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TEACHER AND TRAINING QUALITY MANAGEMENT

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Experimentation Final Report September 2013

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1. EXPERIMENTATION STRUCTURE IN THE TQM PROJECT

1.1. Theoretical framework (Rosanna Buono)

The ICT Competency Standards for Teachers (UNESCO, 2008) highlights how the use of ICT can support teachers' professional development. According to the Syllabus contained in the document's section called "Knowledge Creation", the highest level competences with regards to Teachers' professional development are:

- continuous analysis and evaluation of professional practice focusing on innovation and improvement;
- use of ICT tools to take part in professional communities, sharing and discussing teaching best practices;
- discussing how ICT tools can be used to support both continuous innovation and professional improvement within learning communities through examples and by collecting evidence from the activities previously carried out.

Consequently, creating an on-line "teacher learning community" that is featured by a high relational density is a golden opportunity for teachers' development. Within such community and by using digital devices, teachers can put in practice their metareflective and metacognitive skills in order to provide support to the reconstruction, the narration, the documentation and the evaluation processes of professional experiences. From this point of view, the e-portfolio becomes both a "process" and a "product" in progress for self-evaluation, with the aim of planning, sharing, implementing and keeping records of individual and collective professional development plans.

Collaborative evaluation constitutes, in the forms of peer and self-assessment (Limone, 2012), the theoretical framework of reference for the e-portfolio experimentation, since it highlights the cognitive and social "presence", as well as the empowerment and accountability processes triggering transformative learning within the teacher learning communities (Mezirow, 1991).

From this view, the theoretical background supporting the experimental stage of the TQM project allowed:

- the research to be considered a socially situated activity (Peirce, 1955; Dewey, 1982, 1984) with a particular focus on the dynamics that can turn practice communities (Wenger, 2006; Wenger, McDermott, Snyder, 2007) into reflective research communities that enhance heuristic approaches in connection with teaching practices (Schön, 1987; Fabbri, 2007, Fabbri, Striano, Melacarne 2008; Mortari, 2003, 2009; Striano, 2001, 2006);
- the use of narrative, metareflective and dialogic tools to promote the gradual evolution of the practice community into a learning community (Striano, 2001; Fabbri, 2007; Mortari, 2009) as well as the active participation in research communities, where both teachers and students play a leading role as they stop being "research objects" and become "researching individuals" (Mortari, 2003, 2009; Peirce, 1955; Lipman, 2005);
- highlighting the teachers' need of being in control of their own professional development in accordance with the theoretical principles set forth by the Learning to Learn protocol (Deakin Crick, Broadfoot, Claxton, 2004; Stringher, 2010) and by self-determination principles (Deci & Ryan, 2002);

- teachers taking part in the project to plan together integrated learning environments to promote the transition from institutional e-learning environments to environments that focus on the individual as a learner, experimenter, researcher and creator of knowledge (Celentano, Colazzo 2008; Fini, Cicognini, 2009; Petrucco, 2010) by using collective intelligence (Levy, 2002) and connective intelligence (De Kerckhove, 2001). The platform <http://eportfolio.tqmproject.eu/>, developed thanks to the technical support provided by Ud'Anet, intends to implement learning and research environments jointly created in cooperation with the teachers involved in the project and, as a result, those environments are aimed at responding to their learning and assessing needs.

The theoretical framework is in line with the need to overcome, through the e-portfolio experimentation, traditional professional training, usually passive, and to create interactions within the system between research and experimental activities, in service teachers' training pathways and methodology and teaching innovation pathways.

1.2. Self-evaluation and Peer-evaluation in the TQM project (Giulia Parrucci)

The aim of Self and Peer evaluation in the TQM project is to improve the learning process in students meant as being part of a social organization. "Self-evaluation of education and/or learning is the process of systematic collection, analysis and exchange of data concerning educational processes of either individuals, groups or organisations (institutions, etc.) in order to facilitate learning among all parties concerned so value judgements and decision-making may be based on evidence rather than on intuition." (SEALLL, 2006). The integration of this particular set of ideas in an organization may find some obstacles: it must be done in an open, participatory and democratic environment. In order to differentiate them from external evaluation or inspection, in our project, Self and Peer-evaluation are self-initiated, internally organized, self-regulated and aim at a more professional and autonomous decision making process that enable the individuals involved in the project to reach their goals.

Taking into account the entire system, teachers self and peer evaluation are a firm link between teaching and student training. As a result, teachers should promote self-evaluation because it is one of the main ways for students to actively take part in their education (Sloan, 1996). In particular, self and peer-evaluation establish an ongoing flow of communication among all stakeholders. This allows for a transparent decision making process and a more efficient matching between the students' needs and other parties involved, and what teachers, trainers and educators offer them.

During Self and Peer evaluation in the experimental stage of the TQM project, the following activities were carried out:

- reflection processes to improve the students' learning process. Focusing on concrete experiences as the starting point, teachers reflect on those experiences and go through four learning stages as suggested by Kolb's learning cycle (Fig. 1), which are: concrete experience, reflective observation and thinking, abstract hypothesis, hypothesis testing through a new concrete experience which generates a new learning cycle (Kolb, 1984) as well as improvement actions.
- conscious processes aimed at organizational learning (Argyris e Schön, 1998). From this point of view, the experimentation aimed at stimulating learning abilities such as the development of a dynamic and proactive behaviour which boosts the ability to understand objective problems and

situations, creates a shared view to enhance the learning process of the group and develops the abilities for individual reflection and systemic approaches. In our experimentation, the stimulus provided to organizational learning is inspired by the model developed by Nonaka and Takeuchi (1995), which is based on the concepts of "tacit knowledge" and "explicit knowledge" (Polanyi, 1966).

