation Question	Questions numbers in Questionnaire	%[1] 1&2
1	**Do the students experience the intended pedagogy**		
1a	Was the approach student centred?	12,13,14,18,19,23,26,28,29,31	69
1b	Do all partners should have a common understanding of the pedagogic / Learning and Teaching (L&T) processes?	13,14,19,27,28,29,31	70
1c	Are the L&T processes well defined (including the involvement of professionals)?	12-15,19,28,29,31	73
1d	Is the learning platform able to support the L&T processes required?	20,21,28,30,33,35,36-39,41,42	65
1e	Do the technologies introduce any barriers to the learning processes?	20-22,29,30,33, 35-39,41,42	59
2	**How blended have the Learning and Teaching (L&T) process been?**		
2a	the mix of face-to-face and online or elearning	19,21,22,28,30,32,33	62
2b	the blend of local and Joint Workshops activities	12,15,18,24,27,31,32	61
2c	the blending of partners activities towards a common goal	12,13,15,18,19, 24-29,32	61
3	**Do the Workspace and Case Repository fulfil their intended roles?**	21,30,32,33,35,38,41,42	64
4	**Are students disadvantaged by the use of this blended learning model?**	Summary of above + comments	N/A
5	**How do the learning and teaching models used in other environments compare with those of OIKODOMOS?**	Other sources	N/A
6	**What has been the wider impact of OIKODOMOS?**	Other sources	N/A

[1] % figures refer to the percentage of questions scored in the Strongly agree & Agree, from that group.

The overlapping grouping of the questions demonstrates the complexity of evaluating how successful this type of project has been, that the success of any teaching or teaching innovation can not be measured by a few simple parameters. The mapping given in Table 3 has been used to facilitate the discussion of the evaluation outputs below.

1) Do the students experience the intended pedagogy?

1a) Was the approach student centred?

The aligned process of learning design employed, is inherently student centred ie putting students at the centre of the learning process. The educational processes used within the schools vary, but in general students have been being advised of the competencies / LOs they are intended to achieve through their OIKODOMOS work. In all schools, significant blocks of work are based around Design Workshops which, at it's core, is a project based approach to learning in which students are given formative feedback as their work develops. This affords students some flexibility in their approach to evolving solutions to their projects, thereby following constructive processes of building on their existing knowledge and integrating knew knowledge, within personal frameworks of understanding.
The Workspaces environment has been designed to support students working individually or in groups and facilitates systematic delivery of a series of Learning Activities (LAs), broken down into Tasks. LAs and Tasks can be described and appropriate support resources made available through the Workspace. Students upload their work, can give feedback to each other and can receive grades and feedback from the staff.
Partners have designed the LAs running up to the Joint Workshops to prepare the students to work effectively on the collaborative tasks on arrival. The pre-workshop tasks required some collaborative work between group

members from different institutions and also assisted with getting to know other team members through online interaction.

This combination of elements indicates that the partners approach to learning and teaching within OIKODOMOS has been student centred, a conclusion which is supported by the percentage of positive results given in Table 3 (above). This is considered in more detail in the discussion below.

1b) Do all partners have a common understanding of the pedagogic / Learning and Teaching (L&T) processes?

Discussions on the development and integration of the learning and teaching process (L&T) began early in the project, initially to guide the development of the platforms and subsequently to arrive at a mutual understanding of the learning and teaching process. Early discussions showed that partner school have a different curriculum and pedagogic process, although schools overlapped with the function and process used within Design Workshops. The three project Joint (Design) workshops were therefore chosen as points of convergence to better explore the alignment of L&T processes between schools.
Discussion of LAs within and across partner schools eventually led to convergence on a set of LOs appropriate to the final Joint workshop being collaboratively developed and implemented within the Workspaces. This significant achievement was an indicator of the progress which had been made in reaching a mutual understanding of educational descriptors, language and processes.

With the exception of question 19 (discussed under 1c) there was no differences in mode values between partner schools.

1c) Are the L&T processes well defined (including the involvement of professionals)?

The description in 1a) & 1b) support the L&T process being well defined.
The Joint Workshops utilised staff from local authorities to present information on the chosen site in their areas and to engage with students in discussion of their proposed solutions during the final presentations.

Questions 13 & 28 are equivalent, about clarity etc of tasks, but referring to pre and post workshop respectively. Of the three comments to 13, one didn't reflect on the question, the others are given below:

> **13. The Learning Activities / Tasks created by teachers in the OIKODOMOS Workspace were relevant, appropriate and clear.**
> Some lectures in Bratislava were a little bit bored and some times repetitive. But the activity in general during the workshop and the classes were interesting for me.
> The Bratislava workshop was about to solve Big Camp in a urban scalem because the time was so limited, and actually we were not able to reflect about the topic of the workshop: Effective housing.

The second response may indicate the student's lack of clarity of task objectives or in the workshop process. The single comment for question 28 raised clarity of tasks as an issue.

1d) Is the learning platform able to support the L&T processes required?

The Workspaces environment has evolved during the project to the point where it receives strong approval from the students. Positive comments included liking the opportunities for interaction it provided. Negative comments were largely individual and related to specific technical issues with the exception of aspects of organisation/location of uploaded information which was mentioned in 38% of comments.

The Case Repository was redesigned following recommendations which arose from evaluations during and post Housing@21.eu. The design of the Workspaces and Case Repository are discussed WP PR EP4 Enhancement of Web-Based Learning Environment. Evaluation of the repository doesn't fall under the remit of this work package and a usability study is being conducted as a separate activity. Feedback from staff and students

indicates that they find it easy to use, that it has a comprehensive range of tools and can be used effectively for exploring relationships between various kinds of data.

1e) Do the technologies used introduce any barriers to the learning processes?

The Workspaces and Case Repository were designed for ease of use, the designs being informed by the results of usability studies and questionnaires from Housing@21.eu. Responses to student feedback questionnaires indicate they found the Workspaces easy to use and supported their learning, but the overlap of questions with 1d) again raises the question of improving the organisation/location of materials.
Anecdotal responses suggest users find the Case Repository is easy to use and meets the specified functionality; usability testing is underway. (also see 3 below)

2) How blended has the Learning and Teaching (L&T) process been?

See also discussion under 1a and 1b.
Blended learning usually refers to a) the mix of face-to-face and online or elearning that has been used. In OIKODOMOS there is also b) the blend of local and Joint Workshops activities, and c) the blending of partners activities towards a common goal.

2a) the mix of face-to-face and online or elearning

OIKODOMOS was designed around creating virtual learning spaces which would allow students to achieve significant work objectives working within an online realm. The Workspaces were used to set LAs and Tasks, to provide associated resources, to collect students solutions and for students and staff to provide feedback on their work. They Workspaces allowed all of these online activities to happen and student's responses scores they are satisfied with the overall operation of the Workspaces environment. Despite all the scores being Strongly agree, there were 5 comments associated with question 32, 1 positive and the other 4 negative, given below:

32. Working online collaboratively with foreign partners has been a good experience.
Not present in the Bratislava Joint Workshop
Working with foreign studends was very interesting experience, I could find out what is their opinion.
we worked online with someone? how? ... by knowing that there are some students far far away doing the same thing? i dont think so...
I don't think the exchange objective was reached, except, maybe, during the workshop itself.
there were not so many collaborative works with other universities, the problem should be my absence in bratislava, too
Participated in the Bratislava Joint Workshop
There was very few online collaborative work. The meeting in Bratislava was a very interesting expirience.

