Building Personal Learning Environments by using and mixing ICT tools in a professional way

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Summary

This paper reports on a teaching experience of the introduction of ICT to higher education students in a complementary professional approach and a Personal Learning Environment (PLE) development approach, as well as a naturalistic study based on this experience. The central focus of this methodology was the use of hands-on sessions to introduce students to some specific ICT tools, and exploring the building process of an awareness about their Personal Learning environments.

In terms of learning, we confirmed that students very much appreciate new ways of developing their tasks and their course work. Even when the great majority of students associates learning with acquiring only information and some of them associate learning with memorizing.

In terms of Technology, after this experience we can conclude that students, when arriving at university, have no experience –even knowledge- in the use of ICT tools. In addition, students from the first year of the degree don't think they use Web 2.0 (awareness), and even more, they don't believe that they can use ICT tools for learning, even if they actually do. They value, useful tools which help them to plan their tasks, save time, simplify complicated tasks and, definitively, have fun; but also they specially value the ICT tools they discovered, seeing opportunities for Independency, collaboration, self-importance in the learning process

The vast majority of students have a basic perception of their PLE. Few of them don't relate tools with themselves but with their tasks, and only some of them go one step further by establishing more complex relationships between tools, contents, tasks and themselves enriching each other.

Keywords

PLE, Personal Learning Environments, higher education, ICT, web 2.0, teaching

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I. Personal Learning environments for initial professional learning

We live an incredibly exciting time for learning, even more, for learning to learn.

Latest twenty years, and the World Wide Web development, have opened a lot of opportunities for all of us in terms of accessing to information. Moreover, the last decade in terms of technologies, has increased massively the possibilities for people of collaborating easily each other, doesn't matter how far away from each other they are.

Technologies related to Web 2.0 user features, Social Networking, Mobile technologies, Ubiquitous connections, and so on, have changed gradually but rapidly the role that information has in our life, and how this information must be founded, analyzed, shared and used for every activity we do (Attwell, 2007). Consequently, the role ICT technologies have changed as well, they are not only a way to bring information any more, they have configured around our activities, environments for relationship between the information and us, such as between other people and us (Downes, 2010). Indeed, these technologies have configured a crucial part of the environment around us. We are doomed to be Residents with technologies, not visitors any more (White, 2009).

Evidently those changes have a critical impact in to the learning process conception (Torres-Kompen et al., 2008). Learning is a process that today, less than never, must be hold exclusively in classrooms. Informal learning processes enrich all the time initial, professional, and lifelong learning processes (Costa, 2010). Informal ways for learning, embedded in our formal environments for working and living, are more important than ever before (Cross, 2010).

On this situation, think in initial professional training from an integral perspective, must include not only contents and procedures. Actually, professional initial training has to include basic competences to continue learning in the current –even the future- rapidly changing world. In the end, professional initial training (and specifically, Higher Education) has to include as a basic goal the training for efficiently build and manage the Personal Learning Environment (PLE) of each student such as a continuous learner (Daniels & Carneiro, 2008).

Following Adell and Castañeda (2010), we conceive PLE as a set of tools, information sources, connections and activities-experiences- that every person uses to learn assiduously. It means that the Personal Learning Environment includes: the sources he use for founding information, the relationship he has with this information, as well as relationships between this information and other sources consulted. Also, PLE includes people who he use as a reference, the connections between those and himself, and the relationships between those people and others may eventually be of interest. And, of course, PLE includes the mechanisms that help him to rework and rebuild information and knowledge, both in the phase of individual reflection and recreation, as phase in which other people help us reflecting for its reconstruction.

II. Building PLEs in a university course, an overview of the process

For this experience we have used a course with students in the first year of a degree in social education at the University of Murcia (Spain) in the first part of the period 2009-2010. The course is called "Information and Communication Technologies (from here on ICT) in Social Education". This course intends to be an introduction to the use of ICT in non formal and informal education, for the educational processes as well as for the management process around social education institutions.

In total we were working with 150 students (from 18 to 49 years old), and they were working with two complementary teachers (not in parallel). The main goals of the course from the teachers' point of view were two:

- Giving the students a first overview about how ICT can be used effectively to enhance the non formal educational process, but not only to make it more complicated or modern.
- Provide the students with opportunities to develop their knowledge of the ICT tools and applications, in order to offer them a first experience about the evolution and current situation of ICT. Also to help them to build an initial catalogue of tools, useful in helping to start their work on their degrees, as well as being useful as work tools catalogue, and of course, useful in providing them with good opportunities for professional learning.

In order to achieve both objectives we have designed a methodology of teaching and learning, based on a student centered work proposal. In groups, and during the whole course, students had to build and develop proposal for the creation of a non-profit organization dedicated to the attention of a group of population at a risk of exclusion (previously selected from a list). This organization had to have at least 3 lines of technology enhanced education approaches, specially centered on the elected collective.

Teachers organized the work course dynamic around three principal strategies: 1) Lectures and conferences; 2) Collaborative group and 3) Individual Hands on workshops. In spite of all of these strategies were oriented to accomplish the objectives of the course, in this paper we will focus the attention in the work carried out in the context of the hands-on sessions.

From our perspective, the work on these hands-on sessions (integrated in the whole course dynamic) is the core of our students' PLE development process. Therefore, we prepared and carried out a sequence of actions around these sessions to intend to understand better how this process was. This sequence/process is including on the present work.