Self and Peer evaluation, within the TQM Project experimentation, showed an improvement in cognitive and social awareness, empowerment and accountability processes (Limone, 2012), triggering transformative learning processes (Mezirow, 2003). The teachers involved in the experimentation, using dialogic tools, were given the opportunity to carry out assessments, to receive feedback from peers on their own progress and to provide information on their personal learning strategies. The epistemic premise at the basis of the experimentation is the presence of a valuable interconnection between self and peer evaluation, teachers professional development and improvement of students' learning process.

The distinctive feature of the TQM Project is that it focuses on the creation of a digital platform aimed at teachers, that allows them to link teaching self-appraisal to students' learning process through reflective processes that guide teachers' professional development (Fig. 2).

1.3. Stages and methodology (Rosanna Buono)

The main aspect, used throughout all the stages of the experimentation, was the dialogic element connecting all the members of the community. The teachers involved in the experimentation were continuously interacting to negotiate meanings. They were aware of the fact that the richer the group, the richer individuals get, and that practice communities are the natural environment for the social activity known as learning. According to Nonaka (1994), the learning process reaches out the entire social organization whenever working activities and new types of knowledge are interconnected and are also linked to the opportunities that the members of the practice community have to develop skills.

The experimentation linked the experimentation of the e-portfolio and the training of teachers involved in the project, and deliberately promoted relations and exchanges among the partners of the TQM project. The gradual transformation of the partnership into a research system was an ambitious goal. This was carried out bearing in mind that, also in the field of education, the power research has to drive change, and innovation notably increases when there is a higher number of leading actors, social systems and institutions involved. As previously mentioned, there were many partners involved in the TQM project, each of them with specific roles and functions: the Telematic University "Leonardo da Vinci" (IT); the University of Ulster (UK); EVALITAS (AU); Ud'Anet Ltd (IT); EFQUEL (BE); INVALSI (IT); Insight&Co. Ltd (IT). Consequently, the aim during the experimentation was to invest in teacher practice communities and support their evolution towards learning communities in their own cultural and educational context and, at the same time, open and set up communication with the other partners. All the activities carried out, namely the tutor training courses, the workshops, the reflective practice labs, the on-line activities through the platform with the participation of the Italian teachers involved in the experimentation and the Austrian control group as well as the conclusive focus groups, should be considered in this light. The TQM project was carried out in four stages, strongly linked among them, with the participation of various stakeholders:

The TQM project took shape in four stages:

1. *Analysis of tutors' needs and training of tutors.*

The methodology and the strategy are in line with those of SEALLL (<http://www.sealll.eu/>) and Te-Pni (<http://tepni.com/>) projects. The VET European regulatory framework was outlined and the procedures for transfer and adaptation of the tools from the Austrian and British models were adopted, together with a set of technical specifications for the development of the Italian e-portfolio. At this stage, the needs of both the Italian and the Austrian target groups were assessed (teachers/trainers and head teachers/school principals and regional education agencies). Questionnaires were administered in order to design a training pathway and to later adapt it to the actual needs. To this aim, training sessions for trainers were held in Austria for five tutors (four from Italy and one from Austria). These tutors provided support to the teachers during the co-design and experimentation stages of the e-portfolio.

2. *Model transfer/contextualization.*

The data obtained through the initial questionnaires and the analysis of the inclination towards evaluation showed by the Italian teachers, resulting from the questionnaires as well, were used to contextualize the methodologies and tools in order to elaborate an e-portfolio model which reflects the Italian teachers' training needs. The changes and adjustments made to the platform affected both technical and design-related aspects of the e-portfolio, and focused primarily on the area devoted to the community in order to improve dialogue among all the individuals involved in the project.

3. *Assisted experimentation.*

Two groups of teachers were selected: a group of 54 Italian teachers who took part in the experimentation and a group of 39 Austrian teachers forming the control group. The experimentation included the following:

- seminars and workshops to analyse and review the existing international scientific literature on topics in line with the teachers' training needs arising from the initial questionnaires.
- six reflective practice labs (Striano, 2001; Mortari, 2003) that originated from highly problematic teaching experiences regarding teachers' professional practices. The intended aim was to elaborate a situated theory of evaluation and self-evaluation as professional processes of development and growth, both for the individuals and the educational systems they belong to. Such reflective practice labs supported the creation of improvement plans that led to a new professional epistemic frame;
- face-to-face and on-line (<http://eportfolio.tqmproject.eu/>) activities to co-design and create the e-portfolio using those digital tools that facilitate and promote peer and self evaluation.

The following activities were organised: workshops, face-to-face and on-line meetings, individual and group reflection, sharing thoughts and ideas for the creation of action plans and the e-portfolio. All these activities promoted change and innovation and provided the opportunity to experience directly the beneficial effects emerging from personal and peer analysis. Moreover, the experience aspect was crucial in order to reach common goals, especially in those cases where resistance mechanisms, implicit in that specific educational system, were found. A bottom-up approach was adopted allowing a shared identification of changes as well as setting common goals, tools and rules to work together in order to identify strengths and weaknesses. Through this approach it was possible to:

- point out critical issues linked to professional development and also to the organization in which individuals work;
- negotiate shared meanings for the concepts of self and peer evaluation and generate a new epistemic approach in teachers as for the evaluation practices and the creation of new perspectives of meaning;
- promote exchange of ideas and put in practice collective development and improvement processes through the continuous support provided to the "teacher learning communities".

