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MONTESSORI METHOD FOR ORIENTING AND MOTIVATING ADULTS

A MODEL FOR THE APPLICATION OF THE METHOD IN ADULT EDUCATION

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1. Introduction - Montessori Method for adults: experiences and indications for teachers, experts and common people who would like to accept the challenge of thinking the Montessori method in a new way

At the beginning of the XXth century, in some rural area of Western Europe, some schools inspired to the movement called “new schools” started to appear. One of the most relevant experiences took place in Villa Montesca, where a school was opened for assuring some basic education to the children of the working class. To face the basic problems related to the relationships of these children with the physical impact of the education, a new approach to the didactics was experimented by Alice Hallgarten. After these first years, Alice invited Maria Montessori at Villa Montesca and there, together, they elaborated and published for the first time what is universally known as the Montessori Method. What is quite unknown is the effort that Maria and Alice did to involve adults (especially women) in the vocational training.

This experience defined a very first attempt to adapt the principles experimented in “La casa dei bambini” in Rome to adults at risk of marginalisation. Some authors affirm how the formal education risks to be not inclusive if it doesn’t take into account the personal and social background of the adults (Gardner and Novotni, 2003). To interact effectively with others, an individual must be attentive, responsible and able to control impulsive behaviours (Landau, S., & Moore,1991). Adults with problems of marginalisation are often inattentive and forgetful and typically lack impulse control. Their social situation can become an "invisible disability" creating further barriers towards the reintegration in the labour market.

The opportunity to create an educative frame-method based on the Montessori approach set for adults is very actual and can give important results if applied to target groups with problems related to their relationship with the traditional form of learning and with the “sociality” of the education. Studies show that the problems are still very similar (Christophersen ER, Mortweet SL. Building skills that last a lifetime. 2003) to those highlighted in analysis about the relationship between the space and the content of education.

Adults with problems of social marginalisation are diffident towards the education and they generally believe that the skills needed for the life are better learnt out of the formal educative background. These categories of adults are in need of social skills as a basis to gain a better place into the society.

The MOMA approach experimented and evaluated in national laboratories whose results are explained in this book, is based on the effort to overturn the traditional assumptions determining strong barrier to the involvement of vulnerable target groups in the formal educative systems. Rather before and in terms of social pedagogy these problems were clearly expressed by Freire in his very relevant book ‘The pedagogy of oppressed’. The conclusions are in favour of an application of a specific pedagogy and a consequent didactic aimed to make less evident these barriers and to create a learning environment able to answer to the exigencies of the adults. But, if the educative tradition shows that the considered points are well evident to the authors and pedagogues (Knowls and oth.), the revolution in terms of practical didactical approach risks to be just a revolution of paper. The expected results on which this project is based are exactly the successful application of this method on vulnerable target groups, whose difficulty to be involved in a formal educative path come from the cultural resistance increased by the adults negative approach. Naturally, the Montessori method needs to be actualized, especially taking into account the influence of the ICT also in the adults cultural background, but the approach contains some very important points to be developed and experimented.

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MOMA MODEL

Principles of the Montessori Method	Pedagogical Axes	Impact Areas: Theory vs Practice
Absorbent mind	- Diversification of teaching methods to meet the needs and learning approach of adult learners - Personalization and co-designing of education - Participatory approach to programs and contents in order to facilitate the creation of Communities of learners - Intellectual stimulation of adults during the activities - Provocative teaching style to stimulate both critical and the lateral thinking	Creativity and Problem Solving → Systematic use of Problem based learning
Learning Environment	- Creation of a space (physical and conceptual) more connected and where personal comfort and continuous communication can become the rationales of learning technology (spatial and virtual) - Designing of approaches through team-oriented collaboration	
Experimentation & Exploration	- Development of the senses and tactile approach, involving also technologies - Stimulation of a visual approach and the ability to use one's emotional side (especially in didactic areas where it is apparently impossible to use these emotional competences: e.g. technical and scientific topics) - Developing the ability to solve (real) problems trough practical activities	Co-design of the educational path and participatory approach → Systematic use of the experiential and outdoor learning. Systematic use of the emotional switch as a start up of any learning session
Observation	- Developing a method to allow the educator to follow the progress of the adult learners; - Creation of a personal educational "calendar" which allows the adult to create his/her own educational path - Observational learning (also known as vicarious learning, social learning, or modelling) realized in term of observing, retaining and replicating new behaviours executed by others	
Independence	- Development of problem solving abilities and of a personal self-learning program - Development of the ability to create one's own educational program, also through informal and no-formal ways - Creation of a community of learners (long life) using also social media	Developing and Facilitating attitude of teachers and learners → Comfortable learning space, thought as a "civic centre". Systematic use of tools for the transparency of non-formal and informal learning. Teacher becomes a "thought provoking" tool

2. The Principles of the MOMA Model for the actualization of the Montessori Method and its application in Adult Education

In her Absorbent mind Maria Montessori underlines that "There are many official methods of education adopted by different countries, but no official system of education considers life itself or sets out to protect development and help the individual from birth. If education is protection to life, you will realise that it is necessary that education accompany life during its whole course. Education as conceived today prescinds from both biological and social life. If we stop to think about the question we soon realise that all those who are undergoing education are isolated from society. Students must follow the rules established by each institution and adapt themselves to the syllabus recommended by the ministry of education." (Montessori, Absorbent Mind, 10, Internet Archive)

These notations written in the fifties have still a very evocative effect. The following material and didactic units are dedicated basically to teachers involved in actions of education of adults. The goal is define the principle announced in the Method and verify step by step if and how the Montessori educative indication can be considered applicable to adults.

In this framework, the "actualised" Montessori principles defined in the MOMA Model are the following:

Absorbent mind

For Maria Montessori with the term "absorbent mind" we intend to refer to the mind's capacity to take in information and sensations from the world that surrounds it. It is common opinion and daily experience that the children show a mind's awesome ability to absorb.