Firstly, we have explored at the students' level and frequency of use of web 2.0 tools in the beginning of the course; basically in order to understand better the dynamics which take place during the semester, plan more carefully the practices, hands on sessions, as well as organize the group work. The main function of this exploration was to show us the best way to initiate the students' use and exploration of ICT tools for learning and working.

Afterwards this, we have started the hands on sessions. Twice at week students participated in a session centered on a specific kind of tool or application. Work in those hands-on sessions was individual. Students had to explore the tool, do a specialized work, and the group member with the role of "the practical" (a different student each week) had to apply the possibilities of this tool to the group proposal and to discuss its usefulness of it in the overall project.

Finally, in the last hands-on session-, students had to draw their Personal Learning Environment using a map mapping tool (in this case we used Gliffy, http://www.gliffy.com). On these pictures, students had to include every online tool used for their learning, including the three categories which compose a PLE: tools to read (in the most wide of sense of the word), writing (and reflecting) and sharing (Adell & Castañeda, 2010). The tools had to be not only related to the present course. In addition, in the picture, the student had to include a representation of himself, of the tools, and had to include, using arrows, the manner of its relationship with the tool (unidirectional or bidirectional).

In this final activity, we wanted to explore the students awareness of their Personal Learning Environments, but also we wanted to see their attitudes towards the ICT tools explored, as well as how these tools have changed their work or not. Consequently we have complemented the last hands-on session, with a short questionnaire.

Let's see carefully the process.

## III. Participants, the initial situation

For this initial exploration of the situation about the use of technologies by our students we asked them for their level of knowledge and amount of use of different kinds of web services and tools. While always giving some common examples to illustrate each category (p.e. social networks such as tuenti, facebook, ning, etc.). We asked if they use the tool every day, more than twice at week, once at week, more than twice at month, once at month, almost never, never but know what is this or Don't know what is this.

From this first exploration we know than our students hadn't used ICT very much before this course. Use of ICT tools for them is almost anecdotal, but is not a normal habit.

In order to show the more relevant data we have collected during this first approach, we have reorganized the categories used in the original questionnaire (every day, more than twice at week, and so on), in only three categories in order to see it more clearly as a graphic. Therefore, in the

graphic "frequently" includes the original categories: every day, more than twice at week and once at week; "Sometimes" includes more than twice at month, once at month and almost never; finally "Never" includes the answers for the category Never but know what is this and Don't know what is this.

Figure 1. Students frequency of use of some ICT tools expressed in percentages.
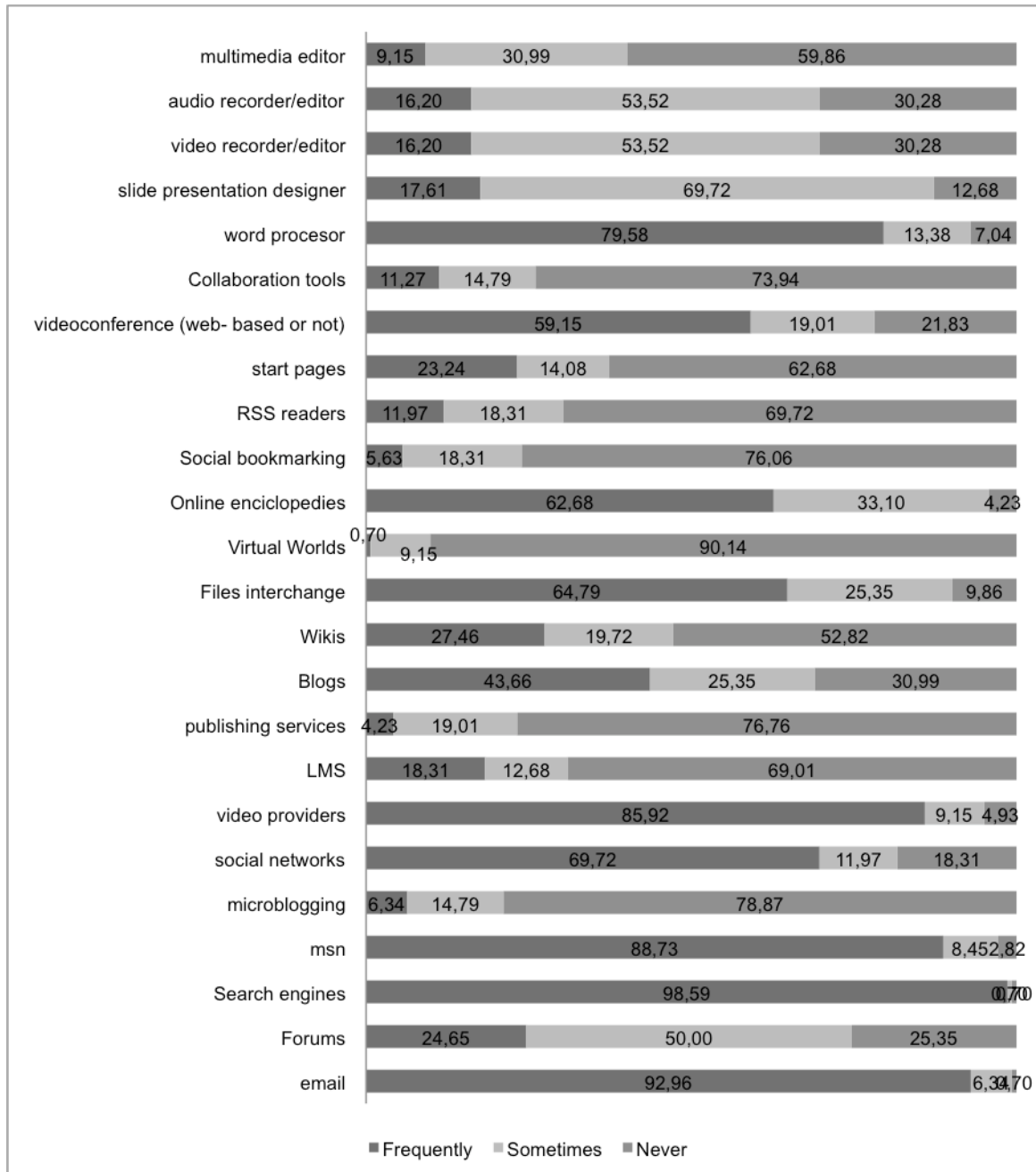
As is evident from the graphic (Figure 1), only some of the tools are used frequently for more than the 50% of students. Moreover, if we analyze more closely the data about these tools used "frequently", we could split this category on the original three (Figure 2), and we observe on this view, than our students only used some tools daily. From our data we know than Email, Search

