Managing Informal Learning in professional contexts: the learner's perspective

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Abstract. Informal Learning is present in everyone's life but its awareness only recently has been reported. The need to keep track of the knowledge acquired this way is increasing as its sources diversity also increases. This work presents the pilots trials on the use of a tool developed to help keeping track of the learners' informal learning, within a number of companies spread out in three countries. This tool developed through the European Commission funded project TRAILER, is still under development, which will allow integrating the set of improving suggestions obtained from users during the piloting phase. The overall idea of managing one's informal learning was well accepted and welcomed, which validated the emerging need for a tool with this purpose.

Keywords: informal learning, curricula management, competences, recognition, motivation, knowledge management

5   Introduction

The distinction between formal, informal and non-formal learning started being fostered in mid last century [1-2]. According to recent studies, informal learning (IL) can account for over 75% of one's continuous learning through life [3-4]. Even though most of the methods of developing IL were always used, their awareness as far as contributors to learning and enhancer of competence development is more recent [2].

Most companies still focus only on formal learning programs loosing valuable knowhow employees develop [3]. Nevertheless, in companies many practices have been reported in literature as being equally or even more productive, such as informal

meetings or simply coffee breaks [4]. In fact, there is a paradox referenced in literature [4] that argues that companies spend 80% of their money effort to re-qualify their employees in formal learning workshops and courses, while 80% of what their employees are really learning, they do it by themselves in activities that involve IL. This implies that only 20% of that money spent was actually well spent. Jay Cross [4] argues that since IL initiative starts from the learners, they become more responsible, which makes it more effective. This author sustains that employers should create a supportive organizational culture helping employees to develop and improve their skills, supporting IL processes within companies. Since todays' challenges are increasing and both, employees and employers, feel the need to work in a more productive way than before, while competitive pressures drive them to be more organized and more rational [5, 6], IL developed by employees naturally should be enforced and credited for. In fact, since employees and employers can both benefit from IL, it is important to watch and harness the informal methodologies that employees are already using to develop their competences and expertizes [2]. In order to understand the learning in an organization, the first step will be to recognize IL already taking place and then make it visible to that community in order to potentiate liaisons, exchanges or collaborations that otherwise would be more difficult to visualize. This is the aim of TRAILER project [7].

TRAILER [7, 8] is an ICT multilateral (two years) project funded by the European Commission, started on January 2012, with the aim of developing an innovative ICT-based service working in two (complementary) fronts: employees and employers [7]. It allows employees to identify evidences of IL and link them with competences being developed. These learners will then choose which ones will be relevant to make visible to their employer. The employer will afterwards work upon this information in order to support knowledge management and/or human resources management within the company. This work analyses and compares a number of companies in three countries by using a group of learners from the contacted companies which were involved in the pilots testing of the TRAILER project technological framework. Section 2 of this paper starts with a summary of what learners can expect from their interaction with the tool, followed by a description of the methodology used in the pilots testing and its population characterization. The obtained results and their discussion are presented in Section 3, organized in three topics: usage, the TRAILER idea and participants' IL profile. Finally, some conclusions are summarized in Section 4.

6   Methodology and cases description

6.1   The TRAILER project technological framework: learners' perspective

As already stated, this set of tools is structured in two perspectives. Although a brief statement of the aim of the institutional perspective is needed to framework the learners' perspective, this work is only focused on the latter and its results obtained from the group of companies collaborating in the pilot trials. The TRAILER project technological framework [7, 8] is an integrated environment where the institution defines a set of competences considered important for their mission or purpose. These

competences can then be seen (and used) by learners within their TRAILER accounts.
From here onwards, the term - institution - implies the stated context.

As said, the aim for learners is to collect evidences of Informal Learning Activities
(ILA's) related to the IL they are gathering and, at the same time, associating it with
competences being developed. This process can be undertaken in two stages: first,
collecting ILA's and secondly, further describing and associating competences to
those ILA's. The tool also provides a "peer recommender" option, showing people
with similar competences to the ones defined by the learner. This feature is most
useful to find people with the learner can somehow collaborate with.