Recent findings show as the attention of the adults increases if the senses are involved in the learning activity

Adults learn in different ways. *Visual learners* are stimulated by images, *auditory learners* by sound, and *kinesthetic (or tactile) learners* through touching, feeling and experiencing. When implemented effectively, videos in education can stimulate the senses to create a learning environment where new information can be more effectively retained.

As a practical consequence the indication coming from these assumptions show that the learning activities addressed to adults should be "more active" and no just theoretical and static.

Learning Environment

The prepared environment is important part of the Montessori's Method. It is the link for a child to learn from adults. It has also to be a place where the adults can learn from each other in cooperative way.

As according to Maria Montessori the Rooms have to be child sized allowing freedom of movement and

child friendly, physically and psychologically, it is un-doubtfully that the learning space has to be adult learners-friendly.

The learning space doesn't mean just "the place where we learn" but also the organization of the learning time. The adult Learners, have the same exigencies: when they learn they create their own world.

Experimentation and exploration

The adults involved in education can be lead to create their own way to learning. The learning experiences addressed to adults have to be active and not passive. Furthermore, the adult-learners have to be involved activating their knowledge and their personal values

The adult-learners like the children are naturally curious, and love to use their senses to learn more about the world. The involvement of a sensorial activity is very strategic for creating proper and permanent skills in the adult-learners. Exploring and experiment the world leads to the social competence related to the opportunity to stay in touch with other people that is one of the most relevant educative exigency of children and adults.

The educative activities addressed to adult-learners have to be not static, but dynamic, proposing different ways of learning and alternating them

The practical thinking and learning needs to involve the pleasure of having new knowledge and abilities. That is very evident with the learning addressed to the use of the ICT technologies. Once, the adults learn to use a technology they like to use it very frequently

Observation

For the education of adults a particular attitude is required by the educators in order to have the opportunity to Observe

Some educators and trainers often time unconsciously tends to becomes the center of the learning environment; constantly directing and giving solutions and instructions instead of allowing the participant to the educative activities find their own solution. As the adult towards the child in Montessori view, the trainer of adults has to be able to step back, provoking the idea of researching the solution, taking into account what the adults knew before the activity and what they are expecting to know after.

The consequence is the idea of a Community of learners where the teachers/trainer is NOT the owner of the knowledge but is the facilitator

Independence

"Never help a child with a task at which he feels he can succeed." – Maria Montessori.

It is always a goal of Montessori education in the classrooms to make the child independent and be able to

do things for himself. This is achieved by giving children opportunities to choose what they want to do, and to help the adults with tasks.

To express properly their autonomy the adults have to be able to express their social skills.

Be independent for an adult means being able to keep social relationships and the opportunity to keep a social role in the Community

PART 2 Montessori for adults in practice

3. Montessori lectures for teachers

The ideas expressed in the Montessori celebrated book are specular to how adult learners want to know, the relevance of what they are learning to what they want to achieve. To contribute to their personal growth the adult clients require to see the value of their observations and practical experiences.

There are evident differences in the set of exceptions that education provokes. For the Montessori children the exception were (and are) based on their “hanger to learn”; for the actual adults, the expression is strictly connected to the opportunity to improve their social and personal position in the labour market.

The following lectures intend to be a contribution to stir the debate about the opportune application of the Montessori method to adult learners.

3.1 Adults also have an Absorbent Mind

"The 'absorbent mind' welcomes everything, puts its hope in everything, accepts poverty in the same way as wealth, adopts any religion and the prejudices and habits of its countrymen, incarnating all in itself. This is the child!" (Maria Montessori).

For Maria Montessori the term "absorbent mind" describes the mind's ability to draw information and feelings from the surrounding environment.

It is common opinion and daily experience that children show the mind's incredible ability to absorb.

Maria Montessori underlines that, from birth and up to three years of age, children use their senses (touch, sight, hearing and smell) to absorb all that surrounds them. The child does this naturally, and without thought or choice. Maria Montessori referred to this period as that of the 'unconscious creation'. But is this only a childhood trait or is it still active also in adults?

The information unconsciously absorbed by children from their surrounding is used to develop their own personality, just as adults explore their world using the 5 senses.

According to Maria Montessori, approximately at 3 years of age, the child moves from the state of the unconscious absorbent mind to that of the conscious absorbent mind. It is during this conscious state that the child begins to intentionally direct and focus his or her attention on experiences which will then gradually develop.

The state of the “conscious absorbent mind” is an active trait in adults. They learn using their senses and by retaining information and conceptualizing it.

Recent findings show that the attention of adults increases when the senses are involved in a learning activity.

Adults learn in different ways. *Visual learners* are stimulated by images, *auditory learners* by sound, and *kinesthetic* or *tactile learners* through touching, feeling and experiencing.

The Montessori method can stimulate the senses and create a "sensorial" learning environment where new information can be more effectively retained.

As a practical consequence the indication deriving from these assumptions show that learning activities addressed to adults should be "more active" and no just theoretical and static.

3.2 A prepared learning environment for adult learners

In this Unit we define the ideas of a learning environment prepared for adults learners, based on the researches and observations of Maria Montessori and Alice Hallgarten

According to Maria Montessori

«The teacher's first duty is to watch over the environment, and this takes precedence over all the rest. Its influence is indirect, but unless it be well done there will be no effective and permanent result of any kind, physical, intellectual or spiritual».

The prepared environment is an important part of the Montessori's Method. It is the way for a child to learn from adults. It should also to be a place where adults can learn from each other in a cooperative way.

According to Maria Montessori the Rooms should be child sized allowing freedom of movement and child friendly, physically and psychologically. This learning space should obviously also be adult -friendly.