The Italian and Austrian teachers and trainers developed their own e-portfolio in a shared digital space <http://eportfolio.tqmproject.eu>.

4. *Validation.*

The results of the experimentation were analysed through control questionnaires and focus groups, in order to assess the impact of such experimental practices on teachers and trainers and to point out strengths and areas for improvement with regards to the adopted methodology and tools.

1.4. Identification and analysis of needs: putting the model into context (Teresa Consiglio)

The basis for the experimental activity is the opportunity to transfer to the Italian context two meaningful teacher self-evaluation processes, carried out in Austria and Northern Ireland, through an e-portfolio. It was possible to adapt the above mentioned European experiences thanks to the data obtained through the initial questionnaire provided and developed by INVALSI. The questionnaire aimed at collecting data on opinions, approaches and the inclination towards evaluation and self-evaluation showed by teachers, in order to support teaching improvement processes as well as collecting teachers views on the use of the e-portfolio application for self-evaluation. Promoting and developing reflective, narrative and communicative skills and adopting self and peer evaluation processes, also using on-line tools and environments, entails the need to exchange views on teachers' digital identity, including their social views on the use of new technologies for self and peer evaluation, and to remove any resistance to change. Only through an accurate analysis of implicit theories (Polanyi, 1979) of interpretative frameworks, past experiences, knowledge and beliefs that connote meaning perspectives (Mezirow, 1991) used by teachers to perceive evaluation and self-evaluation practices, is it possible to generate real evaluation and valuable learning processes (Rossi, 2006).

Such is the aim of the on-line questionnaire. The on-line questionnaire collected useful information to design the training sessions that followed in order to support the experimentation, and laid the basis for the most qualifying phase of the entire project, namely, co-designing the e-portfolio with all the teachers involved in the project through shared action plans, learning/teaching processes carried out in their own educational contexts.

Before the questionnaire was elaborated and administered, national and international literature was analysed, with a special focus on teaching appraisal and self-appraisal. At the same time, some international experiences and two Italian experiences on teachers professionalism were used as a reference: ADI professional standards (Drago, 2000) and the VIVES project (INVALSI, 1998). The self-evaluation questionnaire developed for the experimental project VALORIZZA (MIUR, 2011) was also taken into account.

The administered questionnaire contains 39 questions divided into the following sections:

- General information about the interviewee;
- Teaching motivation and degree of satisfaction;
- Teaching, learning and student assessment notions held by teachers;
- Characteristics that the ideal teacher should have according to interviewees;
- Expected goals and modes of teaching (self-) appraisal;
- Features of a digital tools to support self-appraisal as regards to teaching skills.

The total number of completed questionnaires was 937.

1.5. Seminars and workshops (Giulia Parrucci)

The seminars and training sessions organised in relation with the TQM project, which took place at the Leonardo da Vinci Telematic University located in Torrevicchia Teatina (Italian province of Chieti), aimed at promoting a more favourable methodological approach towards self-evaluation as a way of rethinking and modifying teachers' professional pathways.

On the 10th October 2012 the round table "The evaluation of teacher professionalism and the quality of education" took place. Such round table, which focused on teacher professionalism, aimed at raising awareness among interested stakeholders on the "education system" as for the concepts of evaluation and self-evaluation intended as a teaching improvement opportunity. The TQM project intends to make a contribution to this debate by promoting a mentality of quality improvement in teaching and training system and, specifically, improving evaluation through ICT tools. The round table encouraged further reflection upon the importance of self-evaluation, supported by digital tools such as the e-portfolio, as a strategic element to trigger self-criticism and facilitate continuous revision and improvement processes in terms of training efficiency, efficacy and efficiency of the services offered by single schools, also in a collaborative perspective. The following speakers took part in the Round Table: Prof. Mario Castoldi (University of Turin), Prof. Dino Cristanini (Ex Director at INVALSI), Prof. Arduino Salatin (IUSVE Venice), Prof. Saverio Santamaita (G. d'Annunzio University - Chieti), Prof. Vittorio Midoro (Ex Director at CNR Institute for Educational Technology), Mrs. Mariella Spinosi (Technical Manager, Regional School Office of Abruzzo), Mrs. Cristina Stringher (research fellow at INVALSI). The chairman was Prof. Carlo Petracca (Ex Director at the Regional School Office of Abruzzo).

On the 15th March 2013 took place the workshop "Teacher e-portfolio and self-regulated learning" which focused on "teacher e-portfolio" and "self regulated learning". The workshop aimed at thoroughly analysing experimentations and activities developed within the Italian educational system (in both schools and universities). The following speakers took part in the workshop: Prof. Pierpaolo Limone (University of Foggia), Mrs. Rosanna Buono (PhD in Teacher training), Mr. Ettore D'Orazio (Head Teacher at Istituto Comprensivo n. 4 Chieti), Mrs. Serafina D'Angelo (Head Teacher at Istituto Comprensivo n. 1 Chieti), Mrs. Floriana Cesinaro (Istituto Comprensivo San Giovanni Teatino - CH), Mrs. Cristina Stringher (Research fellow at INVALSI).