Engines, Messenger and Social Networks are the only services that more than 40% of our students use every day.

Figure 2. Frequently used ICT tools. Data from the original categories.

	eMail	Search engines	Msn	Social networks	Video providers	Files interchange	Online enciclopedies	Videoconference	Word procesor
Every day	**61,97**	**76,76**	**70,42**	**51,41**	27,46	28,87	13,38	38,73	33,10
Twice at week	27,46	19,72	15,49	13,38	43,66	28,87	38,03	15,49	35,21
Once at week	3,52	2,11	2,82	4,93	14,79	7,04	11,27	4,93	11,27

On the other hand, there are many tools which they didn't ever use. As in the previous data, in this case of not-used tools, we can also split this general category in the original ones in order to see closely those data (see figure 3). Looking to this we can see that, from the 24 kind of Web services/tools we asked about to our students, more than 40% of them had never heard of 7 of them: collaboration tools. Start pages, RSS readers, Social Bookmarking, Virtual worlds, publishing services and LMS.

Figure 3. Not used ICT tools. Data from the original categories

	Microblogging	LMS	Publishing services	Wikis	Virtual Worlds	Social bookmarking	RSS readers	Start pages	Collaboration tools	Multimedia editor
Never but know what is this	43,66	17,61	14,79	19,72	42,25	7,04	8,45	19,01	14,79	27,46
Don't know what is this	35,21	**51,41**	**61,97**	33,10	**47,89**	**69,01**	**61,27**	**43,66**	**59,15**	32,39

With these data we had a first overview of our students, so bearing this in mind we planned the hands on sessions.

IV. Hands-on sessions, sewing smalls parts of a whole

Bearing in mind the course schedule, as well as the unforeseen of the course, and with the overview of the initial situation of our students about ICT tools, we have planned and implemented sixteen hands-on sessions using, in addition, the following basic criteria:

- Each activity had to include a specific task related to the field of social education, and could be related to the collaborative work-group the students were working on.
- Students were working individually in the hands-on session, BUT each week one member of each group of work had to use the tool explored in the hands-on session in a specific way.
- We prioritized activities which promote online collaborative work.
- ICT tools used in the hands-on session had to be free and web based.
- Hands on sessions take place in a special class room with PCs, and teachers used a less-directive dynamic of working. Teachers showed them only few basic guidelines about the tools and its use, BUT each student had to carry out the task while discovering the tools features alone. Also, students could help each other when one of them discovered a feature or application.
- Students couldn't include resources or information used by other students without justifying it.

Following these criteria we implemented the following hands on workshops:

4.1. Session 1: Blogs, expressing myself:

In order to guarantee a tool which is useful for helping students to publish their work, and which is at the same time a useful tool to facilitate the assessment from their teachers, in the first hands-on students discovered blogs. They could create a blog in one of the tools presented (the teacher only shows the web page of each service): WordPress, Edublogs or Blogger (http://www.blogger.com) . Once presented, students had to personalize it (avatar, skin, colors, widgets, and so on) and start to publish information about the course. This blog was the base of their practices, so students maintain it, at least, during the whole course.

In the first post students had to include their expectations of the course and what they have learnt from the hands-on session, not only technologically, but personally and professionally. It was a constant part of every hands-on practice, and therefore of each new post in the blog.

4.2. Session 2: Wiki, building something together:

In the second hands-on session, students were introduced to the world of wikis. Firstly, they completed a wiki with their data and choose group for the collaborative work-group. Also, they have to create a wiki about their collective. The service choosen to do this was PbWorks (http://www.pbworks.com).

4.3. Sessions 3 and 4: Private social networking, building a network:

Once the groups began to work together, we started to create online communities including the interchanges for every group. To accomplish this, teachers created a Social Networking Site for the course based on NING.