Students also used email and Skype for distant communication and a wide variety of software in producing solutions to their tasks. For the most part English was used as the common language. Anecdotal evidence suggests that the there were some communication difficulties because of language, but the students were prepared to work around them as illustrated by one response in a conversation:

"**How do you manage to communicate when it's difficult to understand each other?**"
" we just draw more"

Conversation with the students indicated considerably variation in students ability with spoken English. However, individuals assessment of their English levels in the questionnaire indicated the majority were intermediate or

fluent in English speaking (77%), writing (91%) and reading (83%). This indication of confidence is supported by the lack of comments on language being an issue in the questions about communication (22, 24-26).

2b) the blend of local and Joint Workshops activities

Partners have evolved the Joint Workshop planning process so that they are able to adjust internal work programmes to facilitate collaborative work based around LAs which contribute to Joint Workshops activities. The diagram below illustrates the relationship between school and Joint Workshop activities.

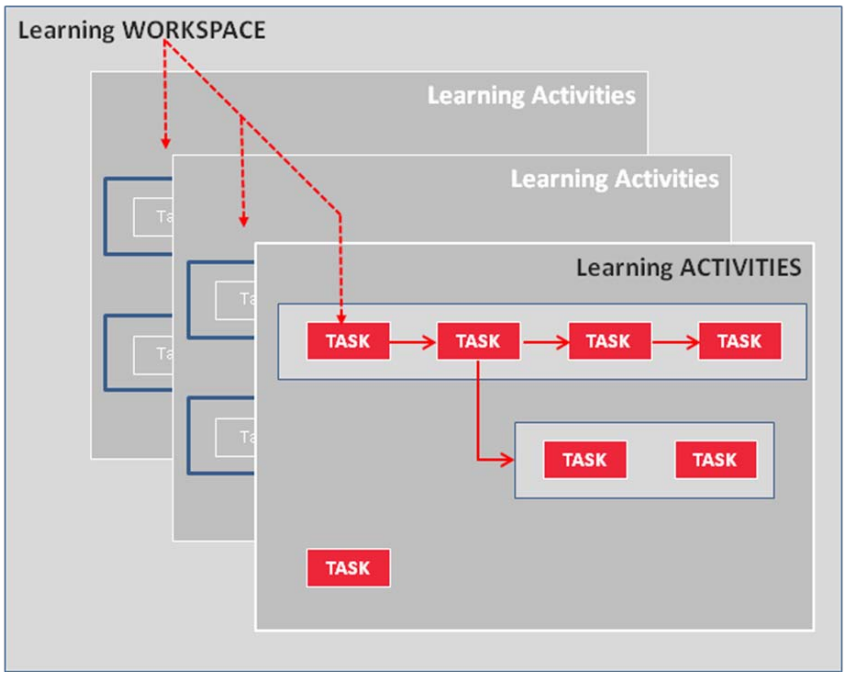


Fig. 1. Structure of the learning activities

Students questionnaire responses indicate that in most institutions they were satisfied with level of integration of pre-workshop activities but that integration of post-workshop activities needed more attention. 4 comments to Q.15 (use of workspace integrated with LAs) suggest some students didn't feel the activities were integrated, 3 of the comments being from one institution.
Two responses to question 29, from the same institution, again raise questions on the level of integration, as does one response to question 32 (see 2c).

> **29. In-school activities have been integrated and/or continue the activities begun during the Bratislava workshop**
> There was no real academic integration. But we did the tasks.
> We had more assignments on the topic, but they were isolated from the rest of the program.

2c) the blending of partners activities towards a common goal

The partners have evolved a process for collaborative design and delivery of Joint Workshops which is supported by local and collaborative LAs used before and after the workshop.

The comments to question 32 (above) indicate mixed feelings about the degree of blending and a difference in experience between f-to-f participants and others. The 1 comment to Question 31 relates to the overall blending of the learning process:

31.**The learning process, including use of the OIKODOMOS Workspace, has encouraged analysis of the connections between social, economical, technological aspects and the urban-architectural concepts.**
Not present in the Bratislava Joint Workshop
Not at all, I find that the workspace has very little information on the social and economical aspects. Most of its is dedicated for the physical look of architecture and design. Very nice graphic presentation, but almost nothing about the context, the people, market research, etc.

2d) Summary

Aside from the pedagogic design issues and viability of the platform, a common theme running through the OIKODOMOS LA's is the blending of cultures and disciplines. Students who participated in the Joint Workshops were generally very positive about the experience of working with students from other countries, other disciplines and other cultures. Example responses to question 32, given above, indicate mixed feelings, but of 21 response to question 43 (*What do you like, what is done well in the workspaces?)*, 62% included positive references to either working with others as indiviuals or through their teams outputs.

One of the most difficult aspects of blending to achieve is formal integration of courses to the extent that collaborative marking and award of credit is allowed. In the time available the partners have been unable to resolve questions associated with collaborative marking and allocation of credits for Joint Workshops or other student assignments. However, in the final Joint Workshop they agreed and trialed an approach to contributing formative assessment across the partner schools.

3) Do the Workspace and Case Repository fulfil their intended roles?

The discussion above demonstrates that the **Workspaces** environment supports L&T at a distance, the role for which they were intended. Questions 35-45 were specifically concerned with the usability of the workspaces and the majority of responses were *Strongly ag*ree. The mode value of 2, median 3, for Question 41 suggest there is variability in individual's experience of using the workspace. This could be the result of specific design issue but may reflect difference due to personal preferences. The single comment indicates a server or connectivity issue: "took a lot of time to upload in special form with icons and so on...it is usually quicker by mail."
22% of comments from this group of questions (35-45) indicated the clarity of the web interface could be improved, 10% of those were concerned with the ability to find information.

Question 39 is asking about support issues and also has a lower Mode value. There are no comments to throw light on this response.