Maria Montessori said that the environment should be a place where to explore freely. The environment should to be ready and beautiful for the children and encourage work. In the same way the learning space should be designed for adult learners to relax and feel comfortable. It can be full of light and organized with comfortable chairs and sofas.

The learning space isn't only "the place where we learn" but also the organization of the learning time.

Are traditional learning activities designed to meet the needs of adult-learners?

Learning can be a "demanding great adventure". Therefore, it is the task of who teaches to facilitate and personalize learning: form the physical place and the organization of the working time to the learning and teaching methods.

Montessori defines "working" as an activity the child carries out and it is what people might define "playing". It is the idea of the relationship between enjoying learning activities and the task the children have to accomplish.

For adult learners it is not that different.

Maria Montessori defines this “working” since it is through this that children create their own world. It is “playing” but the teachers should take it very seriously!

Adult Learners have similar needs: when they learn they create their own world.

3.3 Experimentation and Exploration

According to Montessori the predisposition to think, act, behave, or proceed in a particular way are characteristics that we display before we even know what they are.

Children and adults tend to act naturally and instinctively. In Montessori philosophy, these characteristics are the key to understanding how the learning activity for adults and children can develop a real impact on the people knowledge.

Maria Montessori defines the tendencies of humans as

Orientation. Human beings want to know their relationship to the environment around them. As a practical consequence the adults involved in education can be lead to create their own way to learning. The learning experiences addressed to adults have to be active and not passive. Furthermore, the adult-learners have to be involved activating their knowledge and their personal values.

Exploration. Our earth is filled with wonderful sounds, scents, textures, tastes, and colors. As, Children are naturally curious, and love to use their senses to learn more about the fascinating world around them, we have to think that the involvement of a sensorial activity is very strategic for creating proper and permanent skills in the adult-learners.

Communication. The social competence related to the opportunity to stay in touch with other people is one of the most relevant educative exigency of children and adults. The learning activity addressed to adults needs to be communicative and cooperative in order to fulfill the expectation the have to be part of a Community.

Activity. People generally like to stay busy. As for the children, for the adults the movement can be very relevant. For some of them, expressly for those with physical problems, the movement is not necessarily a physical activity, but can be related to a mental variation of “states of mind”. That means that the educative activities addressed to adult-learners have to be not static, but dynamic, proposing different ways of learning and alternating them.

Manipulation. Humans need to take hold of their environment to understand it. It is the next step after exploration: once you have found something interesting, you will quite naturally want to use it in some way. This is how the adults conceived the concept of "tools".

The tools could be tactile or virtual. The concept of tool is related to “something I can use for

experimenting the knowledge acquired during the activity of learning". Thus, for the adults we need to consider the opportunity to put into practice the knowledge acquired. A lesson addressed to adults has to be not just practical but manipulative.

Repetition. The Children use to learn repeating a task over and over again. The aim of the repetition is mastering the task, but even after the ownership of the knowledge occurs, the children are used to continue to do the activity. In this case, doing the activities means sharing the pleasure of the knowledge. For the adults, we can observe the same process: the adults like to repeat the task they like more, enjoying the sensation that "now they are able to do it". The practical thinking and learning needs to involve the pleasure of having new knowledge and abilities. That is very evident with the learning addressed to the use of the ICT technologies. Once, the adults learn to use a technology they like to use it very frequently.

Exactness. The satisfaction of the results acquired is very important for the adults, as for the children. The learners have to feel that they now are able to do something exactly.

Abstraction. Using their emotional side, the adults are able to visualize events that have not yet occurred or that are not tangible. The learning addressed to adults have to be related also to their critical competence and their ability to forecast behaviors and situations.

The prepared learning environment (i.e., the Montessori classroom also for adults with its arranged materials and spaces) is built around these tendencies Because of this, educators inspired by the Montessori principles teachers do not need to force their learners to put into practice the knowledge acquired.

When the educators are able to remove any hindrances to an adults will and ability to learn the adults like renewed children will show their own way to the knowledge, their innovative thinking, and their limitless curiosity.

3.4 Observation

According to Maria Montessori and Alice Hallgarten with the term Observation we mean the attitude of the adults to follow the children in order to assess their abilities and progresses. Through the Observation the educators can learn about the child from a scientific and objective perspective.

This can be a way to reinforce the elaboration of programs and the connections to the children.

What Observation means for the adults-learners educators inspired by the Montessori and Hallgarten ideas?

For the education of adults a particular attitude is required by the educators in order to have the opportunity to Observe.

Some educators and trainers often time unconsciously tends to becomes the center of the learning

environment; constantly directing and giving solutions and instructions instead of allowing the participant to the educative activities find their own solution. As the adult towards the child in Montessori view, the trainer of adults has to be able to step back, provoking the idea of researching the solution, taking into account what the adults knew before the activity and what they are expecting to know after.

The consequence is the idea of a Community of learners where the teacher/trainer is NOT the owner of the knowledge but the facilitator.

Who's the facilitator

These three definitions can help the educators to understand better the role of facilitator

- Hogan defines a facilitator as a "self-reflective, process-person who has a variety of human, process, technical skills and knowledge, together with a variety of experiences, to assist groups of people to journey together to reach their goals".

- Hunter, Bailey, and Taylor defined facilitation as "a body of knowledge and skills which seeks to empower groups of people to work co-operatively towards creating a more co-operative and sustainable world"

- Schwarz defined group facilitation as "a process in which a person whose selection is acceptable to all members of the group, who is substantively neutral, and who has no substantive decision making authority diagnoses and intervenes to help a group improve how it identifies and solves problems and makes decisions, to increase the group's effectiveness".

Allow for the Possibility of Change

The recording of the group dynamic supports the open mind of the "observer teachers".

The educators should have a sort of "day journal". As the children realized the "Montesca journal" at the beginning of the XX century, where they updated the progress of their knowledge, thus a new "educative Journal of the learning Community" can help the group to see at the progresses with fresh eyes.

