ABSTRACT

This article describes a spontaneous Peer learning process in the context of an e-learning follow-up course for e-tutors, addressed to former trainees of the MAIB Master of Science program, members of the institutional Alumni Network.

The collaborative-constructivist method applied in a context of adult participants creates favourable conditions for setting up a community of practice that shares common interests and stimulates the members concerned to interact in a constructive and open-minded approach, while still recognizing the essential role of the teacher and/or tutor in the learning process.

The process came up within Discussion Fora of the course delivered on MAIB e-learning platform where significant contributions have introduced additional information to the course contents. The careful examination of all contributions and the analysis based on appropriate criteria has enabled recognising the so-called Episode or value-added posts. It may be deduced that the occurrence of complete cycles of different types of Episode posts in different modules of the course can prove the actual implementation of Peer Learning.

Social awareness is a key-component of e-learning, inducing participants to an increasingly important interaction in collaborative learning. Actually, the above awareness, developed in a well-disposed learning group, often produces very interesting exchanges of knowledge and personal experiences between the members of a peer-to-peer study group.

This social dimension conveys information more effectively, by strengthening both individual and collective learning.

Then it will be necessary to complete the knowledge management process using techniques and tools to support peer assessment.

KEYWORDS: Community of practice, Episode post, Peer learning, Peer learning occurrence, Social awareness.

THE CONTEXT

It is an e-learning course for online tutors, addressed to 16 governmental and non-governmental officers from Southern Mediterranean and Balkan countries, members of the MAIB Alumni Network. To ensure the best and most user-friendly utilization, the course has been delivered through a Learning Management System platform (Claroline © 2001-2010) suited to the applied methods.

1 Received: 20 February 2015 - Revised: 10 March 2015
method. The proposed contents were structured into low cognitive impact modules thus favouring a Personal Learning Environment specially focused on socially responsible adults. To favour the highest flexibility in time for asynchronous collaborative activity, the forum environment was indicated as the main communication tool, taking into account both geographical distances and time zones. The collaborative-constructivist model applied enabled combination of different aspects: self-learning, self-evaluation and above all online peer interaction, which is an expression of peer learning, a typical form of distance learning in Communities of Practice (CoP).

THE TRAINING COURSES FOR E-TUTORS ORGANISED BY MAIB

Over the last decade MAIB has organised 4 courses for e-Tutors addressed to technicians and officers from training and agricultural research institutions of Southern Mediterranean and Balkan countries, and has trained 71 e-Tutors (see Table 1).

<table>
<thead>
<tr>
<th>YEAR</th>
<th>N° of PARTICIPANTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003</td>
<td>21</td>
</tr>
<tr>
<td>2006</td>
<td>10</td>
</tr>
<tr>
<td>2009</td>
<td>24</td>
</tr>
<tr>
<td>2014</td>
<td>16</td>
</tr>
<tr>
<td>TOTAL</td>
<td>71</td>
</tr>
</tbody>
</table>

Table 1. Number of participants to the 4 e-Tutor courses

The MAIB e-Tutor course programmes, delivered by subject-theme experts, have dealt with pedagogical, socio-relational and technological aspects.

Taking into account the applied collaborative-constructivist model, in accordance with the skills described in the literature, the MAIB e-Tutor has been invited to address themes related to the following activities:

The MAIB e-Tutor course programmes, delivered by subject-theme experts, have dealt with pedagogical, socio-relational and technological aspects.

Taking into account the applied collaborative-constructivist model, in accordance with the skills described in the literature, the MAIB e-Tutor has been invited to address themes related to the following activities:

- Support to correctly carry out course assignments
- Encouraging socialization and cohesion among the members of the group to stimulate their interaction
- Technical support and mediation with the trainer
- Maintaining high interest and motivation of students

Through these courses MAIB has made an investment that has enhanced human resources,
also in economic terms. “MAIB’s strategic choice to invest in training and in the subsequent targeted use of tutors has produced an economic advantage (benefit) that is expressed both by the low dropout rate in the courses and the return on investment (ROI) theoretically estimated by a general cost/benefit ratio in a long-term period (2004-2012)” (Sisto et al., 2013).

**Peer Learning and Adult Needs**

Peer learning is an innovative approach coming out of cognitive psychology and applied to adult education. Peer learning is suitable where traditional teaching/learning systems are unfeasible, e.g. academic peer review, organizational learning, and social network in community of practice (CoP). Collaborative learning is actually an expression of peer learning where learning itself is perceivable and responsibly incorporated in educational activities. However, in the case of adults, the following issues should be taken into account (Knowles, 1996):

- **Adults need to know why they should learn.** They take time to analyse what would be their personal benefit, before starting the learning phase. The educational pathway should be consistent and include training goals applicable to professional activities. It would be wrong to constrain learners in training activities before they perceive the need for learning. Adults should perceive the need for education before it takes place.