1.1 Methodology of TRAILER implementation

One of the objectives of the TRAILER tool testing was validating the TRAILER idea,
as well as assessing the learners' perspective and acceptance on using this type of tool
to organize their IL. The TRAILER project technological framework testing consisted
on allowing the pilots institutions to explore it in the learner's perspective during
approximately one week, with a set of tasks to be accomplished during that period.
This period started with a hands-on introductory workshop, where it was explained
how to use the tool, which was attended by the expected learners (employees who had
previously agreed to participate in the trial). These workshops were conducted
separately in each institution. The testing period ended with a focus group meeting to
discuss their perceptions and experiences and to gather their suggestions. This
meeting was planned to gather not only information about the perceptions on IL but
also information related to usability, usefulness and friendliness of the tool. These
issues were also addressed in pre and post questionnaires answered by the learners in
the beginning of the workshop and before the focus group discussion, respectively.
During the whole testing period, each learner's activity was registered in the platform,
gathering information to characterize the users profile for each institution, frequency
of use, IL provided evidences and associated competences, and also, at some extent,
try to assess the learners' will to publish personal information.

1.2 Methodology of Analysis

This analysis is based on a study case research. There are five cases from professional
institutions (companies) for which results will be compared in this work.

Even though the professional working areas of these companies are different (see
Table 1), four (out of five) groups involved deal directly or indirectly with
informatics. PT_C and S2_C are technology-based companies. It is important to say
that one of the institutions belongs to a military training facility (S1_C2) and the
related group of participants was enrolled in the Virtual Learning Environment (VLE)
Program, even so quite familiar with computers and learning technologies. S1_C1
represents an informatics department. Only the polish company (PL_C) has a line of
work somewhat different since it mainly deals with management and consulting. In
terms of dimension, three companies are small, with less than 15 employees (PT_C,
S2_C and PL_C). S1_C1 together with institution S1_C2, are both part of big state
offices, with a large number of employees. In all of them, almost all employers had a

university degree and some also had an MSc. All groups of participants have ages between 26 and 40 years old, apart from S1_C2 participants (military context) which are older (41 - 60 years old). In order to establish a dimension comparison level for all the institutions, in this work each institution universe is considered the number of participants who intended to participate and, each institution sample is the number of those who actually used the tool.

Table 1. Companies pilots trials characterization

Company Pilot for Employees (E)		
PT_C	**S1_C1**	**S1_C2**
Context: Engineering – Space, Energy, Transports and Health	Context: City Council – Informatics Department	Context: Military –training (VLE courses)
Dimension: 12 E	Dimension: 1063 E	Dimension: 900 E
Typically with a degree or MSc	Typically with a degree	Typically with a degree
Ages: 26-40 years	Ages: 26-40 years	Ages: 41-60 years
Universe: 11 E	Universe: 7 E	Universe: 67 E
Sample: 11 E	Sample: 4 E	Sample: 11 E
S2_C	**PL_C**	
Context: Engineering - ICT Specialists	Context: Training - Consulting and Management (administrative workers, professional trainers and informatics)	
Dimension: 10 E	Dimension: 13 E	
With high school or a degree	Typically degree or MSc	
Ages: 26-40 years	Ages: 26-40 years	
Universe: 10 E	Universe: 13 E	
Sample: 10 E	Sample: 10 E	

The data collected during the pilots was related to different sources of evidence, in order to enable triangulation of results [9]. Quantitative data was collected from the platform usage, characterized by several parameters. Qualitative data was produced from the focus group sessions for each case (company) held at the end of the piloting week. Data from pre and post-questionnaire was processed in order to assess participants IL perception modifications.

2 Results and Discussion

2.1 Learners usage characterization

In a prior phase of the pilots' trials, each employer was contacted and invited to participate in the pilots' phase of the TRAILER project and was asked to choose a group of employees willing to participate in this type of collaboration. Table 2 shows the participants who accepted the invitation (previewed) and those who were actually present at the introductory workshop. Only one group (S1_C2) had problems in complying with what was previewed showing a dropout percentage of 81%, which may be explained by the difficulty in scheduling both the initial and final dates for the pilots trial. On the other hand, taking into account those participating in the workshop, in average, 76% were considered "active users" as 24% were considered dropouts (in