3.5 Independence

"Never help a child with a task at which he feels he can succeed." – Maria Montessori.

It is always a goal of Montessori education in the classrooms to make the child independent and be able to do things for himself. This is achieved by giving children opportunities. Opportunities to move, to dress themselves, to choose what they want to do, and to help the adults with tasks. When the children are able to do things for themselves there is an increase in their self belief, self confidence and esteem that they may carry on throughout their life.

To express properly their autonomy the adults have to be able to express their social skills.

Being independent for an adult means being able to keep social relationships and the opportunity to keep a social role in the Community.

The traditional approaches to studying the competitive attitude of adults as an advantage to obtain social results, do not explain adequately how the adults (especially those with social needs) can react effectively in turbulent and often chaotic environments like it seem to be for instance the labor market in time of crisis.

To assure a skill-based view focusing on the development and the application of core competences we need go over the traditional approaches.

The real social skills of adults, able to assure then the needed independence, are those based on dynamic core competences and related to a meta-learning strategy.

For the adults, designing the competences needed to be independent means elaborating a set of responses to real and effective problems.

The approach cannot be then participative and cooperative. A strategy to assure the basic social skills to adults should be based on a real analysis of real social problems.

For these reasons, the activity of education has to be preceded by an activity of focusing during which the adults are called to express their social needs.

Some of them could be in difficulty in expressing their social needs, particularly those with real social problems. The support to help them to make the needs come out has to be provided by the Learning Organization, through a process of focusing and facilitating the Community of learners.

4. Teaching materials and didactic exercises

The Montessori teacher works as a guide and facilitator and has the specific role of creating a well-prepared environment and an atmosphere of learning and inquisitiveness with the purpose of increasing the participation of the group to the learning activities.
Respecting the principle of independence the didactical organisation is structured in allowing the clients to learn from their own discoveries and draw their own conclusions.
The exercises presented in the following section are addressed to provide the teachers practical tools that, rather than supplying the adult learners with answers, require them how they would solve problems and situations, actively engaging the learners in the learning process.
Some of these exercises are "Montessorian" in philosophical sense and might be considered quite "heretic" by the purists but all of them are addressed to enhancing critical thinking skills. But we think that new proposals in education need to go beyond the normal way we are looking to education and investigate new ideas without prejudices and bias. At that is what the following exercises are going to put into practice.

PRINCIPLE: THE ABSORBENT MIND

UNIT 1

DIVERSIFICATION OF TEACHING METHODS TO MEET THE NEEDS AND LEARNING APPROACH IN ADULT LEARNERS

It has been established that education exerts protective effects on both memory and crystallized intelligence of adults (accumulated knowledge), with minor effects on fluid cognition (processing speed and abilities). Cognitive inactivity has been associated with reduced performance on fluid intelligence measures, while use of cognitive abilities can minimize effects of low educational levels. Other research supports the effects of socioeconomic status and prior life experiences on cognitive performance in older adults as well (Kramer et al., 2004).

While certain areas of thinking show a normal decline such as age, others remain stable. Moreover, interventions may actually slow some of the changes that occur.

Intelligence: "Crystallized" intelligence, i.e., knowledge or experience accumulated over time, actually remains stable with age. On the other hand, "fluid" intelligence or abilities not based on experience or education tend to decline.

Memory: Remote memory or recalling past events that have been stored over many years remains relatively preserved in old age. Recent memory or the formation of new memories, however, is more vulnerable to aging.

Attention: Simple or focused attention such as the ability to follow a television program tends to be preserved in older age. Difficulties may be encountered, however, when divided

attention is required, such as trying to pay attention to the television and simultaneously talk on the telephone.

Language: Verbal abilities including vocabulary are preserved as we age. Common changes occur with word retrieval or the process of getting words out. Finding words takes longer and it is more difficult to remain engaged in a conversation or try to recall names of people and objects. The information is not lost, but it is more difficult to retrieve.

Reasoning and Problem Solving: Traditional ways of approaching solutions are maintained in older persons. Problems that have not been encountered during one's life may take extra time to figure out.

Speed of Processing: Aging affects the speed with which cognitive and motor processes are performed. This does not mean that the activities cannot be performed, but rather that they take longer!

Maria Montessori discovered through scientific observation of children that they are not empty vessels to be filled - they are intrinsically motivated doers. Nowadays, research in psychology and neuroscience validates Montessori's conclusions about children, but also validates the absorbent mind approach to adults.

Educational activity in practice

Participatory approach to the contents and to the Community of learners: reconstruction of the community

The first stage is to transform a group of individuals into a Community of learners.

Step1

The teachers select a video or a short text about the principle of education and the right to be educated. The term is "what does being educated mean to me"

Examples of texts and videos.

Step2

The class is divided into groups (of two or three people) with the task to re-construct their personal educational history. The discussion among the group should aim to identify what of the educational experience of adults remains in the present time.

Reconstructive Scheme

- What are the positive aspects I remember about my education
- What was critical or negative

- Why I gave up
- What criticalities I suffered that make difficult or impossible for me to carry on studying (relationships with people, economic issues, etc…)
- A special teacher I met
- A “very bad” one I remember

  Other….

Step3

Discussion with the assistance of teachers and listing common ideas about education in general.

The final document is based on the expectations of the adults, as a result of what was wrong and what was positive in their personal educational experience. The class draws up the “rule of a good educational experience”: a shared document containing a summary of the opinion of the groups .

Pedagogical remarks

The teacher in the Montessori method is a facilitator whose task is to stimulate absorbent activities. In this exercise stimulation is given through an emotional approach.