For comments on the **Case Repository** please see 1e and the Usability report below

3a) Usability Report on the OIKODOMOS Case Repository

(see also Usability Study References)

3a.1) Introduction

This report presents the method and results of the usability test conducted for the Case Repository module developed in the scope of the OIKODOMOS project.
The main goal of usability evaluation is to detect the most part of the problems, obstacles and breakdowns for the user when interacting with a web application, being the usability "the effectiveness, efficiency and satisfaction with which specified users can achieve specified goals in particular environments" (ISO 9241-11). For e-learning environments and applications, usability is a necessary (although not sufficient) condition for effective online learning. Easily locating and accessing the needed content, orienting oneself in the maze of

different paths and nested pages of a structured website, avoiding being overloaded by the information clustered in a page, and being able to use effectively the navigation architecture are just some examples of important conditions for a learner to accomplish their learning tasks.
In other words, usability is the property of a mediated learning environment supporting the users as transparently as possible in the accomplishment of their learning goals.
It has been acknowledged that hypermedia contents are more and more a great sum of information but they are frequently poorly structured (Acosta et al. 2003). If we assume that the organization and the usability of the information is partly responsible for a better learning (Najjar, 1996), then a usable e-learning website is not just a resource with a nice "look & feel", but a web application which communicates contents and structures the interaction in such a way that facilitates the learning experience. However, it is clear that usability evaluation is just one specific aspect of the quality assessment of an e-learning environment. A highly usable online course does not guarantee at all high quality in the learning outcome. Nevertheless, shaping usability represents an important condition for the success of e-learning projects.

3a.2) Method

The usability study was developed following the MiLE methodology (Triacca et al., 2004), in its e-learning adapted version (Inversini, Botturi & Triacca, 2006). This method has already been used extensively and successfully for a variety of web application domains (e.g. educational institutions, cultural-heritage, public education, and e-government) (Matera et al., 2002; Bolchini et. al., 2003; Triacca et.al., 2003), and further tailored for use with e-learning web applications. The goal of the study is to provide course developers and instructional designers with a structured "kit" of guidelines and practical suggestions for a cost-effective usability evaluation of their online application.
The NewMinE Lab in Lugano, namely Luca Botturi and Marco Faré, developed the usability framework, consisting of user profiles, usability variables and scenarios with tasks. The usability framework, developed in December 2007, is presented in report PR EP1.
The NewMinE lab also prepared a form for collecting usability results, which was distributed to partners, along with an example of a completed form.

3a.3) Results

Evaluation data was collected as follows:

- Lugano: 4 students
- Bratislava: 4 students
- Barcelona: 6 students
- TOTAL 14 students

In Lugano, researchers had students working on their own, following a "think aloud" protocol, and were taking notes, asking questions and annotating assessments. In Bratislava and Barcelona, students were first trained and then asked to fill in the form by themselves.
Unfortunately, no teachers took part in the evaluation. However, this is of relative importance, as the difference in terms of scenarios and tasks was minimal (1 scenario with 4 tasks).
It is important to notice that users were not trained to use the system, so the study measures the "first impact" of an interface which should be designed for "self learning".

The full results of the usability study are presented in the following table.
Please notice that time is expressed in seconds, success is a percentage of completed tasks, while all parameters are assessed on a scale of 0-4. Cells marked in color contain critical values.

	TIME (seconds)	COMPLETES TASK?	SATISFACTION	CONTENT	ORIENTATION	NAVIGATION	PREDICTABILITY	LAYOUT	GRAPHICS
SCENARIO STUDENT 01 – You have been assigned a design task. Search a Case Study from Germany for inspiration									
Task 01: Log in	31.0	100%	4.0	3.7	3.3	3.9	3.9	3.4	3.7
Task 02: Find an interesting case study for houses that use wood	47.5	100%	3.6	3.4	3.3	3.3	2.5	3.4	3.3
Task 03: Find a case study from Germany	51.9	100%	3.4	3.5	3.9	3.4	3.4	3.8	3.8
Task 04: Find a case study by Mies van Der Rohe	40.0	100%	3.3	3.0	3.4	2.9	3.3	3.4	3.5
Operation with a case study									
Task 05: View pictures and plans and identify good ones	38.8	100%	4.1	4.1	3.9	3.6	3.8	4.1	4.1
Task 06: Read textual contents	115.0	100%	4.0	3.4	3.4	3.5	3.4	4.0	3.8
Task 07: Add a new picture (In IMG folder)	61.9	100%	3.9	4.0	3.5	3.9	3.9	3.6	3.9
Task 08: Add a new bibliographic reference (Title: your name, Author: your name)	54.4	100%	4.4	3.9	3.9	4.1	4.1	3.9	4.0
Task 09: Add a new keyword to the case study	50.6	100%	3.8	3.5	3.3	3.4	3.4	3.5	3.8
Task 10: Add a new tag to the case study (Name: your name)	59.4	100%	4.0	3.8	3.5	3.6	3.8	3.5	3.9
Task 11: Add a comment about that Case Study for the author	66.3	100%	4.1	4.0	3.6	3.9	3.9	3.8	4.0
Connections									
Task 12: Identify if the case study belongs to a Public Collection	64.4	87%	3.1	3.6	3.0	3.5	3.1	3.6	3.9
Task 13: Identify the student who created that case study and find other case studies by the same student	57.9	87%	3.1	3.6	3.3	4.0	3.3	3.1	3.7
Task 14: Identify another case study built in the same year	81.3	100%	2.8	3.3	2.1	2.6	2.6	3.8	3.8
SCENARIO STUDENT 02 - You worked in the atelier and want to add a new case study to the repository									
Task 01: Create a new Case Study (In Case folder)	98.8	100%	3.8	3.6	4.0	3.8	3.4	3.9	3.5
Task 02: Add a URL reference (http://www.salle.url.edu)	60.6	100%	3.8	3.6	3.8	3.6	3.5	3.9	3.5
Task 03. Add 2 plans (In IMG folder)	68.1	100%	4.0	4.0	4.0	4.0	3.8	4.0	4.0
SCENARIO STUDENT 03 – Create private/public collections of cases and summary page									
Task 01: Select cases of study related to "flexibility"	82.5	100%	3.4	3.5	3.0	3.5	3.4	3.8	3.4
Task 02: Create a private collection with the previous selection (Name: your name, Description: description)	104.4	87%	3.1	3.8	3.0	3.4	3.1	3.8	3.8
Task 03: Create a public collection with the elements of the previous private collection	72.5	87%	3.1	3.8	3.1	3.5	3.1	3.8	3.8
Task 04: Create a summary page on the topic "flexibility", taking content from the selected cases	270.6	100%	3.6	3.4	3.3	3.6	3.1	3.6	3.4
SCENARIO STUDENT 04 – Searching for collections									
Task 01: Search for collections which have to do with "steel construction", if any	250.0	50%	2.7	2.6	1.6	2.4	2.3	3.1	3.1
Task 02: Add 3 relevant case studies to the group "steel construction"	246.3	50%	2.8	2.7	2.8	2.8	2.5	2.7	2.5
Task 03: Add a comment to the new group	55.0	75%	3.3	3.4	3.1	3.4	3.0	3.0	3.1
SCENARIO STUDENT 05 - To complete your assignment, you need some references. Search all references about "steel"									
Task 01: Locate bibliographic references about "Steel"	181.7	62%	3.0	3.0	2.7	3.2	2.5	3.3	3.2
	AVG	91%	3.5	3.5	3.3	3.5	3.3	3.6	3.6
Completion threshold	60%								
Dimensions threshold	2.6								

3a.4) Annotations

Users were also allowed to express open feedback with respect to tasks. This happened only for students in Lugano, and the comments are reported in the following table.
It is important to keep in mind that participants in the usability studies tend to annotate problems and negative features more than positive features.