On the 17th April 2013 the workshop "From traditional teacher evaluation to the e-portfolio: certified assessment and self-evaluation" took place. It analysed the main stages in the development of the e-portfolio and positioned in a national context the activities carried out for the creation of an e-portfolio aimed at teachers from technical, vocational and regional VET

schools. The speakers of the workshop were: Mrs. Alessandra Cenerini (President ADI), Mrs. Tiziana Pedrizzi (ADI) and Mrs. Cristina Stringher (INVALSI).

On the 6th May 2013 the workshop "Teacher portfolio as a tool for personal and professional branding development: concepts and models" took place. The workshop intended to make teachers familiar with the concept of Personal Branding and considered the era of Social Media as an era in which individuals can act as protagonists and can achieve success and professional fulfilment by highlighting and communicating to other people what makes them unique. The workshop also focused on the concepts of professionalism, practice and the self. The following speakers took part in the workshop: Prof. Pier Giuseppe Rossi (University of Macerata) and Mr. Luigi Centenaro (Personal Branding Strategist, Reach Personal Branding at William Arruda, USA).

On the 30th May 2013 the workshop "Twenty years of Educational Technology: the current situation in schools" was organised. The Leonardo da Vinci Telematic University (UNIDAV), the CNR Institute for Educational Technology, the Regional School Office (Abruzzo) and Menabò publishers organised a meeting to jointly analyse and share views on the state of the art regarding the use of educational technology in the schools located within the Abruzzo region. The following speakers took part in the workshop: Mrs. Donatella Persico (co-director at TD), Mr. Gaetano Basti (publisher of D'Abruzzo magazine), Prof. Carlo Petracca (Ex director at the Regional School Office of Abruzzo), Mariella Spinosi (Technical Manager, Regional School Office of Abruzzo), Prof. Saverio Santamaita (Leonardo da Vinci Telematic University), Prof. Vittorio Midoro (co-director at TD).

On the 5th June 2013 the workshop "Tools for educational content creation and sharing. Share through MOOC. Designing and creating an e-book" took place. The aim was to inform teachers on MOOC (Massive Open Online Course). An interesting e-book laboratory was also organised. The workshop was held by Mr. Francesco Polcini (Leonardo da Vinci Telematic University).

1.6. A workshop example: environments and tools for educational content creation and sharing. (Mr. Francesco Polcini)

The workshop was designed and offered to the teachers involved in the project after the need for greater information on new web-based learning models emerged from the reflective practice labs. Therefore, before the workshop, a seminar entitled "Tools for educational content creation and sharing: Share through MOOC. Designing and creating an e-book" was organised. The starting point was a presentation about Connectivism, a learning theory formulated for the first time by George Siemens. This theory is based on his research about the limits that other theories, such as behaviourism, cognitivism or constructivism, encounter when trying to explain the impact that the use of new technologies has on our learning and communication styles. The term MOOC (Massive Open Online Courses), first used in 2008 during the conference "Connectivism and Connective Knowledge", spreads out worldwide in autumn 2011. Some of the most relevant international projects showing the educational value of MOOC were discussed during the seminar, with particular attention being devoted to the importance of such programmes in developing countries. It showed some important MOOC platforms and highlighted the educational value from a "connectivist" standpoint. The seminar was followed by the workshop "Designing and creating an e-book". This workshop aimed at making teachers reflect on an important and current issue that has a big impact on education and teaching. During the workshop some solutions that can be found on-line (as well as other sources) were analysed, and the principles to create a digital book as well as various ebook definitions were discussed in order to give all the teachers involved in the

project a practical opportunity to create a "semi-finished" ebook. By doing so, they faced some of the basic problems of the ebook creation process, such as choosing the software, graphic design, index creation and, especially, a clear methodological approach to be adopted in order to reach the educational goals.

2. BECOMING A TUTOR

2.1. The training of trainers (Federica Basco)

The tutors' training course took place in Graz (Austria) and in Torrevicchia Teatina (Italy) and was held by Austrian professors as well as Irish professors from the University of Belfast. The course consisted of on-site lectures and workshop activities; it also included a description of the Irish platform "Pebble Pad" and the corresponding e-portfolio.

The tutors' training course included the following topics:

- creating one's own professional self-evaluation process for a direct understanding of the challenges to be met and in order to become a tutor;
- developing the tutors' view and focusing on learning needs with regards to self-evaluation processes;
- using the right tools and methodologies to support teachers self-evaluation processes;

The training course was driven by the following beliefs:

- self-evaluation processes must be assimilated, as this is the only way to turn them into a spontaneous practice: tutors must promote such processes without forcing them;
- from the teachers' view, teaching self-appraisal implies an improvement of their own teaching practices by guaranteeing, at the same time, an authentic learning process for students;
- some keywords linked to self-evaluation processes, such as improvement, awareness, growth and development, professionalism and modesty, highlight the introspective aspect of such process without setting aside the importance of everyday personal and professional experience;
- self-evaluation processes are validated through dialogue and sharing with other people (co-workers, head teachers, families, students) and is reinforced through lifelong learning;
- self-evaluation processes must turn into a system-wide process that involves all of its components, both internal and external to the schools.