UNIT 2

PERSONALIZATION AND CO-DESIGNING OF EDUCATION

The personalization of educational experiences is one of the main principles in the Montessori approach. In order to allow adult-learners to benefit from education, the model she proposed was that of an **authentic learning.** This term is applicable to a wide variety of educational and instructional techniques focused on connecting what adult-students are taught in long life education to real-world issues, problems, and applications. The basic idea is that adult-students are more likely to be interested in what they are learning, they are more motivated to learn new concepts and skills and are better prepared to succeed if what they are learning mirrors real-life contexts, equips them with practical and useful skills and addresses topics relevant and applicable to their lives outside the school environment.

Educational activities in practice

Step 1

Select a real life situation and define personal and social competences.

The group discusses a situation proposed by the teacher/facilitator in which it is possible to focus on the reaction of people when facing a critical situation. The identification of the situation is related to the specific issue of the group of learners and it can change depending on the common characteristics of the members. For instance if they are long-term unemployed, the situation should be based on episodes deriving from searching for a job.

Lecture: “the personal and social competences in real life”.

The teacher must give a brief explanation of the role of relational competences in real life, spending some time in defining the contents of social and personal competences.

The situation is defined after a discussion with the adult learners, and it will be presented preferably in written form or recorded on video or in mp3 format.

The situation is related to a critical issue, experienced by a member of the group. It should be defined in a discussion and represent the general criticism to which the adult learners have been subjected to in real life.

Step 2

What is wrong and what is not

The teachers lead the groups in discussing and analysing the positive reaction to the critical situation. What social and personal competences should have been used in order to overcome the situation? Based on a list of competences (see attachment) the adult learners discuss and define the competences to be activated.

This discussion should be organized after the group has reflected on the topic of social competences, therefore some days after the lecture on this issue.

Step 3

Personalize your skills

Students learn in several different ways, and studies have shown that learning skills can be improved when instructors and students match the same cognitive and emotional level, thus creating mutual interaction and understanding (Peck, 1989). History has demonstrated that, through the use of storytelling, a sense of community develops among those involved with the story (Sawyer, 1942).

Learning can be improved by the elicitation and use of informal learning (Erickson & E. Rossi, 1976). Through storytelling, the instructor can help students give up some of the limitations of their viewpoints in order to achieve a state of receptivity to the application of course content to which they are being exposed. All aspects of learning create experiences, whether the content be subjective or empirical in nature. Storytelling develops a context for active learning and ownership of the learning, both in terms of process and content. The current interest in storytelling and narrative can be seen in many areas, in both theoretical and applied disciplines (Wills, 1992).

Pedagogical remarks

In the Montessori method applied to adults, learners are not given a list of resources. The Montessori teachers propose “authentic” activities, addressed to examine the task from a variety of theoretical and practical perspectives, using a variety of resources, and require learners to distinguish in the process relevant from irrelevant information.

In the Montessori method learning can develop a sense of freedom. To be effective, the right way to understand and learn the different phenomena related to the acquisition of knowledge freedom of expression of the cognitive side of an individual is paramount.

Competences to be acquired

- storytelling
- relational abilities
- managing the emotions
- working in group
- self-esteem

UNIT 3

PARTICIPATORY APPROACH TO THE PROGRAMS AND CONTENTS IN ORDER TO FACILITATE THE CREATION OF COMMUNITIES OF LEARNERS

Maria Montessori believed that students should be actively involved in their own learning, from selecting stimuli to setting objectives. Moreover, in the Montessori approach learning occurs in a cooperative, nurturing atmosphere. This is particularly important in the case of adult learners: a participatory approach can facilitate the creation of communities of learners which are at the basis of any social development which allows individuals to acquire their own set of social skills and positively implement the process of socialization.

Central to the concept of social/participatory learning are the processes of *action, reflection, communication* and *cooperation.* Each of these processes is characterized by particular tensions and contradictions since they are never simple or consistent. Action moves from the group to the individual and vice-versa and embeds *need* and *competence,* reflection is the product of the opposition between *distance* and *identification,* communication swings between *unilateral* and *multilateral* control and, finally, cooperation oscillates between *consensus* and *dissensus.*

Reflection is central to the experiential learning process. Groups learn more about issues and causes and devise home-grown solutions through investigation, reflection and discussion. Individual participants learn about themselves and their abilities through the introspection and reflection built into the process.

Participation is a way of viewing the world and acting in it: in this sense the participatory process is a social learning process because it revolves around finding optimal and dynamic balances between oppositional processes that are in accordance with the peculiar conditions and needs of concrete contexts and challenges. In participatory processes there is a deliberate focus on action: adults should not only be receivers but also producers of messages.

In particular, a participatory learning process emerges among groups of individuals who share differing knowledge and experiences and involves the revelation and integration of different and often contrasting viewpoints. Social and participative learning is both an outcome of and an essential input to effective cooperation within a group. It arises from a process through which individuals become aware of how others understand reality and reflect upon the alternative ideas and experiences they encounter. Such learning occurs when people interact and share diverse perspectives and experiences thus building relationships and developing networks through the process of engaging with others: in this way it is possible to mould a group of individuals into a community of learners.

A participatory process enables self-expression, and can bypass some of the formal institutionalizations of knowledge that prevent the expression of the participants' needs and thinking. They can express their real needs and priorities, allowing problems to be defined correctly and responsive measures to be designed and implemented. Participatory activity takes a multi-track approach. It can combine information from many different sources, qualitative and quantitative data and different phases of a process. It is therefore perfect for dealing with personal and social issues where there are diverse opinions.

The process of working and achieving things together can strengthen communities. It can build up confidence, skills, capacity to co-operate, consciousness, awareness and critical appraisal. In this way it empowers adults more generally by enabling them to tackle other challenges both individually and collectively.

Educational activity in practice

Participatory video (PV) can be an interesting exercise. The definition of PV stresses many "participative" elements: it is a creative use of technology; people are involved in the process of creating their own film, and it is a group-based activity. PV is directed more towards reflection than towards the actual production since the whole process is centred on narration and participation.

