RESUMEN

El proyecto TRAILER es un proyecto financiado por la Unión Europea en el marco del Programa de Educación a lo largo de la vida. El proyecto tiene como objetivo proporcionar una arquitectura para la recolección, etiquetado y reconocimiento del aprendizaje informal. Se ha desarrollado un componente que sirve como puente entre el Informal Learning Collector (ILC) y el Portfolio personal. El proyecto se propone proporcionar un marco para identificar, evaluar y valorar el aprendizaje informal. En las próximas secciones explicamos en más detalle el proyecto TRAILER [3][4] y identificamos el punto en el que puede mejorar el TRAILER [5][6]. Entonces, proponemos una solución para mejorar el proyecto TRAILER, explicando las decisiones de diseño y presentando los resultados (Sección 3). Finalmente, presentamos nuestras conclusiones (Sección 4).

1. INTRODUCCIÓN

Actualmente, existe un interés creciente en el concepto de aprendizaje a lo largo de la vida. En este concepto, se han identificado tres tipos generales de aprendizaje: formal, no-formal e informal. El aprendizaje formal se proporciona generalmente a través de la educación o el entrenamiento formal. El aprendizaje no-formal ocurre en un ambiente de aprendizaje informal. El aprendizaje informal se proporciona a través de actividades relacionadas con el trabajo, la familia o el ocio. No está estructurado en términos de objetivos, tiempo y apoyo. El aprendizaje informa puede ser intencional, pero en la mayoría de los casos es incidental. El aprendizaje informal ocurre de la vida cotidiana y continuará a lo largo de las vidas de las personas. Ejemplos de aprendizaje informal son el aprendizaje infromal que una persona comienza a nadar.

Hasta ahora, el aprendizaje informal ha sido ignorado y visto como un tipo residual de aprendizaje, pero esto está cambiando. La Unión Europea y la UNESCO están trabajando para promover todos los tipos de aprendizaje, dando especial atención al aprendizaje informal. El aprendizaje informal mejora la empleabilidad[1][2] y ayuda a las organizaciones a desarrollar nuevas habilidades para competir en el mercado global.


FREE [3] proporciona una herramienta interactiva para personas que trabajan con los desempleados, como consejeros, tutores, entrenadores y otros profesionales. Esto facilita a estas personas mejorar y obtener habilidades y habilidades blandas para proporcionar un mejor servicio a los desempleados.


El proyecto TRAILER [3][4] es financiado por la Unión Europea. Su objetivo principal es de forma fácil para poder identificar el aprendizaje informal que un aprendizado realiza y proporciona un conjunto de herramientas para ayudar a representar este aprendizaje. Esto puede facilitar la identificación, la evaluación y el reconocimiento del aprendizaje informal adquirido.

En las próximas secciones explicamos con detalle el proyecto TRAILER [3][4] y identificamos un punto en el que puede mejorar el proyecto TRAILER (Sección 2). Entonces, proponemos una solución para mejorar el proyecto TRAILER, explicando las decisiones de diseño y presentando los resultados (Sección 3). Finalmente, presentamos nuestras conclusiones (Sección 4).

2. EL PROYECTO TRAILER

El marco de diseño del proyecto TRAILER (ILC) es en un marco de ambiente de aprendizaje informal. El ILC está en cargo de recoger todas las Actividades de Aprendizaje Informal que un aprendizado realiza y proporciona una interfaz para agregar metadatos (etiquetas, comienzos, contenido de actividad, tipo de actividad y asociación con competencias específicas) a cada actividad. El Portfolio permite
the learner to make its learning visible, to create activity showcases and to export their informal learning in a formal curriculum.

The ILC allows sending Informal Learning Activities manually, with a bookmarklet or with a set of web services (see Figure 2). In the manual method the user enters the Informal Learning Activity directly to the ILC using a specific web-based interface. In the bookmarklet method, the user can add activities while he/she is browsing the net. In this method, some data is collected automatically from the net (title, url...) but other data needs to be entered manually (tags...). Finally, the set of web services allow external applications to get user information and register informal learning activities into the ILC. In order to ensure as much connectivity as possible, ILC supports the most common communication protocols.