We used two hands-on sessions to introduce students in NING. The First one in order to see the tool, personalize the profile, and the second one to create their own groups and initiate and continue a discussion line.

4.4. Session 5: social bookmarking, recommendations everywhere:

In the 5th hands-on (from here on HoS) they had to observe the use of social bookmarking. We used the tool Míster Wong (http://www.mister-wong.es) because it is in Spanish. Therefore, each student had to include at least 6 links which are interesting for them, justifying their interest, and, every week, the group's accounts in Mr. Wong had to grow up with the links used to complete the collaborative work.

4.5. Session 6: RSS, the dynamic web under control

In this new HoS the main objective was to explain to students the mechanisms of RSS, and introduce them to the use of a RSS Reader. In this case we choose GReader (http://www.google.es/reader).

4.6. Session 7: Creative Commons and Open Source, sharing free knowledge

This and session N. 11, are the only sessions which were not based on a specific tool.

Previous to this HoS, students had to read some online documents about Creative-commons licenses, licenses for open resources, open source and so on. Once they had read this, they had to include a post in their blog including some correctly referenced free resources (one picture, one video, one document, one multimedia cast). For each resource, the students had also to include the kind of license.

4.7. Session 8: Multimedia and Videocast, publicity and multimedia expression

Using the tool animoto (http://animoto.com/), students had to design and produce a advertising spot (30 seconds max.) about their NGO or association (group- work). This must only include free or licensed pictures, videos and music. Once the spot was finished, everybody had to include it in their blog and in each group chose the best to include on the NGO Web Page.

4.8. Session 9 and 10: Desktop suites online: working in our online office:

For HoS 9 and 10 the idea was explore the possibility to work on usual documents BUT using web based tools. Consequently, and taking into account students had at this point a Google account, we decided to explore Google Docs (http://docs.google.com/). The final idea was students create, share and build a specific document together (specifications given by teachers), a folder with documents about the group-work, and some open to the public.

4.9. Session 11: Digital divide, a treasure hunt to analyze better the digital world

As we have said previously, this session was not based on a specific tool. Nevertheless it was based on a specific methodology: A treasure hunt.

Using a treasure hunt, students had to explore the concepts of Digital Divide, Universal Accessibility, Equal opportunities and Digital Inclusion. All of them had to include the answers in their blogs and finally they had to answer this question: How we can contribute to equal opportunities for everybody in a digital world?

Answers had to be posted on their blog and the final question had to be included and discussed in the NING's forum.

4.10. Session 12: ICT for special needs.

In this session, the principal aim was explore various catalogues of supporting tools for people with disabilities and from these, students had to select an ICT solution indicating the product name, type (software, hardware,...), a description, author /distributor, product web site, purpose and educational stage / field. This information had to be included in a post on their personal blogs, and they couldn't repeat any solution or product.

4.11. Session 13: Time lines: looking at the temporal development

In HoS Number 13 we wanted to explore timelines as expression and synthesis of processes. To accomplish this HoS, we used Dipity (http://www.dipity.com/). In addition we offer the possibility for students to use other timeline tools. In the session students had to log themselves into the tool, personalize the profile and create a timeline of their history at the university from the beginning of the course. The timeline had to include at least 6 events and also had to include at least a video, three pictures and two related links. Also we asked them to include the RSS feed of their blogs. Finally they had to embed it in a post of their blogs.

4.12. Session 14: online diary, organizing the schedule online

In this hands-on session we wanted to start to use the Web with students to organize their schedule, both personal and professional, and the schedule of their NGOs. For this purpose we used Google Calendar (http://www.google.com/calendar/).

4.13. Session 15: Visual presentations; using slides efficiently

Final evaluation of the course included an oral presentation, so this HoS had as its main objective, the exploration of the possibilities of Slides to support a speech, how designing and publishing it online. In accordance with the using criteria used in other HoS, we use GDocs to design it and slideshare (http://www.slideshare.net) to publish it; we know we could do this with GDocs, BUT it was an opportunity to explore a different tool.

In spite of students had having the liberty to include any tools or resources they wanted, they were forced to always use open resources (creative commons licensed or open source).

4.14. Session 16: PLEs: drawing my mind

At this point, in the course, in a lecture made before the HoS, we introduced for the first time the concept of Personal Learning Environment and some of its implications for learning in particular, and for education in general.

The final proposal we implemented in the hands –on session was developed as below:

Figure 4. Hands-on sessions sequence
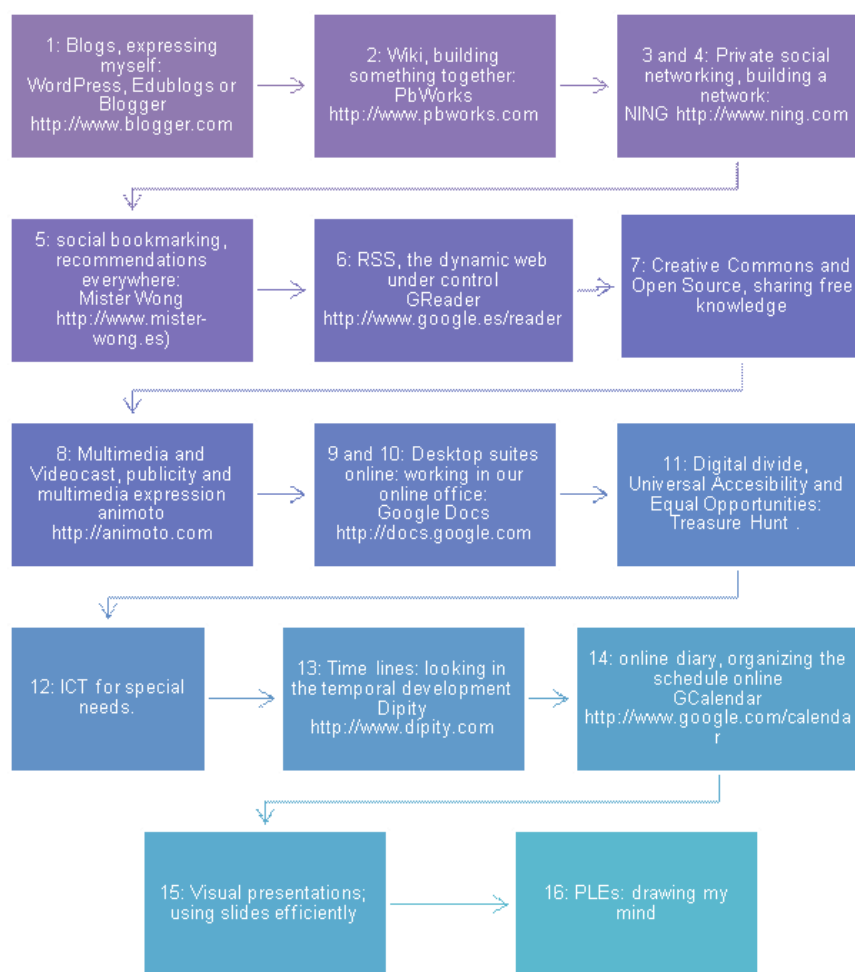
The idea was not only to explore individually all these tools in specific tasks, but integrate them into the normal work dynamic of students, and each week find ways to use them in the group-work proposal. Basically, every week, they had to integrate those tools into their Personal Learning Environments.

V. A Patchwork for learning and working

Once we asked to our students to draw their PLE, to sewing this kind of patchwork with the different pieces, our impression is that the following steps were more "artistic" than reflective (they love drawing, even with this unknown web tool). Therefore, after review 150 diagrams of our students we are not pretty sure if there are on these pictures enough data to make a deep analysis. Even if there, we don't know if data extracted from these diagrams would be relevant for the individual analysis.

Nevertheless, bearing in mind that our students had never seen or designed a PLE diagram before would be interesting take a short look into these diagrams to see, at least, some general trends and details.

In the current literature about PLEs, probably the biggest sample of PLE diagrams has been being collected by Scott Leslie (available here http://edtechpost.wikispaces.com/PLE+Diagrams). Leslie has divided his collection into 4 principal categories: Tool oriented, use/action oriented, people oriented and a general category: hybrid/abstract/other.

Looking into our collection of PLE diagrams (from our students), and following the classifying from Leslie, we could conclude that all of them (100%) are tool oriented. This is not rare, specially if we take into account that the whole process is centered in hands on sessions focused in the learning and use of ICT tools, and the process to ask them of drawing this diagram was based on their experiences with tools.

Unfortunately we don't have much information about the process of drawing of these diagrams. Consequently, we can't understand why students carry on them in a specific way. Nonetheless, we have detected trends into these diagrams, and we are going to expose them, using some of these diagrams (deliberately chosen) to illustrate this.

"Self centered" PLE Representations

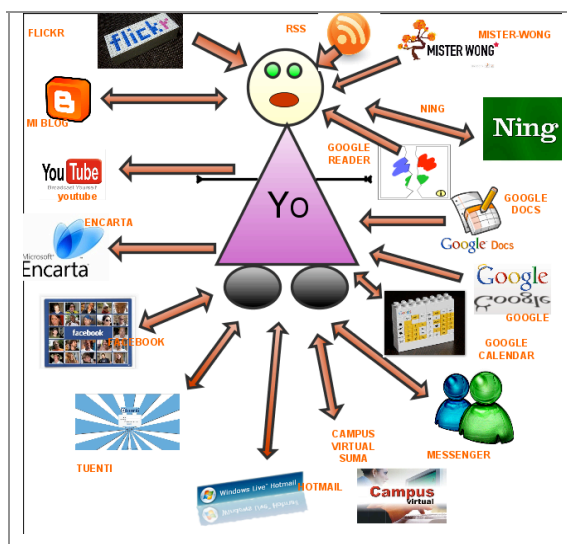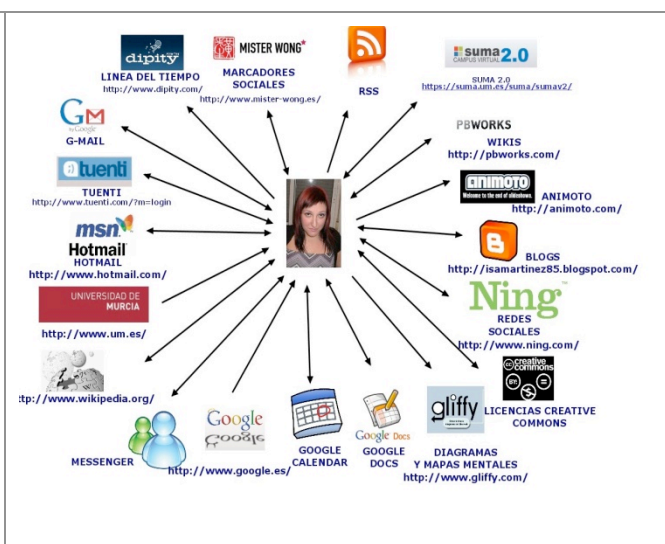Figure 5. Student 35's PLE diagram   Figure 6. Student 78's PLE diagram

The vast majority of the students (108 from 150, 72%) represented their PLE as diagrams with ICT tools connected to themselves. Almost all of them included only ICT tools we used at class room, and only few of them included as well other tools from their life and work outside the course.