The idea behind this is that making a video is easy and accessible (the video can be done with a simple mobile phone) and is a great way of bringing people together.

Step 1 - Creation of a story within the group of adult learners

PV is seen as a collective storytelling and as the narration of expressive, narrative and identity needs. Through the building and rebuilding of the participants' narrations and talks, the group has to single out what story/stories they would like to tell and film.

The teacher organizes creative activities in order to stimulate ideas and build the group confidence, encourages and praises the stories of each member, encourages the participants by stressing the fact that everyone has a story to tell and the right to be listened to.

Tools and cross-sensory exercises which stimulate creativity can be used such as role-play, games and group exercises as well as hands-on facilitation experiences, body movement, drawing etc. in order to spur the imagination of the adult learners to create original stories which go beyond existing themes and narratives experienced in everyday life.

The process stems from some shared ideas. The teacher has the task to help the participants to bring together different ideas, viewpoints, methods, experiences in one story around a common theme in which group members, starting from their own narration, can put elements together and create a shared story.

The conceptualization of the personal narratives for the creation of a script, a sort of storyboard for the PV project, is in general up to the teacher, if the participants are not confident enough, but must ensure that they direct this activity and recognise the story as their own (better not to instruct or suggest but encourage participants to think about what exactly they want to communicate).

Step 2 - The roles within the group: casting the crew

This phase is related to the allocation of crew roles for creating the video. The roles can be allocated on a flexible basis.

After having explained the main roles (cameraman, camera assistant, person, sound/monitor assistant, interviewer, production coordinator, editing assistant etc.) of the crew (who they are, what they do, what are their responsibilities) each participant says in which part of the video making he/she would like to be involved in: in this way it is easier to focus on the project since everyone knows exactly what to do.

It is important to underline that all participants will also be actors/actresses. If someone wishes not to stand in front of the camera, he/she could help out by doing some other behind-the-camera jobs.

Step 3 - Shooting the story/stories

Participants need to start thinking about creating a story using the camera. From now on the script becomes real. The participants are directors, audience and protagonists and the PV is finally taking shape.

The participants must film following the storyboard which, in our case, has a basic narrative structure.

The storyboard is a point of reference when filming and the participants can be flexible. There is no script which must be strictly followed but only a helping guideline.

In this phase teachers must ensure that all participants understand that they have their own role and encourage the group during filming. The feeling of "empowerment" can be a stimulating experience for the group. This phase enables the participants to become creators and is therefore a great catalyst for action and for change.

Step 4 - Screening back footage

The most important way for PV to foster consciousness is periodically reviewing the action. The ability of a video to replay footage instantaneously using the playback function creates a lively feedback loop and serves to reflect back "our reality". Screening back footage and reflecting upon successes, challenges, mistakes and lessons learned gives the opportunity to develop the capacity and even the habit of shifting viewpoints, gradually building an inner observing manager.

The participants are fully engaged in the process and they can also gauge, step by step, their development and proficiency.

In this transversal phase the teacher must carefully plan both the screening and the content, taking into account each participant's role and preparing a list of key questions to stimulate feedback and discussion. A very good exercise is also to focus on what the participants think is missing or could be improved.

Step 5 (Not mandatory) - The editing process

This is another collective exercise: the participants make all decisions together about what is to be included and what left out. Through forming consensus a truer, more balanced picture can emerge.

The technical editing process can be carried out by the teacher (once the group has selected the images), by the teacher with some members of the group (the ones who want to take part also in the technical realization of the video) or by all the participants (if all of them want to be also actors).

Pedagogical remarks

PV can also be seen as a new way to reconstruct one's autobiographical memory. Maria Montessori used stories (the Great Lessons) rather than debate or direct instructions to communicate and inspire the learners, emphasizing the subjectivity and freedom of human beings to explain what we might become as a consequence of our actions.

By "planning, reflecting, choosing, and acting, people make themselves"; therefore it is not important that individuals define themselves, but how they exercise their freedom to do it.

The development of *video-taping* techniques can help in defining in practical terms the relationship between human functions - which allow to integrate thoughts, representations, feelings, needs, intentions and ambitions of the individual - and the ability to abstract and to represent the story.

If autobiographical memory provides a dynamic and potentially active social representation of human experiences, and its role in self-definition and organization of personality is known and accepted, there is still the need to explore the possibilities offered by the system of social relationships based on new technologies (the so-called social networks).

This process has also tried to use the dynamic experiential memories associated with events considered relevant characterized by the presence of multiple processes and mechanisms, as pointed out by Montessori in the so-called multi-sensory imagery, an essential element of autobiographical memory able to facilitate the building and storage in the long term of mental representations.

UNIT 4

INTELLECTUAL STIMULATION OF ADULT LEARNERS DURING THE ACTIVITIES

Montessori, emotions and maths

Montessori believed that it is possible to introduce maths to students in terms of "materialized abstractions." "Math phobias" are a common symptom in learners who have had little or no introduction to manipulative maths during their sensitive period (3 and 6 yrs). The same phobia can be retraced in adults, related to the solution to day-to-day monetary problems and economy which require mathematic competences.

Since the very first experiences in the Children's House, Maria Montessori produced a great deal of material for learning arithmetic so that the children would familiarise with numbers at an age when they have a natural interest in sensorial work. What they learn through the senses at this age is absorbed into the unconscious, and it is an easier mechanism compared to storing new information at a later age.

In order to allow the children to master the meaning of arithmetic values, different colours were selected (it is the idea and practice of the use of rods and scales to exercise counting skills).

The aim of the exercises is also to overcome the apprehension raised by the sheer size of the figures which may create difficulties in summing them up. In the Montessori method competence and counting skills are acquired by the use of counting beads. The units are single gold beads, the tens are bars of ten gold beads, the hundreds are squares made up of ten 10-based bars, and the thousands are cubes made up of ten hundred-squares. This may be criticized as clumsy or materialistic but for most people it is a necessary step to understand numbers.