this phase). Being an "active user" implies collecting ILA's (in the 1st stage) and describing them and associating competences (in the 2nd stage). There were two critical cases each with almost 50% dropouts – S1_C2 and PL_C – again, for the former scheduling difficulties were the reason, but for the latter, no apparent reasons were brought up. To classify the learners' usage effort, the number of ILA's collected in the 1st stage and worked with in the 2nd stage was registered per learner (i.e. user) and the average number of ILA's per learner was calculated (Table 2). A common profile observed in all the pilots trials, was that users collect a lot more ILA's in the 1st stage than the number of those they work with in the 2nd stage. These results show a poor usage (below average) in all the institutions with the exception of employees from the city council (S1_C1), collecting an average of 12.5 ILA's per user, which is almost twice the global average for all institutions (see Table 2). Also, considering the 2nd stage, this trend is maintained in spite of the number of ILA's worked with in this stage being in average only 64% of the total in the 1st stage. The low usage can be explained by the fact of not being fully aware of the importance of registering ILA's and their associated competences, but also with the difficulty of integrating the usage of this tool in their daily routine during a period which was later considered by themselves as too short for the intended purpose.

In order to have an idea of the amount of work learners put in characterizing their ILA's, namely by associating competences, the number of competences per ILA for each collaborating institution was collected. Comparing them to the overall average of 2.3, only the military are well above this value. Apart from this case, in general, the groups of learners associated 1 or 2 competences to each ILA.

Table 2. Learners participation in various stages interaction

Institution	TRAILER tool pilots testing									
	Previewed	Users	%	Active users	Non-users	1st stage ILA's	2nd stage ILA's	%	1st stage ILA's per user	2nd stage ILA's per user
PT_C	11	10	91	8	2	52	26	52	5.2	2.6
S1_C1	4	4	100	4	0	50	41	82	12.5	10.3
S1_C2	69	13	19	9	4	70	43	49	5.4	3.9
S2_C	10	10	100	8	2	59	42	61	5.9	4.7
PL_C	11	9	82	6	3	45	26	81	5.0	2.9
Totals	*105*	*46*	*44*	*35 (76%)*	*11 (24%)*	*276*	*178*	*64*	*6.0*	*4.1*

Even though this way of measuring the amount of work put in the usage of the tool allows differentiating between learners, another meaningful input is gathering information about the average number of interactions per user per day and the absolute maximum number of interactions in a day (within the 2nd stage), for each institution. This can also be correlated with the average number of days of use and its absolute maximum number, for each institution. Comparing all these results, in general all the institutions had a similar performance in their 2nd stage interaction, with close to average number of interactions per user per day (23.1±5.8). But tracing

this average with the maximum number of interactions in one day, the highest dispersion of results appears in the military group (S1_C2), where one learner had 133 interactions with the tool. In spite of it, this group used the tool for more than two days (2.4 days) which is above average (1.9 days). Somehow surprisingly, if considering the business area, is the case of S2_C with an average of 1.2 days of use and a maximum of 2 days. Almost everyone had the opinion that only one week to work with the tool was a too short period. They referred that they ended just testing it and not really getting engaged and constructing something that could be more resembling of their profile in terms of their IL developments.

Regarding the learners' assessment of the tool based on their usage, they helped identifying some particular issues they considered the tool would need improvement. These were mainly usability related enhancements (e.g. simplifying some issues due to time consuming and too much detail while describing activities and competences) and improving its user friendliness. Curiously, it was the two state department groups who considered the tool more facilitator in terms of visibility and presenting their IL. In all the questions, the lowest score was found for the group with an area of business not so much related with ICT (PL_C), even though in focus group session they did considered it professionally useful in order to "collect the team with the appropriate competences". On the other hand, this group is one of the cases that refer that an interface to work on smartphones or androids should be developed. In a broader perspective, results for PL_C might also be related to an issue reported in focus group: they questioned the transparency of the tool regarding the use of competences definitions, which might be named differently by different users, by the simple fact of using distinctive words. This problem with synonymous competences might generate difficulties or even biases, if not properly taken care when employers use this data.