PLEs where tools are also connected

Figure 7. Student 3's PLE diagram
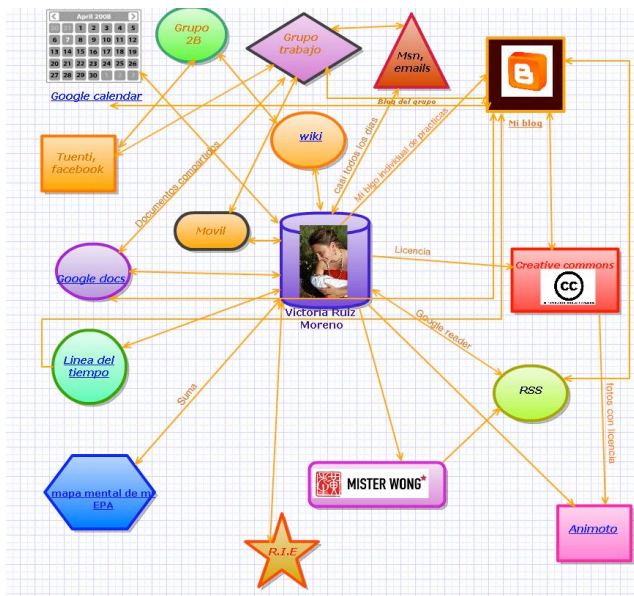
Some students (18 students, 12% of them) included relationships not only between themselves and ICT tools, they also included relationships between contents and actions in different tools, analyzing how they interact and enrich each other and also enrich the groupwork.

Different PLEs for the same person?

Figure 8. Student 40's PLE diagram
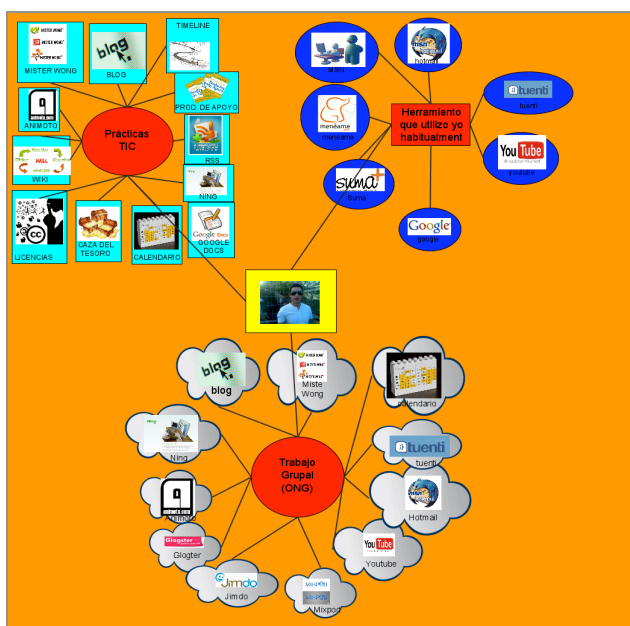
Some students –only 8 (5.34%) of them- divided their PLEs into three main parts: tools from the hands on sessions, tools used habitually, and tools for doing the group-work. Indeed, as you can see in the diagram, they are at the centre of the activities, BUT tools not working directly with them are not integrated with them. They are working around activities, tasks.

Different levels of the same PLE?

Figure 9. Student 122's PLE diagram
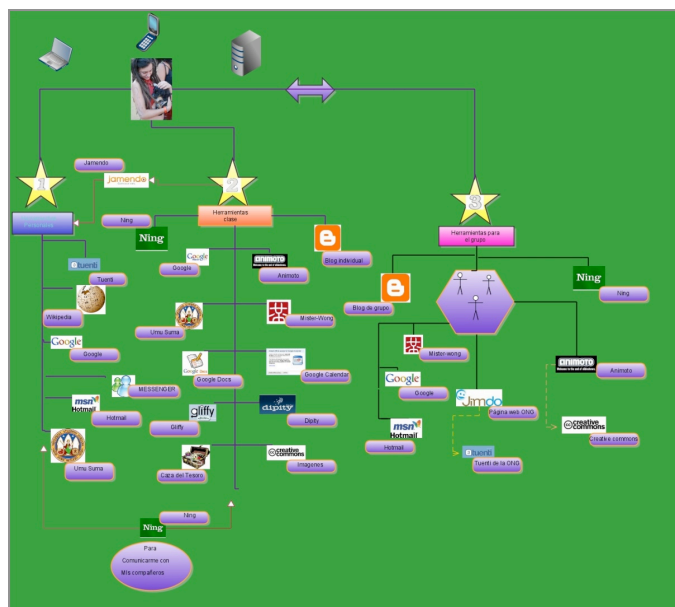
Moreover, rather than divide the PLE into the relationship of the tools to specific tasks, some students include a kind of hierarchy putting the most important of the tools used in the high part of the diagram (16 students, the 9.66% of our sample)

VI. The students' vision of the consequences of the work

As we said before, in order to know better the impressions of our students about the course itself and about their learning evolving, once the course finished, we asked to the students to fill in an anonymous questionnaire centering on their impressions and attitudes towards ICT tools, for the course and for their learning.