SCENARIO STUDENT 01 – You have been assigned a design task. Search a Case Study from Germany for inspiration		
TASK	POSITIVE FEATURES	NEGATIVE FEATURES
Task 01: Log in	- log in is easy and straightforward	
Task 02: Find an interesting case study for houses that use wood		- you can see what projects are made out of wood, but not everyone gives the description of how these houses are using the wood or what for.
Task 03: Find a case study from Germany	- found studies without any difficulty - the organization of the pictures is good, quite clear	- Doesn't work so well. You must wait to see your input on the search tab - there is a project in Germany,Spain!! How can it be possible?? (data in database is not cleaned up)
Task 04: Find a case study by Mies van Der Rohe		- Doesn't work so well. You must wait to see your input on the search tab - I can't see the pictures - I had problems with this, especifically a case made in collaboration with OMA (of Koolhaas) and because the student didn't realice it, he just mentioned it and thats all but if you tried to look for it is difficult to get if you write down Koohlaas or OMA.
Task 05: View pictures and plans and identify good ones	- you can see all the previous information at the same time - it's good that I can see the all pictures at once.	- Is difficult to identify good ones because some time there weren't uploaded with a good resolution. - It's a problem if you reduce the size of the images because sometimes they lose the faculty for us to see the small letters
Task 06: Read textual conten		- some CSS styles don't seem to be recognized
Task 07: Add a new picture (into IMG folder)		
Task 08: Add a reference		
Task 09: Add a new keyword to the case study		
Task 10: Add a new tag to the case study		
Task 11: Add a new comment about the case study for the author		
Task 12: Identify if the case study belongs to a public collection		- i dont know how to recognize if it belongs to a public collection
Task 13: Identify the student who created this case study and find other cases by the same student		
Task 14: Identify another case study built in the same year		- I think there is a problem here because there can be a confusion between the publictation year of the project and the year of the magazine or book. For example I don't think Archigram had work during 2006 "LIVING POD, Archigram G. [2006-05-08] "

SCENARIO STUDENT 02 - You worked in the atelier and want to add a new case study to the repository		
Task 01: Create a new Case Study		
Task 02: Add a URL reference		
Task 03. Add 2 plans (in IMG folder)	**-** it is good but it would be better if we could add .dwg files	- one of the images was not visible
SCENARIO STUDENT 03 – Create private/public collections of cases and summary page		
Task 01: Select cases of study related to “flexibility”		- page froze once when I was writing keywords
Task 02: Create a private collection with the previous selection		
Task 03: Create a public collection with the elements of the previous private collection		
Task 04: Create a summary page on the topic “flexibility”, taking content from the selected cases		
SCENARIO STUDENT 04 – Searching for collections		
Task 01: Search for collections which have to do with “steel” construction, if any		
Task 02: Add 3 relevant cases to the group “steel construction”		- did not find that group - I don’t know where the steel collection is
Task 03: Add a comment to the new group		- did not find that group - for me it didn’t work
SCENARIO STUDENT 05 - To complete your assignment, you need some references. Search all references about "steel"		
Task 01: Locate bibliographic references about "steel"		- none found - didn't find it, either because there is no bibliography with this title or just because I don't know how to do it

3a.5) Identified issues

Nowadays there is an abundance of sophisticated elements that can be integrated into a web application. This application was designed with the idea of interconnecting services that are very different in type. This approach is called “mashing up”. Although the resulting “mash-ups” are likely to be error-prone, the final version of the OIKODOMOS case repository is very stable, and was considered quite positive in terms of usability, as the results of the tests show.
The case repository module appears to be working well for most students, as the average results were 3.3 or higher for all dimensions. Some usability problems could be identified mostly for tasks 14 in scenario 1, and tasks 1 and 2 in scenario 4. The usability dimension most affected by problems is *Predictability*.
Starting from a usability evaluation of the preceding project (Housing@21.net), the goals for the development for the OIKODOMOS case repository were the following:

- Fixing major usability problems
- Implementing new functions
- Adapting it to the new “language” of web applications
- Using up-to-date technologies

3a.6)Summary

The goals above have been achieved. The module uses a refined combination of up-to-date technologies, which are working together in a mostly comprehensive and stable way. Minor flaws, such as the difficulties the students had in identifying a case study built in the same year as a given one, or the problems with scenario 4 – searching for case collections – can be patched without too much effort by providing more visible clickable links or buttons to provide a faster and more intuitive access to the solution of the given tasks.

3b) Summary

Both the Workspaces and Case Study environments have been found fit for purpose.

Areas for further development of the **Workspaces** which have been discussed by the partners include a map tool for viewing status of LAs and Tasks, and to consider ways in which to facilitate student interaction, eg clearer indication of presence and tasks being worked on, possibly with an embedded or linked tool which facilitates real-time communication when the close presence of another is discovered.
Access speeds have been an issue, especially for one partner, and this needs further investigation.

In addition to the specific recommendations for the **Case Repository** above there has been some discussion about there use in combination which would be facilitated by a more efficient process to move information between them. This requires a linking/embedding tool to allow use of cases as resources for the Workspaces, and a review/transfer process to allow movement in the other direction.

4) Are students disadvantaged by the use of this blended learning model?

This question reflects on the success of the students overall learning experience. The results discussed above indicate that the majority of students have found involvement in the OIKODOMOS L&T activities interesting and supported their learning. Questionnaire responses indicate they feel their learning has been enhanced by the overall process as indicated by some of the comments below:

Comment	**No of responses**
the opportunity to work with people from another culture	4
The opportunity to see another way of looking at their work, including both discipline and culture	6
having to use another language	3
input from professionals working in the areas/disciplines	6

The allocation of credits and assessment process was designed to ensure that participants would not be disadvantaged by participation in the OIKODOMOS Joint workshops.

Summary of Questions 1-4

The mode values for all questions fall within the strongly agree/agree range for both students who participated in the Joint Workshop and those who didn't. For the questions as a whole only 4% of the scored responses were for agree(mode=2). Some of the comments to questions bring out the detail of where things can be improved, but less than 1% of the scores are associated with comments that scored less than agree (mode =3 & 4). The overwhelming conclusion based on the students scores and comments is that the students experience of participation in OIKODOMOS has been positive.

At this stage it is not possible to utilise detailed information on the results of student's assignments. Feedback from staff indicates that students have been at least as successful in their assignments as cohorts from previous years.