- **Adults have a deep need of “self-directing”.** The adult is psychologically defined as the person who has realised a concept of himself/herself and is responsible for his/her life. The notion of self-directing suits better an adult student because it differs from self-learning. Self-learning means that students study by themselves. Self-directing, instead, involves students more responsibly through autonomous research activities oriented towards professionally relevant specific subjects (motivation).

- **Adults have a greater experience than young people.** Adults bring in learning environments a wide-ranging experience that is a great resource and the main source of self-identity. This leads to a good teaching planning that considers theoretical aspects as related to experience.

- **Adults enter a learning experience for a purpose (problem-centered or life-centered).** If the training course is focused on the problem solving approach, adults will certainly learn in trying to face the problem.

- **Adults are stimulated to learn by intrinsic or extrinsic motivation.** Adult students respond positively to extrinsic motivation (advancement, bonus, etc.). However, the strongest motivation is the intrinsic one, arising from self-esteem and accentuated by the perception of power and success.
COMMUNITY OF PRACTICE (CoP) AS A PLACE OF ADULT LEARNING

“The community of practice formed by adults creates the social fabric for learning” (Wenger et al., 2002). The community is a group of people who learn and interact together, build relations resulting in a sense of fellowship and mutual commitment. The same authors define the CoP as “groups of people sharing a concern, problems, passion for a subject, an interest to explore”. In 1998 Wenger had already written that a CoP is a kind of “society of understanding” that is re-negotiated continually by its members and acts by coherent and mutual commitment as a social entity that can produce shared resources accessible over time. There are, however, three structural elements of the CoP that are applicable in social networking environments (Wenger et al., 2002), i.e. domain, community and practice. Authors underline that when these three elements work well together, the CoP may be considered both as a “structure of knowledge and social structure”. This structure, tasked with “developing and sharing knowledge”, contributes to the so-called “collective intelligence” (Smith, 1994), via co-creation, co-editing, and co-construction.

LEARNING, COMMUNITY OF PRACTICE AND TECHNOLOGY APPLIED

The first e-learning systems in 1970 were based on a shared technology like the mainframe computer, and e-learning involved little or no interaction and dialogue (Sherman, 2000). In 1990 the first web-based training (WBT) technologies were explored (Culwin, Marshall, 1996) that involved teaching material delivered by tutors to students. They were followed by the first web-based Learning Management Systems (LMS), equipped with integrated systems to support social interactions (Dillenbourg, 2000) among persons from different ethnic groups, professional positions and points of view (Mason, Rennie, 2008). LMS take inspiration from robust educational theories, although it remains difficult to translate concretely educational principles into effective tools and e-learning techniques. Great opportunities are now offered to online instructors and trainers by wiki tools and social media. Wiki tools are considered the best means of collaborative editing and the social media are a large shared space, by which participants share ideas, knowledge and stories. Thanks to the ICTs, it is possible, either individually or in group, to choose a sustainable technology (open-source and/or user-friendly) and develop online communities targeted towards genuine knowledge management. However, technological tools are only a small part of what is required to build a functional online learning community. The social networking currently enables an extraordinary enlargement of knowledge through the Web 2.0 or Social Web technology that makes possible communication in any place and at any time. Some authors support that the current ICTs have changed the learning scenario so that the three pillars of the theory (behaviourism, cognitivism and constructivism) are no longer appropriate to the present time. MAiB, in applying the TPACK (Technological Pedagogical Content Knowledge) model, also highlights this trend showing the advantages derived from the use of an LMS system as an appropriate environment to develop all composite skills applicable in the learning process (Lorusso et al., 2013).
The role of *social awareness* in collaborative e-learning has been recently investigated (Lambropoulos et al., 2012). The social awareness concept is implemented in learning environments that spotlight contents and are able to recognize the right social relations and dialogue processes. Social mediation tools targeted to favour this awareness can actually improve cognitive processes and help e-learners to share new information in an appropriate context (social networking and CoP environments).

**Methodology and Indicators**

In the about 2 months of online training, 6 modules have been delivered: the first was devoted to the understanding of the methodology and use of the platform thus favouring the development of a so-called community of learning (CoL). The 5 remaining modules have concerned the specific themes of the course: Basic Principles of Learning; E-learning; Virtual Learning Community; On Line Tutoring; Basic Principle of Evaluation. The tutor in charge has opened for each module a discussion topic in the forum area of the platform. Two reactions were expected from participants: either *seen* or *posts*; the former means only reading, the second involves an active written contribution (comments, replies to comments, questions, etc.).