To accomplish this, we included on this questionnaire only four content items (apart from demographic ones). The questionnaire was implemented and answered in Spanish but we directly translated the question to facilitate the analysis.

In the first item we wanted to explore their attitude to ICT tool introduction and also their learning approach. We ask them:

> *In the last months you have met new ICT tools to use. Do you think these tools could improve the way you learn? Why?*

The vast majority of students (132 from 135; 97.77%) answered *yes* to this question

When they justify their answers, the majority of them use such expressions as *"New ways to work", "I can think differently", "It facilitates my work",* and finally some said *"Thanks to this I can access more information"*.

Student who said *not* affirm they have learn many new things but they think this wouldn't change the way they learn. Specifically, there is a very interesting answer in one of these three cases which says:

> *"it would be very helpful, specially to do my Work, but I don't see that they give me more information or help me to memorize" (Student N. 76)*

For the second item we asked them

> *Are there any ICT tools explored on this course which have radically changed the way you do something or access something? Choose a maximum of 3 (different) and justify your choice.*

As with the previous item, the huge majority choose three tools which have radically changed radically their access or way of doing something. Only two students (1.5%) didn't choose any of them. Four (3%) chose only one, and fifteen (11.11%) choose only two.

Students wrote a list with their three tools (three elements in the list) which have changed the way they do something, and a big part of their answers were distributed as you can see in the following table (figure 10).

Figure 10. ICT tools which have changed radically the way you do something.

	1st	2nd	3rd
G. Docs	**17,78**	**15,56**	8,89
Blog	**24,44**	**19,26**	11,11
G. Calendar	**14,81**	**16,30**	**18,52**
G. Reader	2,22	3,70	2,22
Ning	13,33	9,63	8,15
Wiki	0,74	0,00	0,74
Animoto	7,41	8,15	**12,59**
Mr wong	11,85	11,85	**14,07**
Dipity	0,00	1,48	4,44
Gliffy	3,70	6,67	5,93
No one	1,48	2,96	11,11
TOTAL	97,78	95,56	97,78

This table (Figure 10) shows, using percentages, the ICT tools chosen and its position in the list made by each student. We have marked (bold and underlined) the 3 tools more frequently included on each position, and from them we have also included, in the following table (Figure 11), the most common reasons argued by students to justify their choice.

Figure 11. ICT tools which have changed radically the way you do something. Reasoning.

Application	Tool	Justify
Blogs	Blogger	• *"It is a way to express myself freely"* • *"I have a corner only for me on the Internet"* • *"I can share my activities, feelings and thoughts with more people"*
Online office suite	Google Docs	• *"The possibility to edit documents collaboratively is impressive!"* • *"It is good to change documents to other formats easily (p.e. .pdf)"* • *"It help us to save time sharing documents and editing in almost real time"*
Schedule and online diary	Google Calendar	• *"I have a way to remember everything"* • *It helps me a lot by sending me messages about my appointments to my email"* • *"Now I have a useful tool to plan my day"*
Social Bookmarking	Mr. Wong	• *"It is quite useful having Access to all my bookmarks everywhere"* • *"I wouldn't lose my searches anymore because I always have notes about them"* • *"It help me to share my findings with my friends and classmates"*
Multimedia producer	Animoto	• *The mediacast we made are very attractive and easy to use"* • *"It is fun"*

In the third item we asked them:

> *Try to imagine your life five years in the future, you have graduated and are working in the "real world". How many of these tools you have encountered on this course do you think will be part of your PLE then?*

We gave them four possible answers: None of them, some of them, many of them and all of them.

Figure 12. How many of the tools encountered on the course will be in your PLE in 5 years?
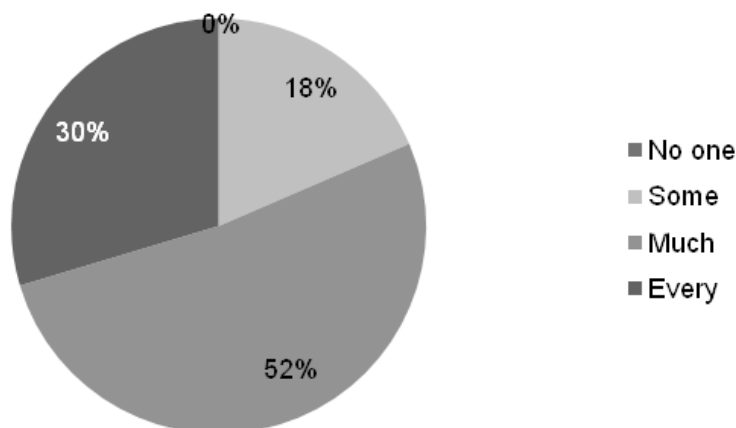
In this case, the optimism of students about the role of ICT tools in their lives is also evident. A large amount of them (82%) think they will use many or every ICT tool they have seen on this course in five years time, and most importantly they think they include them in their future PLEs.