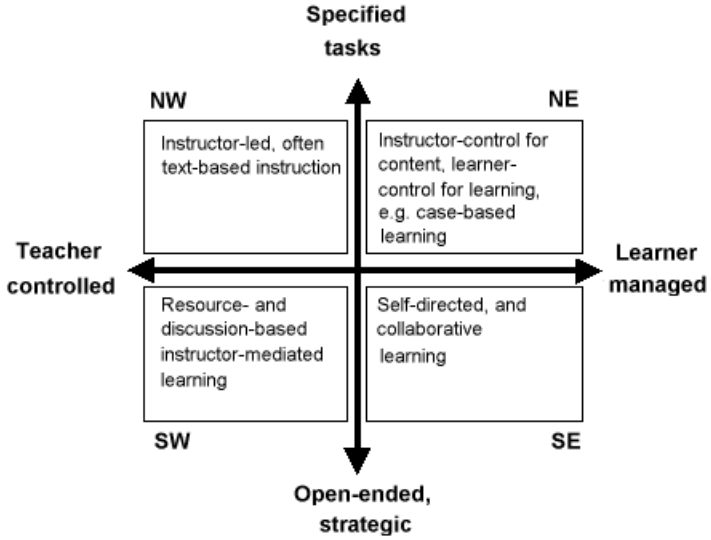
The success of the overall L&T process is perhaps illustrated by a comment to question 43:
"The communication between people from different places is a good approach. I like the way we discuss about the housing effectiveness problems, the concepts of dwelling."

5) How do the learning and teaching models used in other environments compare with those of OIKODOMOS?

The initial approach was to design a check list of key elements for a virtual campus which was supplemented by further elements after a number of environments had been reviewed. This revealed there are a number of different environments which share common ground with the OIKODOMOS platform and that the check list seemed too limited a tool to provide useful information. At this stage it became clear that obtaining the information to conduct a full specification comparison of the environments was itself a project which we didn't have the capacity to complete within the framework of OIKODOMOS. Existing models for virtual campus specification and a descriptive comparison of key functionality is given below.

Earlier initiatives such as the BENVIC (BENVIC) project brought another perspective to the comparison of the OIKODOMOS platform with other environments. A key aim of this project was to established "evaluation criteria in order to achieve .the Quality Standards for Virtual Campuses." The BENVIC definition of a virtual campus is:
"The concept of a Virtual Campus refers to a specific format of distance education and on-line learning in which students, teaching staff and even university administrative and technical staff mainly 'meet' or communicate trough technical links." (BENVIC).

This broad definition does little to assist in the definition or description of the learning and teaching, or research characteristics, of such an environment, and many of the established Virtual or Managed learning Environments (MLE and VLE respectively) would fit within this definition. The project utilised polar type diagrams as a means to characterise virtual campuses.



Again, this very general tool does little to aid the discussion, as illustrated by OIKODOMOS which would probably be best represented as a circle. Most of this work was conducted in 2000 and the ease of development and scope of the technology has moved on considerably since that time.

The work in OIKODOMOS was to establish environments which would actively support learning, teaching and research activities, and this has been achieved. Related functionality is offered by a number of environments as illustrated in the table below:

Environment	Designation / Main Function	Description
BlackBoard	Virtual or Managed Learning Environment	Highly structured environment which has extensive user and assignment management facilities. Includes discussion mediums but not tightly integrated with resources.
Moodle	Learning Management System	Similar to above, but more flexible and so can support different pedagogical models. As it is open source has allowed the user community to develop a wide range of additional functionality.
LAMS	Learning Activity Management System	Predominantly collaborative learning environment which supports rapid deployment of Learning Activities via a design screen with a palette of pre-programmed activities. Individual and group user management integrated with tutor monitoring of students progress and option to join in activities.
JORUM	Repository	Holds a wide range of file types for the UK educational community with extensive options for IMS learning design compliant metadata tagging
Expertiza (Gehringer et al, 2007)	Peer Review	Facilitates upload and anonymous review of assigned work, working within a strict timetabling environment. Best pieces of work are 'published in the environment for registered users to view.
TLabs, (Spigai et al, 2008)	Virtual Campus	'Virtual Atelier' / virtual class room system in which students can upload their work and receive feedback on their designs. They also have access to the repository of collected examples which has been well indexed. It's not clear if this also structured as a 'case 'study' database/repository.
OIKODOMOS Workspaces	Virtual Campus (with OIKODOMOS Case Repository)	The Workspace is designed to allow setting of Learning Activities and tasks with which Learning Outcomes can be easily associated. Students can work individually or be selected into groups to complete the tasks and to upload their work, in a variety of file formats. Students can peer review other individuals or groups work and staff can mark and provide comments on students work.
OIKODOMOS Case Repository	Virtual Campus (with OIKODOMOS Workspaces)	The Case Repository is designed to allow uploading and viewing of mixed media information collected together under a Case. As a case the information may be tagged and commented by registered users. Cases may also be grouped and commented. The system is populated with over 300 cases.
Cloud based systems (Web)	Mash-up of Web.2 applications	A combination of Web.2 applications could offer much of the functionality available within OIKODOMOS but would currently need much work to achieve the same level of integration.

5a Summary

The OIKODOMOS environment has overlapping functionality with some of the other environments, on paper it's closest contemporary being the TLabs environment. This offers a means to directly comment onto the visual artefacts of students, an option which could be usefully employed within the OIKODOMOS Workspace. There is overlap with the functionality of the Case Study repository but it's difficult to tell to what degree from this desk based investigation. OIKODOMOS Workspace offers a means for tighter pedagogic description of Learning Activities and Tasks and has an integrated marking / feedback rubric. Neither has an embedded communication tool, and this was not highlighted as a need through student feedback questionnaires and it was clear they were making use

of some Web.2 environments (eg Facebook) for communication as well as using email. This exercise has given some useful directions for further development of the OIKODOMOS workspace and lends support to the conclusions in this report

6) What has been the wider impact of OIKODOMOS?

At this stage it is difficult to measure the wider impact of OIKODOMOS in Life Long Learning (LLL). Time is needed for the results of the work to disseminate and for partners consider the process and implication of longer term objectives for more integrated teaching collaboration. Key elements of the projects work and it's implications for LLL are brought out in the discussion below.

6a) Alignment with EU Life Long Learning policy

The European Universities Charter on Lifelong Learning (EUA, 2008) listed "commitments" on which universities have agreed. Those which can be directly related to work of OIKODOMOS are:

8. Consolidating reforms to promote a flexible and creative learning environment for all students.
9. Developing partnerships at local, regional, national and international level to provide attractive and relevant programmes.

OIKODOMOS has developed "a flexible and creative learning environment for students" and the development of partnerships and programmes. Consolidation of these in the context of LLL would be a logical development if it resonated with the schools wider plans.

6b) Scope of dissemination

There has been wide exposure of OIKODOMOS using a variety of media and opportunities as indicated in the DISS and PROM workpackage reports and summarised here, including the publication of an article at an early stage in the project. (Madrazo et al, 2007). The latter would suggest that a starting point would be the number of citations of that article. However research shows that "the correlation between journal impact and actual citation rate of articles from individual scientists or research groups is often poor" and "the citation rates of the articles determine the journal impact factor... but not vice versa". (O Seglen, 1997).