Moreover, children are not really interested in blocks and beads for long without the real intellectual interest of associating them with sizes and numbers, and when they have achieved the manual dexterity to build them up they want to move on to some new difficulty.

If we start with a real idea of numbers, gained from the use of a tactile approach and visual ideas of materials as rods and scales, it is possible to help adult learners to deal with more complicated figures or mathematic expressions related to monetary problems, not in global terms, but referred to their daily life.

This concept is based on a closed learning cycle. In the sensitive period, children prefer to have a tactile and visual approach and it is therefore helpful for them to use materials related to numbers. During the following period, the sense of abstraction tends to prevail, moving on to adult and older age towards a new need for a visual approach.

Educational activities in practice

Exercise and learning experience: visual learning for daily accounting and mathematics.

This exercise introduces the concept of economic and financial maths applied to daily life and is addressed to adults who are experiencing social difficulties due to economic problems. It provides the learners with the necessary competences to improve the level of responses and reactions in the relationship with banks and/or public organisations. In fact, these learners would find it complicated to read and understand financial documents and it could therefore be a problem for them to ask the respect of their rights or request any changes or improvements in contractual terms and conditions.

Step 1

The Teacher selects a document related to personal accounting: a bank statement or a monthly loan report explaining then how to read it and guiding the adult-learners in understanding the figures and how to calculate them correctly.

Step 2

The teacher selects the main/more relevant concepts and writes a brief summary describing how to calculate the figures as well as the meaning of the different headings. Then selects a colour for every concept and writes a short text using the same colour for the letters (e.g. for the concept of interest rate, yellow, so the text will be written in yellow letters). The teacher assigns the colour-marked concept to a learner or group of learners in order to develop this specific knowledge (adults must read and learn the content in order to be able to explain the concept, becoming teachers themselves).

Step 3

The coloured texts related to economic and financial concepts are written on a poster hung in the classroom in a sequence following the bank report. This will result in a “big coloured explanatory bank report. The learners will then be able to read the text and receive new assignments restarting the cycle. In the case of similar or common concepts to be retraced in different financial documents, the teacher will mark the topics using the same colour.

Pedagogical remarks

The Montessori idea of stimulating creativity using a visual approach and the sensorial Exercises were categorised to cover eight different groups of senses: Visual, Tactile, Baric, Thermic, Auditory, Olfactory, Gustatory, and Stereognostic.

In the Montessori Visual Sense Exercises it is possible to learn how to visually discern differences between similar objects and differing ones.

According to Maria Montessori “the sense of touch is spread throughout the surface of the body, the Exercises given to the children are limited to the tips of the fingers, and particularly, to those of the right hand.” (Montessori, The Discovery of the Child).

As an example, in the Stereognostic Sense Exercises, the child learns to feel objects and make recognitions based on what he/she feels. “When the hand and arm are moved about an object, an impression of movement is added to that touch. Such an impression is attributed to a special, sixth sense, which is called a muscular sense which permits many impressions to be stored in a “muscular memory”, which recalls movements that have been made"(Montessori, The Discovery of the Child).

UNIT 5

PROVOCATIVE TEACHING STYLE TO STIMULATE CRITICAL AND LATERAL THINKING

There is a significant body of literature around critical approaches on educational relationships defining the role of facilitating teaching in terms of accessing, exploring, and making explicit various aspects of the unconscious and embodied knowledge (e.g., Higgs & Titchen, 2007; Leitch, 2006). The integration of creativity into the curricula addressed to adult learners is a quite recent achievement and the result of a non-academic approach to lifelong education.

According to these new ideas authors such as Newton and Plummer (2009) and Herteis and Simmons (2010) define creativity in terms of a new ability to solve problems and to find inner resources to increase the level of knowledge and competences, not only through artistic activities. The art of creating collages, for example, can support an adult's acquisition of knowledge, but the idea of collages in this case is related also to a system of new thoughts and perspectives.

In this instance, it is possible to define in teaching terms "meaning-making" as the ability to reflect at a meta-cognitive level on identity development and the construction of a new cognitive ability and meaning in adults. The Montessori approach elicits questions about role constructs and identity. The solution proposed by Maria Montessori is to foster a high level of creative approaches not only reserved to artistic activities but related to all daily didactic actions of both teachers and students. This idea is not new. According to Aristotle, "the soul never thinks without an image" (cited in Arnheim, 1969, p. 13). Image-making and our perceptions of it are needed to make sense of the world (Arnheim, 1969). Through art, people are able to create conceptualizations of their understanding about the specific ways they see the world (Efland, 2002). However, what Maria Montessori proposed was to consider the role of visual stimulation not only reserved to artistic activities but in general as a part of didactic connections. As regards the stimulation of adult thinking, Bruner (1969) associates visual experience and the related storytelling experience and its benefits to thinking, viewing visual perception as a cognitive activity. He argues that later disciplinary thinking activity serves as a form of reasoning and a way to think with the senses. Arnheim maintains that "the visual approach is the most powerful means of strengthening the perceptual component without which productive thinking is impossible in any field of endeavour" (p. 3). Such divergent thinking is critical to creativity; as Blythe and Sweet (2011) affirm, creativity "demands applying, analyzing, and evaluating - the higher-order skills of Bloom's taxonomy" (para. 2). In fact, when Bloom's taxonomy was revised in 2001 by Anderson & Krathwohl, "create" was placed at the new pinnacle of the cognitive taxonomy, thus joining other levels that characterize graduate level work: analysis and evaluation. Creativity can thus be thought of as the highest form of thinking, and is necessary for innovation, particularly in teaching.