In the article *Computer conferencing and content analysis* Henry F. (1992) considers the model of information analysis and processing in multiple dimensions: participatory, social, interactive, cognitive and meta-cognitive. This model confirms the choice of the analysis of posts as an effective tool to test messages in collaborative environment.

**Posts and their classification**

For each subject under discussion within fora, students have been invited to actively participate through a minimum number of posts (at least 4 per forum) that were then analysed from a quantitative and qualitative point of view (classification) by the tutor.² In our case the classification method, taken from the article *Interaction in online learning* (Hopkinson, 2002), identifies 4 different types of post: *Initiate*, *Develop*, *Social/support* and *Help*.

Initiate posts start up a discussion; Develop posts build up and develop the discussion with constructive contributions relating to the theme under study; Social/support posts enable socialisation and sharing of ideas without adding additional contents to the discussion (they are however important for social networks); Help posts are technological or operational help requests.

Table 2 shows the number of posts produced by the 16 participants, related to each module of the course under question, according to the above classification (Hopkinson, 2002):

---

² Best practices CIHEAM - Istituto Agronomico Mediterraneo di Bari
If e-students are given suggestions on how to commit to Collaborative Learning in discussion fora and to actively participate, in the cases of CoP this might result in co-construction of new knowledge. The active participation mainly develops, as previously said, through Initiate and Develop posts, namely the posts useful to the development of the subject under study. These posts, supplemented with additional information to the contents proposed in the module, can originate added-value contributions, conventionally called by authors Episode posts. Consequently the most active participants, stimulated by common objectives and/or interests, may be involved in a well-structured dialogue full of new information (open reasoning cycle).

### ANALYSIS

For the analysis and classification of Episode posts, the classification model that authors have conventionally elaborated taking inspiration from an article found in literature (Lambropoulos et al., 2012) “(...) is proposed to measure its pedagogical value in real time with attributes described as follows: inform (suggestion), question (reflection), explain (elaboration), explore (elaboration), idea (co-construction), agree (judgment), evaluate (estimation) and others”.

The table below (Table 3) outlines the grid for the analysis and classification of Episode posts involving different types of interaction with the related description.
**Types of interaction**

<table>
<thead>
<tr>
<th>Types of interaction</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inform</td>
<td>Suggestion and innovative proposal with respect to the contents of the module</td>
</tr>
<tr>
<td>Question</td>
<td>Question arising from considerations on the subject</td>
</tr>
<tr>
<td>Explain</td>
<td>Elaboration of a text or explanatory depiction following “Inform” and/or “Question”</td>
</tr>
<tr>
<td>Explore</td>
<td>Post for exploration and search of subjects related to “Inform”, “Question” and “Explain”</td>
</tr>
<tr>
<td>Idea</td>
<td>Expression of additional concepts or elements to “Inform”</td>
</tr>
<tr>
<td>Agree/disagree</td>
<td>Critical expression and negotiation following “Inform”, “Question”, “Explain”, “Explore” and “Idea”</td>
</tr>
<tr>
<td>Evaluate</td>
<td>Judgment and shared assessment of new information and ideas</td>
</tr>
</tbody>
</table>

Applying the above method in the course under question, the data concerning the 5 modules delivered have been processed (Table 4) and different observations have been indicated.

<table>
<thead>
<tr>
<th>Episode posts/Modules</th>
<th>M1 (%)</th>
<th>M2 (%)</th>
<th>M3 (%)</th>
<th>M4 (%)</th>
<th>M5 (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inform</td>
<td>15.2</td>
<td>6.8</td>
<td>9.7</td>
<td>8.0</td>
<td>7.8</td>
</tr>
<tr>
<td>Question</td>
<td>6.5</td>
<td>15.3</td>
<td>11.1</td>
<td>14.0</td>
<td>17.6</td>
</tr>
<tr>
<td>Idea</td>
<td>17.4</td>
<td>25.4</td>
<td>23.6</td>
<td>20.0</td>
<td>23.5</td>
</tr>
<tr>
<td>Explain</td>
<td>17.4</td>
<td>25.4</td>
<td>18.1</td>
<td>14.0</td>
<td>15.7</td>
</tr>
<tr>
<td>Explore</td>
<td>13.0</td>
<td>8.5</td>
<td>11.53</td>
<td>8.0</td>
<td>7.8</td>
</tr>
<tr>
<td>Agree/disagree</td>
<td>23.9</td>
<td>11.9</td>
<td>15.3</td>
<td>24.0</td>
<td>11.8</td>
</tr>
<tr>
<td>Evaluate</td>
<td>6.5</td>
<td>6.8</td>
<td>6.9</td>
<td>12.0</td>
<td>15.7</td>
</tr>
<tr>
<td><strong>TOT</strong></td>
<td><strong>100</strong></td>
<td><strong>100</strong></td>
<td><strong>100</strong></td>
<td><strong>100</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

N.B. The numerical data of Table 4 are considering the possibility quite frequent that in a same post, sometimes very long and articulated, can be identified two or more different types of interaction.