We've noticed that the push methods (manual and bookmarklet) are disrupting the users’ current work activity. Also we received some negative user feedback related to this issue. Mainly, they found that entering Informal Learning Activities using the methods mentioned above was annoying as this action required a change in the context of their daily activities. Users found that the bookmarklet method was slightly better than the manual one because some data was registered automatically from the net. They agreed that the bookmarklet was their preferred way for introducing Informal Learning Activities into the ILC. In fact, from the usage statistics we have gathered, we’ve seen that 78% of Informal Learning Activities were sent using the bookmarklet method while only a 22% of Informal Learning Activities were sent manually (see Figure 3).

We also noted that some users were asking for more for importing Informal Learning Activities saved in other external applications into the ILC. That is, to add mechanisms to allow the ILC to connect to external applications, get the user saved data and register this data as an Informal Learning Activity. In short,
this is a pull based mechanism that can be implemented using the set of web services provided by the ILC.

3. CONNECTING THE ILC WITH EXTERNAL APPLICATIONS.

In our effort to improve the usability of the ILC, we considered adding a pull method for introducing activities. We studied the possibility to integrate a large set of external applications, extract data concerning knowledge activities from these applications and send them to the ILC as an Informal Learning Activity. This is a pull mechanism for registering data.

The idea of a pull mechanism is that the application retrieves information rather than asking the user to introduce it. This information is retrieved from other external applications. For security reasons, the user has to authorize the application to have access to any other external application. This must be done once for each external application.

While considering such an improvement for the ILC it is important to note the following issues related with how the data extraction from the external application is going to be done:

- First, and probably the most importantly, we need to decide which applications can be considered as data providers for Informal Learning Activities.
- Second is to decide which data from the external application is relevant to Informal Learning Activities and therefore should be recollected by the ILC.
- Third is to decide the granularity of the data recollected from the external application. That is, with which detail level the data is going to be recollected.
- And finally, is to decide how the data from the external application is going to be matched with the required ILC data for an Informal Learning Activity. It is important to note here that the matching will not always be a direct matching and that for some data or applications aggregation or simplification would be necessary.

3.1 Connecting with Pocket

We have designed a first prototype of a pull strategy for entering ILAs by connecting the ILC with an external application called Pocket.

Pocket is an application for saving articles and web pages in order to read them later. Currently, Pocket allows saving articles, videos or images from the web, tag, search and share them. It is available for the major operating systems (iOS, Android, etc.) and web browsers (Chrome, Firefox, Safari, etc.)

A stored resource (i.e articles, videos, etc) is called item in Pocket. For each item, Pocket application saves the title, the URL and a short description extracted from the net. The user is able to add tags, mark as favorite or mark as read any item of Pocket in order to better manage its reading list.

We have developed a new component integrated into the ILC architecture called “Pocket to ILC” (see Figure 4). It uses the set of web services to pull Informal Learning Activities extracted from the Pocket application to the ILC. With this new component, when the user enters into the ILC, the system displays a list of items extracted from his/her Pocket account. Then, the user can mark all the items he/she wants to send to the ILC. Once the user has selected all the items he/she wants to send to the ILC, the user can send them as Informal Learning Activities and the ILC saves all the activities.

![Figure 4. Pocket to ILC integrated method for sending Informal Learning Activities](image)

In our solution for this first experience we have taken the following decisions related to the data extraction from the external application:

- We consider Pocket as an external provider for Informal Learning Activities. We consider that the activity a user performs while navigating the net is an Informal Learning Activity. Therefore, the resource managed by Pocket, which results from the user’s navigation activity is an Informal Learning Activity.

- The Pocket to ILC component gathers the same basic information Pocket collects in each their items: Title, URL and Tags. As we have explained in the point above, we consider as an Informal Learning Activity the activity a user performs while navigating the net. Then we recollect the Pocket information of each item related to the navigation activity which at the same time is used to easily identify and recover any of the Informal Learning Activities of the user.