Given the premises above, tutors hold the duty of helping teachers reflect about their own role, as individuals as well as part of a group, when engaged in self-evaluation processes.

Consequently, self-evaluation turns into a form of dialogue and, at the same time, into a lifelong learning process. Tutors, as trainers, facilitate the process of self-evaluation and guide teachers through a self-analysis and teaching improvement process.

Tutors' training included practical activities aiming at acquiring the abilities above mentioned. One activity was deemed particularly relevant to this end. The future tutors were asked to split into couples and had to look at each other for two minutes. In turn, they were asked to provide a

description of the other partner, a description that had to be as objective as possible. Such activity helped the participants understand how evaluation can be influenced by multiple factors that turn it into a subjective activity. This activity also served the purpose of understanding that it is important to re-establish objectivity in evaluation on the basis of accurate and shared standards.

Another fundamental activity was that in which tutors undergoing the training were asked to create their own "Action Plan", or "Professional Improvement Plan", focusing on one of the topics proposed during the brainstorming session. As a matter of fact, designing a Teaching Improvement Plan is an essential step for the creation of an e-portfolio that truly becomes a professional development tool, one that contributes to the improvement of the quality of students' learning processes. The topics pointed out are linked to critical aspects frequently found in teachers' teaching practices:

- building up knowledge;
- developing personal skills;
- teaching-learning processes;
- activating students' motivation to study;
- problem solving skills;
- learning styles;
- team work: analysis and collective nature of the process.

The Action Plan written by the tutors undergoing training included seven sections on a topic selected from the list above. The first section, called "preparation", includes an initial part on the professional situation of each participant with regards to the subjects taught, the classes they are in charge of teaching, the teaching styles used, the professional achievements made and/or the obstacles encountered. After explaining why a specific issue of the educational context has been chosen, the seven sections must be filled in with the following information: assessment area, expected goals and results, known data, data to be collected indicating modes and tools for collection. All the actors involved in the self-evaluation process must be specified, as well as all the variables to be taken into account.

Subsequently, the structure of the Action Plan must be completed and tools, methods, data, time frames, stages and people involved must be indicated.

At the end, the information is collected and the results are analysed. Results should be presented in selected communication methods (in forms of graphs, diagrams, etc.) and after selecting the desired target for such results in order to get feedback, avoid self-reference and analyse both the value and meaning of such information for professional development.

All the Action Plans created by the tutors were uploaded to the Irish e-portfolio platform, Pebble Pad, as an exercise.

2.2. Tutoring (Teresa Consiglio)

The experimentation of the TQM project included a blended-learning approach. Such approach allowed for the creation of an exchange and contacts system among the teachers involved in the

project that led to a fertile and stimulating learning environment which overtook the traditional teamwork model, where time and space are not flexible and need to be set in advance.

The theoretical framework, with regards to the organization and management of such activities, refers to constructivist epistemology which considers of paramount importance the construction of interpersonal relations within learning processes. The digital platform, used to share material and build an e-portfolio, enabled the teachers taking part in the project to manage independently the time devoted to talking, discussing and exchanging information, and also allowed them to do so for longer periods compared to face-to-face meetings.

During the experimentation, the groups of teachers were supported by six tutors, two per each group. Tutors organized the learning activities of the teachers involved in the project and played a guidance and promotion role. The aim was to strengthen the ability, that teachers involved in the project have, to create pertinent links between practical experience and theories. To do so, they worked together on their acquired knowledge and the corresponding representations, in order to turn their teaching experience into shared knowledge that can be disseminated and transferred.

As a matter of fact, the acquisition of professional skills corresponds to a social dimension made of mutual sharing and exchange, aimed at improving human and social capital within an organization (Hargreaves, 2012) thus leading to better productivity, which results in advantages both for the individual and the organization.

The role played by tutors is strikingly important. Tutors are, within a learning system, facilitators of individual and/or group dynamics, guides for learning processes, counsellors for the training programme, assistants through the individual and group training programme, promoters of the relationship with new training "objects" or within new pathways (Calvani e Rotta, 2000).

The term "tutor", which recalls the ancient educational function carried out by mentors, combines the roles of "emotional" and "pragmatic" guide. It indicates a person who knows thoroughly the system in which he/she works in and, thus, can support others through the learning process (Piolanti, 2004). In line with these principles, tutors supported a continuous and dynamic information exchange process, as well as a knowledge improvement process among the people taking part in the experimentation.

The tasks carried out during the tutorships are reported below:

- facilitating information exchange and dialogue among peers, sharing resources and in-depth analysis;
- managing individual and/or group exercises, supporting the teachers involved in the project and providing adequate feedback;
- organising and managing group activities aimed at promoting teacher participation to the learning process, both at individual level and in small groups (writing reports, creating projects, negotiating solutions to problems);
- moderating and facilitating interaction related to collaborative learning experiences, sharing activities or promoting active cooperation among members of different groups;
- monitoring the results achieved by the participants with regards to knowledge, abilities and acquisition of new skills.

The activities above mentioned were coordinated as follows:

- activity planning meetings with all the tutors in order to share methodological and educational guidelines, preparation of the activities carried out with teachers in face-to-face meetings and on the platform, preparation of materials for group activities;
- five seminars and workshops for in-depth analysis with the teachers taking part in the experimentation.

Special attention was paid to platform communication among teachers and to the continuous facilitation and monitoring of on-line training sessions.