As said before, learners decide whether or not to make their competences and ILA's public to others. In evaluating this aspect, which somehow exposes their personal information, it could be found that the great majority (88%) of the collected activities are not made public. Learners have used the tool as a personal record facility, rather than a communication platform between them and their employers through their published activities. At least at this stage, employees want to keep their activities for themselves. This was a common feature in all the institutions involved with the exception of the military group, where, even considering they are trained to follow orders and obliged to a certain discipline in pursuing objectives without questioning, the obtained ratio for published (40%)/not published (60%) was of 2/3, is not too high. Another possible interpretation for these results is considering that all the learners realize they could use the tool only for personal use, for organizing and managing their IL evidences and associated competences. When looking at competences, they are much more keen on sharing them (46% are published), maybe because they understand it could have some impact on the type of tasks they are assigned to do, or even to be chosen to embrace new projects requiring new competences. Even so, 77% of the user defined competences are published when compared to 39% of the ILA associated competences, indicating that when learners are willing to introduce new information they have a higher predisposition to publish those competences. From these results two cases stood-up both representing state department companies. Both, S1_C1 and S1_C2, published over 90% of their user competences, which for the ILA associated competences is considerably different

only for the city hall group. At the same time and still related to competences, it can be shown that learners tend to choose competences from the competences catalogue (86%) rather than define new ones themselves, which is understandable since user defined competences lack validation from their employer. In the approach of this tool, validating a competence means only that the employer accepts it as of interest for the company.

2.2   The TRAILER idea

Even though the company participants have caution stating their recognition about their IL, their answers in the post questionnaire became more coherent, in some cases showing a lower standard deviation. This could indicate that through the work performed during the piloting week, participants not only tend to better acknowledge their IL, but also in this case, it helped participants who had more reserves about it.

In fact, this rather level of recognition is in agreement with the goals each institution' employees state they seek when they develop IL. The company who states a better acknowledgment of their IL (PL_C) is in fact the company who scores higher in the analysis of specific goals, apart from the goal "amusing myself". In this item, the ones scoring higher are institutions more directly related to ICT tools, where perhaps the use of videogames in order to learn is more common.

The usefulness of a tool like this is, in the overall, seen with a medium benefit, but even so the majority of participants were willing to work with a tool like this in the future because they could sense that this kind of tool could indeed be of a personal and professional benefit. However, as some participants said *"a regular use will require time until it could be incorporated in our daily routine, but only then we will be able to see its profits"*. And also *"when its usage within an institution will already have meaningful content of the overall of the employees, will we see its full potential"*. In both questions, S1_C2 participants showed a higher receptivity to the idea, but the only case that stands below average is PL_C. This data is in accordance to what was reported in the focus group session, where participants stated that this unusual process of gathering and analyzing their IL could be very useful and, particularly, with high impact in knowledge management. Looking at different ways participants used to develop IL, "reading" scores very well, as "searching in the internet". This does not present novelty towards what was anticipated, but regarding "watching other people" or "conversations", it was expected higher scores for company environments. After all, the majority of employees use this type of IL on a regular basis, talking to colleagues, discussing problems, seeing how other colleagues solve some issues, etc. So, either learners do not realize they are doing it often, or, they do not realize they are learning while doing these activities. Either way, this reveals that their IL perception and its importance on their daily professional activities can still be improved.

3   Conclusions

The TRAILER idea was successfully accepted by the learners, who considered a good way of collecting, recording and sharing IL that, otherwise, could easily be forgotten.

Professionally, several benefits were reported such as being helpful in managing competences within an institution as well as for human resources. However, the results show that from a learner point of view, the importance IL recognition and its usefulness in their daily professional activity can still be improved. From a personal point of view, participants agreed that in its current state, the tool was a little too time consuming, but nevertheless, in general they would like to try an improved version of the tool for a longer period, in order to get some more content and be more able to potentiate its usability. Also, since using this tool demands integrating it in the learners' daily routine, the trial period should be extended. Learners also shared some concerns regarding the use their employers could make out of their IL. This was a real constraint in order to fully understand the TRAILER objectives because it still lacked the way around: the employer feedback about their IL and the benefit they may take from it. These difficulties might have had some impact in the low level of usage observed during the pilots' period. Nevertheless, the overall receptivity was highly positive, especially from the two companies having their business related working area, and important remarks and suggestions were identified for further tool improvement and usability.

Acknowledgments

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