- We decided to gather the information as stored in the Pocket application without additional aggregation or simplification. Our component does not consider additional information of a Pocket item such as description, observations, favorite or read status. The main reason of this decision is because such comments and annotations may be different from a learning point of view (ILC) than from a simple recorder of Internet resources (webpages, images, videos, etc.) like Pocket. Also, with the ILC interface the users can make their own annotations and descriptions for each Informal Learning Activity.

- Finally, our component obtains the basic information from a Pocket item, which it matches perfectly to the required format of the basic information of an Informal Learning Activity stored in the ILC.

3.2 Results

In order to get user’s perception about this new way to register information into the ILC (pulling mechanism), we have run a pilot. We have released the developed component, the Pocket to ILC, and asked the users, during one week, to use the ILC for registering Informal Learning Activities. They had available the two push methods (manually and bookmarklet) as well as the pull method (the Pocket to ILC component) for introducing their Informal Learning Activities.

After that week, we conducted personal guided interviews the user feedback for the new pulling method. All users valued positively
the pull mechanism. In fact, when we asked users to rate the new component on a scale of 1 to 10 we get an 8.2 of rating average (see Figure 5).

In regard to the work disruption, all users found that the new method for entering Informal Learning Activities was less disrupting. In fact, when we asked users to value on a scale of 1 to 10, being 1 very disrupting and 10 no disrupting, we get an average of 7.6 (See Figure 5).

![Figure 5. Average of users rating](image)

Other comments received form users where:

- Being notified about Informal Learning Activities by the ILC is a good improvement: “... I would rather prefer to enter into the ILC and get a list of Informal Learning Activities, check the ones I want to send as learning... for me is less work”

- The new method is less tedious: “I save resources for reading them later with Pocket. All I read is there. So, if the ILC lists me my Pocket resources I’m almost done with few clicks. Easy.”

- A more automatic method: “I don’t have to look for Informal Learning Activities I’ve done anymore. ILC just lists me my learning activities. Of course they should be saved in Pocket, but before this new functionality I had to enter most of them manually.

4. CONCLUSIONS

Historically, informal learning has been undervalued and seen as a residual concept: a type of learning that is not formal neither non-formal. Therefore, informal learning has never been treated as a type of learning deserving to be managed or validated. Increasingly, organizations are being aware that the informal learning is essential in a global market as this learning is translated in skills, competences and know-how of their workforce. Also UNESCO efforts are to give visibility to the informal learning and to propose frameworks for validating this knowledge.

These reasons have led to the development of several tools in order to manage informal learning. One of them is the TRAILER project.

We have seen that the TRAILER project [13] [14] facilitates the identification of informal learning activities but that can be still improved in usability terms. At first, the main way users had for adding Informal Learning Activities was with two methods based on push mechanisms. These methods were useful, but we have seen that the users prefer more guided and automatic methods. In order to lighten the tasks related to introducing Informal Learning Activities into the ILC we proposed to add a new method, using the set of web services. This new method was a pull mechanism allowing to get data from other external applications. Then the user only has to select which Informal Learning Activities recollected from other applications wants to save into the ILC. We decided to implement a first pilot connecting with the Pocket applications in order to test this new method.

According to the feedback received from the users we concluded that adding such a mechanism improves the ILC usability. Users are more willing to use the ILC when the data entry is simplified and requires less effort and time for them.

This new pulling mechanism is useful but opens new questions and problems that should be addressed:

- To be able to notify the user the total number of Informal Learning Activities available; this mechanism should be implemented for a large list of external applications. It is difficult to known, a priori, which other applications individuals are using in their informal learning process.

- Each external application stores different data and with different granularity. The matching between external application data and ILC data could not be so direct like in the Pocket case.

- It should be studied which data is going to be recovered from the external application, obtaining directly from the external application only those activities that are relevant for the ILC portfolio.

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5. REFERENCES