The **Joint Workshops** all utilised outside speakers from the local councils who presented information and a local view of the development potential of the sites being considered. As part of the the last two workshops local representatives attended the students final project presentations and participated in the discussion with, and feedback to, each student group. The final presentations were also made available via video streaming to students and staff back in partner institutions.
As outputs from the workshops students produced Posters of their work which for putting on display to the public. These attracted lead partners colleagues, representatived from local authorities and other interested parties.

As part of the **PROM** workpackage there have been a number of initiatives, more detailed information is available under the workpackage report. These include demonstrations of the project to researchers in France, publications and a radio broadcast in Slovakia, a presentation at the EU Year of Creativity conference in Paris, a video about OIKODOMOS made available on the Web by the French European Education Agency; a chapter in the MACE conference book and a paper has been accepted for the INTED conference in July.

As part of the **DISS** workpackage an OIKODOMOS leaflet was widely distributed by all partners, and a book about OIKODOMOS has been printed for wider distribution.

The **Final Workshop** was widely publicised by partner institutions who used their national networks of contacts to obtain a wider reach. The workshop was organised as an opportunity to provide individuals with a hands on opportunity to use the platform, to disseminate the process and results of the project and to review and gain further insights into particular aspects of the projects work. Key note speakers from architecture and pedagogy provided insite into their work and it's relationship with the exploration

of OIKODOMOS. Discussion groups facilitated by a member of the project team were used to explore particluar facets of the projects work. Three discussion groups took place attended by a mixture of OIKODOMOS students, partners and their academic colleagues, acadmics/professionals from other institutions.

Lead Staff from all institutions have involved colleagues in Oikodoms activities. Involvement ranges from technical support through participation in project meetings to active participation in LAs and tasks. Partners have also raised OIKODOMOS at formal and informal meetings within their institutions, ranging from discussions with colleagues to wider dissemation events.

6c) Summary

The scope of dissemination has been wide. All staff indicate that their work with OIKODOMOS has engaged them with deeper reflection on the educational process, with how they might develop their work and the wider educational processes within their institution. At this stage the observable impacts of this are within their immediate sphere of activity but these have had the effect of stimulating reflection amongst their colleagues. Wider ranging impacts are unlikely to be observed until this diffusion has had time to take place.

OIKODOMOS has developed and used an approach to teaching and a learning platform, the latter incorporating an active study environment and populated case repository. These are tangible products which have been disseminated during the project and will continue to be disseminated. The platform will be kept active and made available to partners and other interested parties, and this availability is likely to stimulate greater engagement with use of the methodology underpinned by access to the technology. Partners have expressed their intention to continue to use the platform so there is likely to be wider impact as the use of these tools begins to penetrate the communities more deeply.

The results can be considered against the Rugby Team Impact Framework (2008) indicators. This framework was designed to evaluate the impace of "training and development of researchers in higher education", but it is instructive to apply the model in slightly modified form to OIKODOMOS. The impact indicators are summarized below, with more details being available from the reference.

Domain of Effects		
Development of infrastructure		
Level 0	Foundation	Developed programmes, increased capacity
Partners participate in project based activity		
Level 1	Reaction	Participant reaction to activity
Level 2	Learning	Attitude change eg improved knowledge, increased skill level
Level 3	Behaviour	Behaviour change eg reflective self-aware, confident
Results		
Level 4	Outcomes	External impact, eg application of L&T methodology and use of the platform, improvement of student learning experience

The discussion above indicates that within its lifetime OIKODOMOS has been effective on levels 0-3, particularly for participant's personal development and beginning to have a wider impact within their institutions. There has been awareness raising which has helped to move the zone of potential impact into level 4, but at this stage there is little evidence to indicate strong level 4 impact.

7) Conclusion

The student questionnaire results indicate that OIKODOMOS has enhanced their learning experience. Despite variability in views expressed through the comments, the mode values for all questions fall within the strongly agree/agree range for both students who participated in the Joint Workshop and for those who didn't, and of those only 4% at the less positive level of agree(mode=2). Examples of comments which bring out more details of where aspects of the platforms and L&T

process can be improved `have been given above. Less than 1% of the scores associated with negative comments were also scored at less than Agree. The comments are a useful source of information, but except where indicated can not be considered as indicating the view of a significant number of respondents. The detail comments bring is worth further investigation but the conclusion based on these results is that the students experience of participation in OIKODOMOS has been overwhelmingly positive, that they have experienced a constructivist learning model, supported by a well designed learning and teaching platform which has been used to faciltate blended learning experiences.

Staff feedback indicates similar conclusions. Their informed opinions are that students have been engaged by the learning and teaching processes within OIKODOMOS, that they have achieved similar assesment scores to working in other contexts and that the platform supports the pedagogical processes well.

Areas for development/reflection include:

- Better integration of local learning and teaching activities with those in the Joint Workshops. This has been difficult on the timescale of OIKODOMOS as it can take up to a year for changes in institutional curricular to be put in place.
- A common understanding of the language and process of learning and teaching is difficult to achiveve and requires space for partners to specifically engage with the topic. Further integration of parners curricula will require a significant time commitment to allow time for views to converge and mutual trust to develop.
- Better integration of peer feedback within the Learning Activities. There is a tendency for the Workspaces to be used as a file repository, so peer feedback needs to be more explicitly built into LAs assessments. This might be supported by the inclusion of a facility to directly comment onto students visual artefacts in conjunction with the exiting peer feedback system.
- Both students and teachers commented on the need for face-to-face interaction, although the strongest comments came from participants in the Joint Workshops. There is more to explore here but it's possible the comparison between distant working and face-to-face accentuated individuals reaction to the absence of their fellow students. This also raises the question on what can be done to improve the distant experience. This relates to what is described in other contexts as the presence of distance participants.

OIKODOMOS has been a journey of exploration and development for everyone involved and has been very productive in it's 2 year lifespan. The project has achieved all it's major objectives and put much in place to support further development of collaborative programs between the schools.

General Evaluation References

BENVIC, http://www.benvic.odl.org/indexpr.html , (checked 15/02/2010).

Gehringer et al, (2007) Gehringer, Edward, Ehresman, Luke,.Conger, Susan G. and Wagle, Prasad Reusable learning objects through peer review: The Expertiza approach, *Innovate: Journal of Online Education* 3:5, June/July 2007

EUA (2008). European Universities Charter on Lifelong Learning, ISBN: 9789078997009 http://www.eua.be/fileadmin/user_upload/files/Publications/EUA_Charter_Eng_LY.pdf (checked 06/02/2010)

Fill, K. (2005) 'Student-focused Evaluation of eLearning Activities'. Short paper presented at the *European Conference on Educational Research*, University College Dublin, Ireland, September 2005.

O Seglen, Per, (1997). Why the impact factor of journals should not be used for evaluating research BMJ 1997;314(7079):497

Madrazo, L. and Massey, J. (2005) 'HOUSING@21.EU. A web-based pedagogic platform for the study of housing in Europe'. Paper presented at *ECAADE 05*, Lisbon, 21-23 September 2005.