3. E-PORTFOLIO AS A PROCESS AND AS A PRODUCT

3.1. Workshops on reflective practice (Maura Massari)

The aim of the workshops was to promote a research community in which teachers were given the opportunity to test, through everyday practice, reflective and dialogic tools which are useful for professional development.

The proposed activities, organised on the base of a cooperative learning model with a constructivist approach, promoted the creation of a learning community whose members started negotiating and sharing research and professional goals straight from the beginning.

There is the need to define a new dimension in teachers' professionalism taking into account reflective and heuristic abilities as well as "contextualised" knowledge, based on scientific principles, which are essential to face, on a daily basis, the unique and dynamic educational complexity in order to improve the teaching and learning processes.

During the workshops on reflective practice (Mortari 2003), teachers were engaged in a common activity, such as the creation of a professional e-portfolio, carrying out tasks and assignments that they had to coordinate among them and with tutors. Such activities contributed to the creation of functional relationships that were supported by practice.

The group of teachers taking part in the experimentation played an active and propositional role in the six face-to-face workshops organised at the Leonardo da Vinci Telematic University located in Torrevicchia Teatina, in the province of Chieti.

During these meetings teachers constructed and reconstructed their theoretical knowledge and, thanks to an in-depth analysis carried out in the proposed workshops, they were able to create a frame of common knowledge.

The innovative aspect of the project is to be found in the opportunity that teachers involved in the project had to test, in real practice, the shared theoretical principles. The co-construction of their own digital portfolio allowed them to become increasingly aware of the educational value of professional self-evaluation and of the direct consequences on students' learning process.

The experimental process can be summarized in three stages. These stages are integrated and fully interdependent from one another. Each stage had its own "focal point", which was the basis for the rest of the proposed activities that were organised.

The topic of the first stage was the construction of the sense of identity for each group of teachers.

To this end, it was important to share a common terminology with regards to the concepts of evaluation, self-evaluation and professional skills.

The survey on the concept of self-evaluation, carried out during the reflective practice workshops, was extremely useful as it showed that teachers have a compact idea about the definition of such concept. There were some variations that contributed to further strengthening the participants' knowledge.

Meaning negotiation and shared knowledge co-construction result in a clearer idea about the pathway to be followed, and promote a constant rearrangement of the ideas and concepts that teachers acquired during the learning/experimental process.

During the workshops, teachers constructed and reconstructed together their "domain" of common knowledge using the material available and distributed during the sessions as well as documents and good practices shared by teachers through the platform.

The second stage consisted in the beginning of the e-portfolio design and construction phases. It included "action plans", meant as professional development/improvement plans, aimed at finding solutions to the problems that were pointed out by teachers in their own working contexts.

It seems clear that, during this stage, teachers were asked to put in place skills that they are not always aware of, however, their being essential for the professional development process. As a way of example, the ability to carry out a diagnosis of their own contexts in order to identify, define and solve any problems that may emerge.

Reflecting over everyday professional practice and transferring new abilities and knowledge into their own working contexts is a way of making individuals aware of their abilities, and this leads to the acquisition of new professional skills. This results in an individual and community generative cycle leading to change.

During the third and last stage of the experimentation, the work carried out at workshops focused on enhancing these abilities and, specifically, it led to the creation of concrete action plans through meaning negotiation, knowledge sharing and mutual support between the teachers involved in the project and their tutors.

In the course of this stage, teachers worked, not only individually, but also and mainly in groups. They reflected over the professional abilities pertaining primarily to the field of teaching and also on "cross-disciplinary" skills, which are essential for "action plan" design. They realized that problem sharing is the first step towards problem solving.

In order to upload the "action plans" to the platform, it turned out that providing technical support to teachers in connection to the use of the digital environment was essential.

The common goal to be achieved was the creation of an effective tool capable of keeping record of teachers' professional development (useful to them to improve their teaching process) and, at the same time, a tool that was able to offer students positive practices to improve their learning process.

During the experimentation, the teachers' attitudes were monitored by resorting to several assessment techniques. One of these techniques is called "Bull's eye". The "Bull's eye" consists of a board divided into four areas and with different rings in it, the centre of the board representing the "bull's eye", namely the target. This game is used to measure the "level of satisfaction" in the following areas: the new experience, the group and the familiarity with the digital portfolio, and the self-evaluation and professional development concepts.

It is interesting to point out that, during the design phase, the teachers involved in the project became aware of the need to develop and improve some "meta-skills" which are essential to carry out the self-evaluation and professional development processes. Such skills can be described as "the fundamental ability to adapt, make flexible, define and reconstruct the curricular experiences that individuals are capable of using, both in learning and working experiences, in order to respond through continuous adaptation to the changing needs of the existential and professional context of reference." (ISFOL, 2005).

The meta-skills analysed can be summarized as follows:

- Becoming aware of the methodological "virtue" that a tool such as the e-portfolio can bring to the improvement of teachers' professionalism in order to enhance students' learning processes.
- Developing the ability to interpret, in terms of professional competences, their teaching and training techniques and assign it sense and meaning.
- Developing the ability to "diagnose" their training needs in order to create a professional development action plan.
- Developing the ability to work as part of a network.
- Developing the ability to identify and find human resources, material and useful experiences to carry out and implement the designed action plans.

