MEASURING THE IMPACT OF AGILE METHOD DEVELOPING LEARNING OBJECTS

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ABSTRACT

This study is about a practical contribution called Agile Method developing learning objects (MADOA in Spanish) to assist users to develop learning objects. It has a guide as an instrument that allows professors to increase their productivity.

MADOA uses "open source". We use eXelearning as the content editor and the Moodle platform is used for publishing LO. Hence, a standard like the Sharable Content Object Reference Model (SCORM) is needed, this provides an efficient metadata definition for learning objects to be searched and shared.

We use SCRUM for project management. Now our interest is how to measure productivity using MADOA?

Keywords: Agile Method, Learning object, Productivity

1. INTRODUCTION

This document presents a model for measuring the impact of Agile method developing learning objects. MADOA is described in three steps: Firstly a prototype has been developed, the same that has been used to elaborate the instructions manual. Secondly, the prototype has been shown to a specialist for the required replica, it is worth mentioning that reuse is a characteristic of the learning object. Thirdly, the IT specialist has made visible the metadata for this edition and publication, through the support of two students from the entrepreneurial logistic course.

All of the above steps require an agile team, if there is access to the internet the tools are at our disposal. Nevertheless in a society where the individualistic culture is dominant and where surroundings are uncertain, organizing long term work teams is complex. This is when agile teams give better results, teams made up of teachers and students: the former provide experience and the latter their agility in the apprenticeship of new tools. What are the advantages of working this way?

2. AGILE METHOD DEVELOPMENT LEARNING OBJECT (MADOA),

It has developed 7 learning objects for simulation course, using eXelearning for the edition, then it has been exported to SCORM (Sharable Content Object Reference Model) for publishing at the platform MOODLE. A SCORM package is a collection of files which are packaged according to an agreed standard for learning objects.

For the project management we apply the Agile Method SCRUM, we form four agile teams, the first team has developed the prototype planning materials requeriment (mrp) like Learning Object (LO mrp). The second team has edited the 7 learning objects, the third team has described the process, repeating the method and showing a LO in shopping to elaborate an instruction manual and give this material to the fourth team that developed a tutorial video [1] [2] . I agree with Huang, Tsai, Dai [3] "the mayority of the learning web sites don't have the convenient tools in the packaging information that the users need; that is the reason that makes difficult the exchange of the information that is published in the web sites, they don`t allow to be taken or reuse"

The choose material that`s going to be published correspond to the professor, however, it is need to be reviewed by others, in this way the audience won`t be only the students of that professor, but also the 3 or 4 other sections. In the developing projects of the LO you must count with a pedagogically adviser, who suggest, what kind of education strategy must be used according to whom is addressed. That why is necessary to form a team between professors and students.

3. ACTIVIST OF KNOWLEDGE AND AGILE TEAMS

To generate value requires to be entrepreneur, to be initiative, where one of the main elements is the people. The people that check the development of (LO) must have activist of the knowledgment profile. Must have competence to be a catalyst, coordinator and the trader (Table 1). Must keep in mind the 360° motivation as a motivation intrinsic and motivation extrinsic [4]. According to Bešić y Đorđević [5], <<The biggest resistance to creating knowledge culture comes from the idea that the knowledge is power-*people who know are more powerful than those who do not know. The replacement of that understanding comes from the following idea-the power is in knowledge trade. The future success will depend on the ability of the organization to use collective power, which is a group of accumulated opinions, perception of experiences, intuition and intelligence. Everything becomes even more important when the main problems of domestic companies are taken in account: inadequate treating of investment in knowledge, and disregarding international experiences >>.*
The capacity and the experience of one person will allow to change the significant information to change the information in knowledge.

Table 1. Profile of the abilities of the activist of the knowledge

Catalyst	Coordinator	Negotiator
Motivation**al** abilities.	360° motivation abilities.	Extrinsic motivation capabilities
Interpersonal skills.	Teamwork abilities. Broad social network inside and outside of the organization.	Negotiation capabilities inside and outside the group
Intervention skills: Enhancement of group dynamic and group relationships.	Visual and cartographic skills: Develops and preserves shared maps of cooperation	Narrative abilities: Detects formulates and showcases explicit knowledge.
Analytical skills: It helps the team to elaborate a register of their tasks.	Analytical abilities: IT establishes relationships between the initiatives and the creation of knowledge.	Broad knowledge of the process of the organization strategy.
Knowledge in operating the business, key products and markets.	Knowledge of historical development and institutional memory.	Ambassador of the vision of knowledge of the organization.

Adapted from Von Krogh, Ichijo and Nonaka [6].