Madrazo, Leandro, Riddy, Paul, Botturi, Luca (2007), *Housing@21.eu: Integrating Learning Spaces and Housing Repositories*, in Browsing Architecture: Metadata and Beyond, EAAE Transactions on Architectural Education no.40, pub MACE.

Riddy, P. and Fill, K. (2004) 'Evaluating eLearning Resources'. Paper presented at *Networked Learning 4th International Conference*, Lancaster University, UK, April 2004. In *Proceedings*, ISBN 1-86220-150-1, pp 630-636.

Rugby Team Impact Framework (2008). An update on evaluation in the researcher training and development sector and the implementation of the Rugby Team Impact Framework http://www.vitae.ac.uk/CMS/files/upload/Vitae-%20Policy-Forum-Impact-Framework-Update-January2009.pdf (checked 06/02/2010)

Spigai (2008), Spigai, Vittorio, Condotta, Massimiliano and Dalla Vecchia, Elisa 2. E-Learning in Didactic Workshops. The Virtual Atelier. Available from the MACE site: http://www.mace-project.eu/index.php?option=com_docman&task=doc_download&gid=31&Itemid=151, (checked 15/02/2010)

Usability Study References

Acosta, M.P., Monguet, J.M., & Rodriguez, R. (2003). Educational Hypermedia Applications: Design Based on Content Models, *EDMEDIA 03*, June 2003, Honolulu, Hawaii, USA.

Bolchini, D., Triacca, L., & Speroni, M. (2003). MiLE: a Reuse-oriented Usability Evaluation Method for the Web, *HCI International Conference*, June 2003, Crete, Greece.
Inversini, A., Botturi, L., & Triacca, L. (2006). Evaluating LMS Usability for Enhanced eLearning Experience. *EDMEDIA 2006*, Orlando, Florida, USA, 595-601.

Matera, M. et al. (2002). SUE Inspection: An Effective Method for Systematic Usability Evaluation of Hypermedia, *IEEE Transaction, 32*(1), January 2002.

Najjar, L.J.(2003). Multimedia information and learning. *Journal of Educational Multimedia and Hypermedia, 5*, 129-150.

Triacca, L., Bolchini, D., Di Blas, N. & Paolini, P. (2003). Wish you were Usable! How to improve the Quality of a Museum Website. *International Conference on Electronic Imaging and the Visual Arts (EVA03)*, Florence, Italy, 2003.

Triacca, L., Bolchini, D., Botturi, L. & Inversini, A. (2004). MiLE: Systematic Usability Evaluation for E-learning Web Applications. *AACE Journal, 12*(4) [Online journal, Outstanding Paper Awards - Invited Paper from EDMEDIA 2004]

Appendixes

Appendix 1: OIKODOMOS: Staff Evaluation Questionnaire

This questionnaire is to help us develop the learning activities, processes and environments of OIKODOMOS. Your responses are important to help guide further developments of the environment, process and content used within Oikodomos and will be entered ***anonymously*** *into a database and analysed. The results will be available from the project web site,* **www.oikodomos.org**.

Please ring the option most appropriate.

Background information

Name: **Gender:** Male Female

Nationality:

Age range: 20-25 / 26-30 / 31-40 / 41-50 / 51-60 / over 60

Institution: FASTU, Bratislava IUG, Grenoble

URL, La Salle Barcelona Sint-Lucas, Ghent/Brussels

Position/ Role:

Are learning activities related to OIKODOMOS Workshops (international) integrated with regular courses at your university
Yes No

Which type of sessions do you teach?	**Year of study (eg 3rd)**	**Undergraduate**	**Masters**	**No of credits (ECTS)**
Seminar				
Design studio				
Specialized design studio				
Elective				
Other				

Please underline any OIKODOMOS Design Workshops which you participated in:

Ghent: Lifelong dwelling, one side of sustainability, October 2008

Grenoble: Housing for Diversity, April 2009

Bratislava: Effective Housing: October 2009

Evaluation of Platforms and Process in the preparatory courses and seminars taking place at your School, <u>previous to the Design Workshops</u>

Please score each criteria according to the values given below. We would appreciate any comments or thoughts giving more information about the reasons for your score:

A – strongly agree, **B** – agree , **C** - disagree, **D** – strongly disagree, **E** – don't know,
N/A – Not Applicable

	About the OIKODOMOS Workspace					
1	The OIKODOMOS Workspace was easy to use.	A	B	C	D	E
	Comments					
2	Required tools for teachers were included (e.g. to add Learning activities, tasks, learning outcomes, comments; to search)	A	B	C	D	E
	Comments					
3	All the materials in the learning space were easy to access	A	B	C	D	E
	Comments					
4	I could easily get technical support for using the OIKODOMOS workspace	A	B	C	D	E
	Comments					
	About using the OIKODOMOS Workspace for supporting learning					
5	The OIKODOMOS Workspace helped to develop students reflective abilities	A	B	C	D	E
	Comments					
6	The OIKODOMOS Workspace enabled the students to explore critical issues collaboratively	A	B	C	D	E
	Comments					
7	The students found the OIKODOMOS Workspace useful for developing their group work	A	B	C	D	E
	Comments					

8	The level of student's comments on others work made within the OIKODOMOS Workspace was of a good standard	A	B	C	D	E	
	Comments						
9	There was a clear link between the use of the OIKODOMOS Workspace and assessment of students (formative or summative) in your teaching	A	B	C	D	E	N/A
	Comments						
10	I found the method/tool for assessment of students work in the OIKODOMOS Workspace helpful	A	B	C	D	E	N/A
	Comments						
11	Using the OIKODOMOS Workspace improved learning outcomes for my students (e.g improved knowledge / understanding / skills)	A	B	C	D	E	N/A
	Comments						
12	I enjoyed using the OIKODOMOS Workspace	A	B	C	D	E	N/A
	Comments						
13	Changes are needed to improve the OIKODOMOS Workspace so that it supports teaching and learning more effectively	A	B	C	D	E	
	Comments (Please specify any changes you would like)						
	About wider use of the OIKODOMOS spaces and approaches to learning and teaching						
14	I will use the OIKODOMOS Workspaces to support my teaching in the future	A	B	C	D	E	N/A
	Comments						
15	I will use the OIKODOMOS Housing Repository to support my teaching in the future	A	B	C	D	E	
	Comments						
16	The learning process encouraged analysis of the connections between social, economical, technological aspects and urban-architectural concepts	A	B	C	D	E	
	Comments						
17	The blend of technology and approach to teaching used within OIKODOMOS is effective for supporting students working at a distance	A	B	C	D	E	

	Comments					
18	The work on the OIKODOMOS project has changed the way I design my teaching (emphasis is on *design*)	A	B	C	D	E
	Comments					
19	The work on the OIKODOMOS project has changed my approach to teaching within my institution. (emphasis is on *delivery*)	A	B	C	D	E
	Comments					
	About Dissemination of OIKODOMOS and it's outputs.					
20	I have discussed the learning and teaching approach used within OIKODOMOS with my colleagues	A	B	C	D	E
	Comments					
21	Teaching colleagues will use OIKODOMOS to support their teaching in the future	A	B	C	D	E
	Comments					
22	The work of OIKODOMOS has been discussed on school committees concerned with teaching.	A	B	C	D	E
	Comments					
23	Academic colleagues from other institutions are interested in using a blended approach to learning similar to OIKODOMOS.	A	B	C	D	E
	Comments					