Building an e-portfolio (and, in particular, creating the ability to reflect over one's own professional skills in order to reinterpret personal experience, contextualize it and improve it) is a process that requires a long time because sometimes teachers do not have such abilities. Indeed they are not used to the practice of self-evaluation and often they feel alone and isolated.

Throughout this programme, participation has been the key and the essential condition to build up personal and professional abilities.

The teachers involved in the project contributed to the successful outcome of the experimentation thanks to the personal and professional energy they devoted to it. They were the protagonists of a gradual process and each of them was in line with their own pace and with their own computer skills.

Generally speaking, all teachers showed the will to challenge themselves into a demanding process of exploration. They showed a humble approach to the process and they proved to be open and curious towards new knowledge and development opportunities. Through exploration and research, they gradually assimilated the process and understood how shared research works and, in some cases, they were able to field-test it successfully.

3.2. The platform: methodology chosen, areas and functions (Luigi Rossano Angelini)

There are two fundamental principles at the basis of the platform design:

- supporting self-reflection as the first step towards professional development;
- promoting professional dialogue in order to improve the teaching practice and, consequently, the students' learning processes.

The platform helps teachers to keep track of their own personal reflections in order to analyse their strengths and weaknesses. The platform also helps teachers activate reflection, discussion and exchange of ideas with other teachers over thorny issues encountered when teaching.

The methodological principles of reference used to design and implement the digital environment and tools are:

- creating a highly usable digital space through an extremely intuitive and user friendly interface;
- reconciling institutional and formal research and training forms with other forms that promote self-regulating and self-generating activities, spaces and roles from a socio-constructivist point of view;
- integrating downloadable and informative web resources with collaborative and creative web resources, with the aim of sharing user generated content. From this perspective, the repository was organised as a digital archive with descriptors and keywords (tags) elaborated by the platform members according to the semantic principle of folksonomy;
- supporting the dialogical and collaborative construction processes of educational resources, also by making use of digital tools and environments.

The structure of the platform (Fig. 3) has three main macro-areas: personal, shared and public. Each macro-area supports specific functions or cognitive processes that later develop in the corresponding areas. There are two categories of users: teachers and tutors.

In the Professional Identity area (Fig. 4), teachers taking part in the project can enter their background information as well as other data influencing the students' learning and teaching processes. The area is divided into sections and subsections. In the sections called "Teacher profile" and "Curriculum", it is extremely important to include and describe a set of factors, such as teaching context, school, students, classroom, implicit and explicit reference theories, formal and non-formal training. The section called "Personal repository" allows teachers to save all the external resources that they deem important for their professional development. All the resources (Files, Images, Videos, Bookmarks) saved in the repository must be accompanied by an explanation and a description for uploading, and must include an explanation of the reason why they are relevant for the professional development. All the activities/resources saved in this section can be linked afterwards to other areas or sections of the platform. Members can use the tool called "Webfolio" to create their own public e-portfolios, that is to say a personal website (Fig. 5) visible to all the members registered on the community. Members will thus be able to post personal comments on it or to interact with it through a rating system that will enable them to leave their thoughts on any activity/resource shared by teachers.

The "Professional development" section includes an operational tool that allows teachers to design and develop self-evaluation processes in accordance with their teaching and learning pathway. The aim is that of improving teachers' professionalism, bearing in mind the abilities that

were previously gained, those needing further improvement or those abilities that still need to be gained. The "Professional skills" and "Action plans" areas can be found in this section.

The goal of the "Sharing area" (Fig. 6) is to support professional dialogue among the teachers registered in the community, in order to share ideas/experiences/thoughts that may influence individual teaching activities and that may lead to an improvement. This area includes sharing and discussion groups.

The area "Teachers management" is for tutors only. Using specific tools, they can access all the resources that were saved by the teachers in their group on the platform. Tutors can also post feedbacks and comments to support teachers throughout the self-evaluation and professional development processes.

The area called "Community" is devoted to the platform internal messaging service.

3.3. Action plans (Luigi Rossano Angelini)

This section plays a key role in the TQM e-portfolio. The personal development plan, known as "Action plan" in the TQM project, was created by the research group. This plan allows teachers to manage their own training and learning programme through planning and personalisation, in order to reach the goals and objectives set. In this section teachers can reflect over their experience and compare it to the experience of their fellow teachers, from a peer-evaluation perspective, in order to define those skill areas that may require improvement measures. The ultimate aim is that of enhancing the students' learning process. The process consists of ten phases.

1. Focus of Action Plan

In the first step the focus of the action plan is set starting from a concrete situation that occurred in the teaching context; in addition, goals are set bearing in mind an action/improvement point of view.

2. Current situation/Field of action

The current situation is described in the second step. In other words, a description about the school/group for which the action plan is written (size of the class, number of pupils, age of pupils, learning profiles, school's philosophy, management) is provided. It also includes a description about the situation/problem and the area/s requiring actions (i.e. subject assessment areas, methodological teaching area, relations area, methodological socio-organizational area, cognitive and meta-cognitive area, technological area, reflective area, European context).

3. Goals and indicators

In this step (Fig. 7) there is a description of the ideal situation to be achieved through the actions carried out with regards to the chosen variables. Moreover, the indicators for quality process monitoring are described. Indicators can be chosen together with students, parents and fellow teachers.

4. Professional skills

In this step (Fig. 8) the action plan and the professional skills get connected with reference to the individual skills already entered into the e-portfolio.