4. MODEL OF MEASURING THE IMPACT OF AGILE METHOD FOR DEVELOPING LEARNIG OBJECTS

Why we do measure the impact MADOA?. Because we generate spaces physical or virtual of work, where the conversation, social media will happen in a natural way and not for imposition hierarchical, but for an intrinsic motivation. Fitz-enz [7] "when we talk about measure the value of the people, we must recognize two aspects of this concept: the economic and the spiritual … only the people generate value through the application of the intrinsic humanity, their motivation, the learning technics and the manipulation of the tools."
Schreuder Deryck [8] <<*it is important that it considers university productivity not against short term output measures but against the long-term impact of university teaching and research…Staff-student ratios in Australian universities have increased from 12.9 students per university teacher in 1990 to 19.4 students per university teacher in 2001. As a result, students now have less contact with staff and conversely it can be said that each staff members is more productive.*>>

In figure 1. There are some supplies that the teacher needs, to make the process of teaching apprenticeship effective. There is an input of materials, it must have an information center or resources of apprenticeship and research (CRAI), not only as a physical infrastructure, but as a technological infrastructure that is managed with agility. The output is the learning object. A learning object is a "packaged resource" that has the purpose of apprenticeship, created for the increase of knowledge, and also created to motivate the student towards analysis and reflection. At the same time, it must promote attitudes and values in an implied manner, facilitating self-learning and self-evaluation.
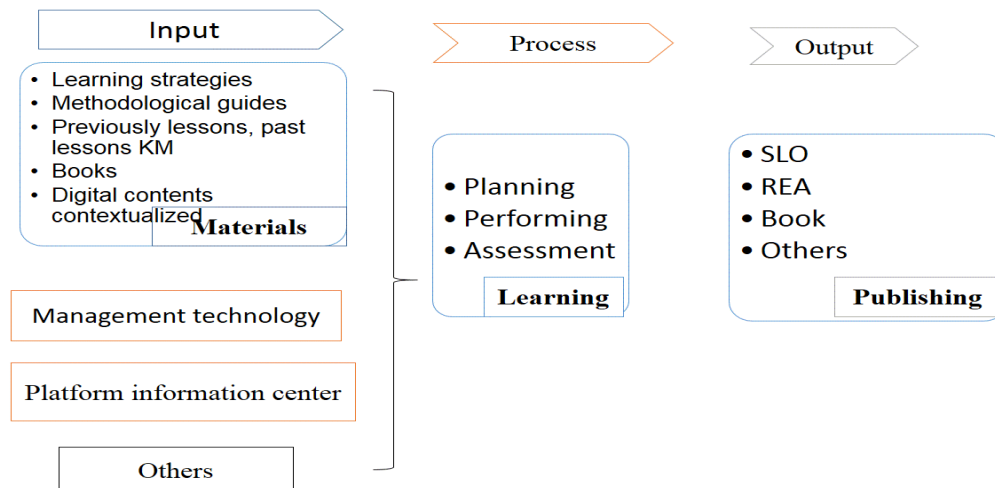

Fig 1. Supply chain and Systems learning objects (SOM)

At a micro level, productivity is measured by the man-hours of the professor dedicated to different activities, amongst others preparing for class, if the learning objects are reused the dedication to this would be less. On the other hand it helps the interaction of the members of a department or academic area; moreover the individual objectives must be in accordance with the department it belongs to.

The process of apprenticeship requires two actors, teacher and student, the first must plan, execute and evaluate a class. How much time is dedicated to planning, to the revision of educational material, to its scope, is it valued in diverse ways? In Peruvian national universities it varies from 20% to 30% of the contact hours, if there are 12 contact hours preparation will be from 2.4 to 3.6 hours.

5. IMPACT

It was announced in class that the students should revise LO mrp (there was no assessment for this), within a 48 hour period where two groups, Group A: with direct access to the virtual classroom of the course. Of the group of 13 students only 6 attended, and of the 6 none reviewed the product within 48 hours. Group B: of the 30 students, 23 attended and only three reviewed the product. Historically, the attendance of students after exams is 35%. They prefer printed material. However the members of the last semester were very interested in collaborating with the creation of the learning objects, and one of them has formed a group in Google.

6. DISCUSSION

Parra [9] developed 13 learning objects with XP (Extreme Programming). Weiyong Zheng [10], in his research work, he focuses on the design and on carrying out systems that manage educational resources/ Educational Resource Management (ERM), based on the apprenticeship of metadata of objects. THE SYSTEM: can run with the operating system of Windows and not with Linux; it cannot realize distributed operations and adopts the database of SQL server. Sutherland, et.al [11] reviews offshore Teams. Hoda[12] describes Self- Organizing roles. Braunm et.al e-book technology. [13]

7. CONCLUSIONS

The teacher can choose between making the learning objects, having them made for him or reusing them, even if there are text editors; to package and publish them requires resources to have visibility

on the web and to make them accomplish their functionality and characteristics like: interoperability, reusability, amongst others.

For teachers to increase their productivity, they require that the institution organizes or manages a repository that guarantees the storing, recuperation and online publishing of their educational material. Therefore, it is necessary to have IT professionals and engineers that have knowledge of educational technology.

8. ACKNOWLEDGEMENTS

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