Reasons for justifying this answer were very similar to others argued in previous items. These included such expressions as: *"they are very useful", "I'm already using them and I think they will be basic to be a reliable professional", "they help me a lot and make the paperwork easier", "I can always access very good information with them", "I don't need to memorize everything, I can access all my documents online", "They have completely changed my way of working and now I don't imagine working without them"*.

The majority of students, who don't think these tools will be part of their PLE or think only part of them will be, justify their choices by arguing the fast development of technology *"we don't know what tools we will have in five years. There will be more and better ones for sure"*.

Finally we asked our students in the fourth item the following question:

> *From the tools you have included in your PLE, please enumerate the three most important for your learning and describe what you do with them*

As in the second item of this questionnaire, in this case students fill their answers putting three ICT tools in a list. The answers from our students were concentrated on some tools, as we show in the following table (figure 13):

Figure 13. Most important ICT tools for your learning. Percentages.

	1st	2nd	3rd	
G Docs	**17,78**	6,67	9,63	**34,07**
Google Search	**8,15**	4,44	2,22	**14,81**
Blog	**31,11**	**8,89**	**11,11**	**51,11**
Google calendar	5,93	**15,56**	8,15	29,63
G Reader	5,19	2,22	2,22	9,63
Ning	6,67	**11,11**	**12,59**	**30,37**

Wiki	0,00	2,22	0,00	2,22
Animoto	1,48	7,41	6,67	15,56
Mr wong	4,44	5,19	**10,37**	**20,00**
Dipity	0,74	1,48	4,44	6,67
Gliffy	0,00	2,96	1,48	4,44
Wikipedia	2,22	3,70	2,22	8,15
Twitter	0,74	1,48	2,22	4,44
Tuenti	1,48	5,19	3,70	10,37
SUMA (LMS from the university)	2,96	4,44	5,93	13,33

Using the same criteria used in the analysis of the item No. 2, we selected these 6 tools and extracted from the data the specific function associated with it:

Figure 14. Function associated to the ICT tools considered most important for learning

PLE Tool	Function
Blog	Information and self expression
Google Search	Searching information and useful tools
Google Calendar	Organizing the timetable and remembering important events or tasks
NING	Sharing information and debate about tasks with colleagues
Google Docs	Collaboratively editing documents with colleagues and having personal documents always available online
Mr. Wong	Organizing interests and important findings on the Web

If we compare the items 2 and 4 of this questionnaire (Figure 10 and 12), we can conclude, in both of them, that students emphasize the significant role of Google Docs, Google calendar, Blogs and Social Bookmarking (Mr Wong). Students had discovered these tools and –at the same time- they had incorporated those tools in crucial parts of their learning.

VII. Some conclusions and many questions for the future

From the data we have collected and from our experience carrying out this work we can assume some facts:

- Spanish freshmen, when arriving at university, have no experience –even knowledge- the use of ICT tools, apart from communication tools (social networking, email and instant messages) and are almost always associated with leisure time.
- Students from the first year of the degree don't think they use Web 2.0 (awareness), and even more, they don't believe that they use ICT tools for learning, even if they actually do.
- Students very much appreciate new ways of developing tasks and their course work.

- The great majority of students associates learning with acquiring information and some of them associate learning with memorizing.
- They value the ICT tools they discovered, seeing opportunities for Independency, collaboration, self-importance in the learning process.
- They also extremely value, useful tools which help them to plan their tasks, save time, simplify complicated tasks and, definitively, have fun.
- The vast majority of students have a basic perception of their PLE. Few of them don't relate tools with themselves, but only with their tasks, and only some of them go one step further by establishing more complex relationships between tools, contents, tasks and themselves enriching each other.

Nevertheless, these facts have some nuances we have to define and some thoughts about the experience itself.

Firstly, it is evident that every group of students is different, and there are too many variables associated with their context, environment, course, faculty, age, experience and so on.

Secondly, when they said they liked the opportunity to be independent, to collaborate with each other and to become important in the learning process, they associate all these opportunities with the tool. It is quite evident that it is not a question of the tool. Actually these tools could be used to do directive and individual or isolated tasks. Nonetheless Web 2.0 tools affordances are centered on collaboration and personalization and teachers, from the teaching and learning point of view, couldn't avoid them. Definitively, experiences of success related to the use of these tools in learning processes are associated with a mix between a strong learner centered methodology (vital) and a good catalogue of tools.

In the same way, we cannot forget the Novelty Factor influence. Students love these tools also because they are new. If we work in an introducing dynamic such as this, it is crucial to emphasize the significance of the tasks they carry out with these tools. It is not only a question of attracting our students to use ICT tools; it is a question of using them significantly.

At the end we tried to give to our students some mechanisms and tools to develop their own PLE in the future. This is only a step. We think they already have a PLE –in fact everybody connected has one-. Nevertheless in order to manage it efficiently and to enrich it, it is vital to be aware of it and start to consciously build it.

This has been only a course work. Hopefully it will be the first step on the way of improving the professional learning of our students based on their building of their own PLE.

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