**MODULE 1: GENERAL PRINCIPLES OF EDUCATION**

In this module the discussions focused on the comparison between classical education and distance learning. Moreover the Agree/disagree (23.9%), Idea (17.4%) and Explain (17.4%) posts have the highest percent values.

**MODULE 2: E-LEARNING**

In this module there is a high percentage (25.4%) of Idea and Explain posts on the subject “E-learning evolution and the role of technology in its development”. The trainees asked Questions (15.3%) about some aspects and concepts related to distance learning (behaviourism, cognitivism, synchronous and asynchronous interactions, etc).
MODULE 3: VIRTUAL LEARNING COMMUNITY
Trainees have tried to dissect (Idea 23.6%, Explain 18.1% and Explore 15.3%) the virtual learning community in terms of composition (students, teachers, tutors).

MODULE 4: ON-LINE TUTORING
In this module the tutor’s role was especially debated. Moreover the Agree/disagree (24.0%) and Idea (20.0%) posts had the highest percentage.

MODULE 5: BASIC PRINCIPLES AND TOOLS FOR E-LEARNING EVALUATION
In this module Idea message (23.5%) and Question (17.6%) represent the major percentages. This could be due to the “particular” topic of the module. The Explain message and Evaluate represent, each, 15.7%.

The diagram in Figure 1 shows the percentage distribution of different type of episode posts per module.

![Figure 1. Distribution per module (%)](image)

Besides checking the presence of Episode posts in all modules, the authors have documented the occurrence of different open cycles of discussion for which they propose an analysis methodology aimed at assessing which, among the above cycles, meet the minimum significance parameters with a view to identifying hypothetically some items of Peer Learning Occurrence (PLO). To this end, for the calculation of the PLO was considered only the open cycles (arguments) of discussion involving at least 25% of the participants (e.g. 4 out of 16 in our experience) and with at least three different types of interaction (Inform, question, idea, etc.). This indicator (PLO) expresses how many well-articulated and exhaustive situations have occurred so as to consider that Peer learning episodes have been implemented in communities of practice (CoP). Lastly, it is worth stressing that the Forum area has been particularly favourable to the spontaneous development
of the above process supported by the applied method (collaborative-constructivist) in a context of socially aware participants.

Table 5 below shows the data concerning the number of open discussion cycles (per module and total) and the corresponding Peer learning occurrences (PLO) (per module and total) calculated taking in consideration the real active (motivated) participants and according to the proposed method.

<table>
<thead>
<tr>
<th>N° Participants</th>
<th>MOD 1</th>
<th>MOD 2</th>
<th>MOD 3</th>
<th>MOD 4</th>
<th>MOD 5</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>N° Cycles of discussion</td>
<td>13</td>
<td>11</td>
<td>11</td>
<td>9</td>
<td>12</td>
<td>63</td>
</tr>
<tr>
<td>N° Peer Learning Occurrence</td>
<td>3</td>
<td>3</td>
<td>5</td>
<td>7</td>
<td>7</td>
<td>25</td>
</tr>
</tbody>
</table>

The results obtained are the outcome of the combination of different favourable components: socially aware adult users, the collaborative method supported by sustainable technology, materials with low cognitive impact, a targeted selection of participants and spontaneous group dynamics animated by some team leaders. In particular special attention should be paid to the proposal of study materials with low cognitive impact (basically synthetic) that have stimulated a clear will of in-depth study and analysis for self-managed “constructive” participation (knowledge management).

The analysis of the experience shows high quantities of constructive posts (Tot. 278) and the occurrence of many (Tot. 63) “open cycles of discussion” in all modules of the course proving the actual implementation of Peer Learning.

Moreover finding 25 PLOs with an increasing numerical evolution (3 in the 2 first modules and 7 in the last 2) reveals a potential greater interest for the subjects covered at the end of the course but also a growing propensity to constructive discussion peer to peer.

These results have also enabled authors to devise and propose a conventional analytical method to identify, via indicators (PLO), the conditions required for the occurrence of Peer learning.

The study described in this article suggests the need for further in-depth analyses aimed at identifying new additional factors (indicators) to those already highlighted in this work so as to support-strengthen the proposed assumptions and methods.

**Acknowledgement**

Thanks are expressed to Lahcen Auhate for his valuable collaboration as tutor and expert of the course investigated in this article.

Appreciation and thanks are express to Anna Maria Novielli for the translation of this article.


www.ioe.ac.uk/schools/leid/oet/OET%20html%202001%20essay%20docs/Hopkinson_B.htm