What activities and tools of the Oikodmos project brought about the biggest changes in your teaching. Please select the score 1-low to 4-high	**For myself**	**For my students**
Interaction with colleagues in the project at my institution	1 2 3 4	Not Applicable
Interaction with international colleagues	1 2 3 4	Not Applicable
Joint workshops (Barcelona, Ghent, Grenoble, Bratislava), including pre- and post-activities	1 2 3 4	Not Applicable
Preparing for workshops	1 2 3 4	1 2 3 4
Participating in workshops	1 2 3 4	1 2 3 4
Workshop follow-up	1 2 3 4	1 2 3 4
Using Workspaces	1 2 3 4	1 2 3 4
Using the Housing Repository	1 2 3 4	1 2 3 4

If you are willing for us to talk with you about your responses please provide your email address and/or phone number and we will be in touch:

……..

……

Please return the completed questionnaire paul.riddy@virgin.net . Feel free to get in touch if you have any questions.

Thank you for your time

Appendix 2: OIKODOMOS: Interview questions

Questions to guide the semi-structured interviews with **staff**:

1) What are the main areas you have worked on during the project?

2) Who of the OIKODOMOS team have you worked with most closely?

3) What has gone well? Why?

4) What has not gone well? Why?

5) What, if anything could have been done differently?
(if the approaches to using the OIKODOMOS environments & resources not covered, ask specifically*)*

6) Please describe your use of the case study library as a tool to support learning?

7) How did / are you assessing what the students learnt?
For example moderating the web discussions
Process, Final output, Other
When viewing the design proposals
(If not clear ask "What is the link between the processes of teaching, learning and assessment?")

8) What significant outcomes are you aware of from OIKODOMOS? How would you value them?
(if OIKODOMOS Case Study and Design Studio environments, newsletter, publications, & book not mentioned, ask specifically)

9) Did you disseminated OIKODOMOS outcomes
a. locally?
b. nationally?
c. internationally?

10) How did OIKODOMOS affect
d. you personally?
e. your colleagues?
f. your students *(if appropriate; if not mentioned ask about no. of students using the resources)*?

11) What would you like to be the lasting impact of OIKODOMOS?

12) Is there anything else you'd like to say about the project processes or intended outcomes?

Appendix 3: OIKODOMOS Student evaluation questionnaire

Iimplemented on the web as 5 sections and with comment boxes for all Likert scored questions.

Data scaled :

1-4, Strongly agree, Agree, Disagree, Strongly disagree, + Don't know & Not Applicable as N/A.

1	Nationality
2	Gender
3	Age range
4	Institution
5	If you are an Erasmus student visiting one of these institutions please also give your home institution and its country.
6	Which course are you on?
7	Year of study on Batchelor or Masters programme
8	The Learning Activities related to the Effective Housing / Bratislava Dubravka workshop are integrated with regular courses at my university
9	Please select all learning activities and give the number of credits if known (in ECTS: 1 ECTS=25-30 hours of study) *Seminar* *Design Studio* *Specialised Design Studio* *Elective*
10	What is your knowledge of English? *Speaking* *Readng* *Writing*
11	Do your know your IELTS, TOEFL or other score? If so please give the name of the test/qualification and your score.
12	The purpose of international co-operation in-our school learning activities was clear from their beginning
13	The Learning Activities / Tasks created by teachers in the OIKODOMOS Workspace were relevant, appropriate and clear.
14	From the start of these activities I was given full descriptions of the learning activity, including learning objectives/outcomes
15	Before the Bratislava workshop took place I used the OIKODOMOS Workspaces in conjunction with learning activities taking place at my university.
16	Were you a participant in the Bratislava workshop?
17	If YES, Was this the first OIKODOMOS workshop in which you had participated?
18	Before joining the workshop in Bratislava I was clear about the purpose of the international co-operation taking place there.
19	The learning activities we did in my school were a good preparation for the the work in Bratislava.
20	I used ICT tools before the workshop to gain the information about the site. Please estimate your overall use of the tools below *OIKODOMOS Workspace* *OIKODOMOS Housing Repository* *Other Internet sources* *Google Maps, Earth, Groups...* *AutoCAD* *SketchUp* *Photoshop* *PowerPoint/Presenter* *Communication tools (mail/chat, skype)* *Other (please specify tool and use)*

21	Using these tools I was able to access enough information to prepare for the work in Bratislava
22	Electronic/computer communication helped me to get to know the participants from the other schools well enough to help collaboration before going to Bratislava
23	The academic support at my university was sufficient for preparation of the learning activities to be carried out in Bratislava
24	I discussed information on the Bratislava site with students and teachers from other schools in advance of the workshop.
25	I found students contributions to the discussions helpful
26	I found teachers contributions to the discussions helpful.
27	The videoconference presentation before going to Bratislava was helpful to gain information about the site.
28	The Learning Activities created by teachers in the OIKODOMOS Workspaces were relevant, and their descriptions and objectives appropriate and clear. (This question is a repeat from earlier because some Learning Activities continued from the workshop and some were new.)
29	In-school activities have been integrated and/or continue the activities begun during the Bratislava workshop
30	I use the OIKODOMOS Workspace regularly to complete learning activities continuing after the Bratislava workshop.
31	The learning process, including use of the OIKODOMOS Workspace, has encouraged analysis of the connections between social, economical, technological aspects and the urban-architectural concepts.
32	Working online collaboratively with foreign partners has been a good experience.
33	After the workshop I used ICT tools to gain the information about the site and/or to work on the tasks.
34	Please estimate your overall use of the tools below (This is a repeat of an earlier question so we can look at any change in use of the tools) *OIKODOMOS Workspace* *OIKODOMOS Housing Repository* *Other Internet sources* *Google Maps, Earth, Groups...* *AutoCAD* *SketchUp* *Photoshop* *PowerPoint/Presenter* *Communication tools (mail/chat, skype)* *Other (please specify tool and use)*
35	The workspaces and tools were easy to use.
36	All necessary tools were included in the workspaces e.g. to search tasks, learning activities, resources files & groups; to add/view deliverables.
37	All the materials in the workspaces were easy to locate and access.
38	The workspaces was a useful support for achieving the goals of the design project
39	The methods to obtain support for using the workspaces worked well eg how to update your profile, how to do specific actions such as add task outputs
40	The response times to questions from learners by staff were adequate.
41	Using the workspaces suits my way of working
42	The workspaces provides a good environment in which to work collaboratively
43	What do you like, what is done well in the workspaces?
44	What didn't you like, could be done differently?
45	Please include any other suggestions for improving the OIKODOMOS Workspaces.
46	We would like to organise some short, follow up meetings / discussions with individuals. If you are willing to participate please give your name and email address below.