5. Methods and tools for evaluation

Specific methods and tools for action plan implementation are chosen in this step.

6. Planned activities

In this step, planning takes place in order to allow the implementation of the designed action plan to reach the goals previously set.

7. SWOT analysis

An analysis of action plan's strengths and weaknesses is carried out in this step. Also opportunities and/or threats, such as unreasonable risks or high failure rate of the project, are taken into account.

8. Supporting resources

Project documentation, both essential and supporting, can be saved in this step (Fig. 9).

9. Achievements, Transferability and Further development plans

This section aims at analysing data using the empirical evidence obtained from the implementation of the action plan and, thus, it will be determined whether to continue with the action plan or not.

10. Reflections - Ongoing transformation processes

The last step activates the reflective and recursive processes that enable collaborative evaluation in the forms of peer and self-assessment. This is the theoretical framework of reference for the e-portfolio experimentation, since it highlights the cognitive and social "presence", as well as the empowerment and accountability processes that trigger transformative learning.

3.4. Figures and activity reports about the Italian and Austrian groups (Giulia Parrucci)

The group of Italian teachers involved in the experimentation was composed of fifty-four participants, eleven of them being VET teachers (national and regional technical or vocational schools). Thirty-five teachers involved in the experimentation fully completed the process. From that group, eight teachers involved in the experimentation belonged to the VET sector.

Figure 10 shows the activities carried out on the platform with regards to the following topics: discussion groups created (8), topics created (45), discussion topics created (45), improvement plans created (52), shared resources (156), comments posted to the discussion groups (68) and action plans shared (20). The activities carried out on the platform were monitored between March and May 2013, which was a period of high productive activity (see Fig. 11 discussion groups, topics, discussion topics, improvement plans) and materials sharing (see Fig. 12 resources, comments, improvement plans).

Figure 13 shows that for both projects and documents there is a higher tendency to upload text files and a lower inclination towards the use of resources, such as Action plans (6%), discussion

topics (15%) and posts (25%). It seems clear that other resources, such as video files (1%), images (4%) and bookmarks (0%) are not as usual and, consequently, the need to promote the use of such resources has emerged.

The group of Austrian teachers involved in the experimentation was composed of thirty-seven people. Data regarding the Austrian teachers is currently being analysed. At the moment, the only available information about the activities carried out on the platform regards the following topics: discussion groups created (13), topics created (10), discussion topics created (1), improvement plans created (9), shared resources (5), comments posted to the discussion groups (0) and action plans shared (2) (Fig. 14).

3.5. Participants to the experimentation (Federica Basco)

A special thank you goes to all the school teachers who took part in the TQM project. Their contribution has been fundamental for the experimentation. This was easily observed, especially, during the peer-evaluation process, which included co-designed activities organised thanks to participative and collaborative research. The participants' passion, their commitment to work day after day and their proactive approach turned the experimentation into an exciting activity, despite the challenges faced and the long way travelled before achieving shared knowledge and common goals.

We are glad to include the list with the names of the participants in the Italian group, followed by the participants in the Austrian control group.

Teachers in the Italian experimentation group: Rocco Alibertini, Gabriella Boschetti, Morena Cavallo, Brigida Cristallo, Simonetta, Cristini, Maria Daniela D'Alonzo, Pier Leo Masciarelli, Francesco Morelli, Maria Cristina Di Giovacchino, Rachele Nardella, Rosalba Felice, Angela Potenza, Gabriella Giampietro, Sabatino Quietì, Maria Iasci, Maria Antonietta Maesa, Lucia Moca, Stefania Ricciotti, Filomena Persichitti, Emanuela Salvischiani, Facondina Salvatore, Moira Tini, Adina Verì, Maria Paola Zaino, Katja Battaglia, Marianna Di Desidero, Assunta Di Giannantonio, Cristina Di Sabatino, Franca Frisa, Annalisa Giansante, Iside Lanciaprima, Roberta Barcaroli, Maria Grazia Borrone, Anastasia Ciavattella, Giovanna D'Andrea, Cristina Maria D'Argenio, Rita Di Marco, Pasqualina Di Paolo, Annachiara Di Pietro, Giuliana Giorgi, Maria Guida, Gabriella Nanni, Alessandra Ortolano, Carmelita Rosoni, Tiziana Vicentini, Antonietta Zocchi, Sandria Cavallo.

Teachers in the Austrian experimentation group: Sabine Ifkovich, Brigitte Mayerhofer, Jutta Egger, Daniela Longhino, Julia Kocher, Barbara Plamenik, Astrid Schreiner, Viktor Plamenik, Adele Hanin-Fehberger, Brigitta Hribernig, Susanne Moosbrugger, Petra Angleitner, Sabine Mair-Nehammer, Eva Ebenberger-Werluschnig, Heimo Bayer, Sonja Pustak, Gerti Jaritz, Kristina Kiendler, Norbert Stross, Maria Koppelhuber, Roswitha Kemmer, Manuela Willibald, Natascha Kogler, Claus Kothmeier, Norbert Tschinkel, Rosa Hamedl, Elisabeth Glavic, Maria Nagel, Birgit Schloffer-Suschek, Maria Gschaider-Kraner, Franz Nagel, Constance Schrenk, Claudia Schobe, Eva Leitner, Evelyn Tschernko, Andrea Volkl.

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