Maria Montessori insisted on explaining how Aristotle's proposition that inspiration did not come from the

'divine' is true; she believed that beauty could be found in nature and that nature itself should be and is the most infinite source of creative inspiration (Turner, 1982). It is important to keep in mind that Montessori developed her educational philosophies around the turn of the 20th century. At that time, modern art was just barely gaining momentum, and most of it was considered offensive and appalling. Montessori clearly explains well the links between creativity and problem solving (Ruscio and Amabile, 1999). The Montessori method helps students to develop strong problem solving skills. It has been shown to cultivate divergent thinking and problem solving in a way so that it transfers to the domain of creativity (Lillard, 2005).

Educational activity in practice

Step 1

The teacher asks the learners to point out a specific weakness in their school experience. The discussion is focused on what, according to their point of view, they feel was not properly developed in formal education. Adults may in fact believe that their problems at work and/or in their daily life could derive from the lack of those competences which were not properly developed when they were attending school.

The end result of the discussion will be a list of "educational weaknesses" written on a poster hung on the classroom wall, written on a tablet or posted in a specific group on Facebook. This will be a tool related also to the competence mapping of the learning community.

Step 2

To each area of potential or real weakness the group decides to cover at least one of the competences missed during their educational experience. Some "weaknesses" could be common to all the learners or to the majority of them.

The teacher proceeds then in assigning a task to discuss these weak points to find the didactical resources in the net or in the Library, giving the time to examine in depth the learning material and take a positive action.

Step 3

The learners will discuss the topic regarding the weakness(s) (individually or in group). The debate will be focused on a diverging approach related to HOW this newly acquired competences can help the learners to find a solution to the problems. The idea to be discussed is related to the meaning of knowledge and about HOW the knowledge acquired can help in real life.

Pedagogical remarks

Montessori's approach to education advocated that people's natural desire to learn could be successfully nurtured and assisted as long as they are provided with the right environment and the appropriate materials.

The principal ideas in adult teaching and learning in the Montessori approach in terms of creativity and stimulation (Oberle and Vinson 2004) are based on the fact that the method tries to contribute to passive learning (adults often attend lessons without interacting - Hamre and Pianta 2007). Such an approach to learning belies the principles of constructivism that much research on human learning shows to be effective. In fact, many educators now call for one constructivist approach in particular, playful learning, as a developmentally appropriate alternative to didactic instruction (Fisher et al. 2011)—as a method to help adult learners in the ways they naturally learn.

PRINCIPLE: LEARNING ENVIRONMENT

UNIT 6

CREATION OF A MORE CONNECTED SPACE (PHYSICAL AND CONCEPTUAL) WHERE PERSONAL COMFORT AND COUNTINOUS COMMUNICATION CAN BECOME THE RATIONALES OF LEARNING TECHNOLOGY (SPATIAL AND VIRTUAL)

It is well known that one of the factors that contributed to the success of the Montessori method is critical scrutiny of the traditional educational environment.

Montessori's analysis led to the creation of educational spaces truly suited for learners. By adapting environment and surroundings to the learners' nature the Montessori classroom is a place where it is possible also to relax and learn. The physical space where the teaching is carried out cannot be created causally but requires attention and care: this is the concept that leads to the so-defined Montessori Prepared Environment. Montessori stated that the process of "absorbing" occurs also through the senses. A well-prepared, learner-centred environment is a sensorial one, which reflects beauty, simplicity, and order. It provides well-chosen materials and activities, which are required for learning. Everything is carefully selected by the Montessori teacher in order to best facilitate the child's learning.

The Montessori space must be attractive, welcoming, and conducive to learning: a space large enough to accommodate all the learners, providing them with free and comfortable movement. It must provide areas for all daily activities as well as where to store the equipment under the personal care of the community members.

The "learning environment" that the MOMA model intends to promote for adult learners is based on the following pedagogical principles:

The learning space must be built around two main principles which are physical, and socio-cultural. The physical environment includes objects such as: chairs arranged in a circle or around a square table, better if comfortable ones; free access to the library and to other information resources and laboratories. This space does NOT force people to keep "still" but encourages movement and exchange of ideas.

Nowadays the *Montessorian* "learning environment" is based on the physical and the virtual principle, both allowing to explore the socio-cultural space. The virtual environment completes the physical environment and offers the learners an opportunity to work outside the restrictions of time and place. Individuals do not need to sit in their chairs to discuss the topic but are free to contribute as they wish. They are free to explore details and processes over and over again, breaking the topic down to images,

listening again to key explanations, revisiting challenging concepts. They should also have free access to the online library collections of materials at anytime from home.

The socio-cultural environment is the basis of good teaching practices, and its role in shaping an appropriate *learning environment* is summed up using just a handful of keywords. These are used to relate to actions taken by the teacher: modelling; coaching; scaffolding (and fading); and actions requested of the learners: articulating, reflecting and exploring.

It is proper also to add to this list the word blending. Blending learning is a new method which comprises the use of both physical and virtual learning environments. Blending means to make informed and considered choices as to the activities, tasks and tools used to structure learning pathways. Finding an appropriate blend or design is often a process of trial and error informed by reflective practice.

Making this type of informed choices amounts to a process of practice-based learning, involving the exercise of professional judgement founded on an educational rationale. The *Cognitive Apprenticeship* framework is one tool which can be used to help clarify this rationale and hence help to hone the capacity to make appropriate judgements, no matter what combination of physical, virtual or blended setting you work in.

Educational activity in practice

A participatory approach to the realization of a Montessori space for adult learners

Step 1

Creation of the Group and Lecture.

Organization of a group of experts in adult learning with different competences, members of the school/education organization provider or external.

The commitment of the Group will be a revision of the learning space according to the Montessori principles.

The setting of the space must be organised with simple and practical indications applied to adapt the places to the Montessori principles.

In the first phase, the experimentation foresees preliminary lectures on the Montessori principles about space followed by a discussion about the impact on adult learners.

Step 2

Participatory meetings. The group organizes meetings with adult-learners, teachers and instructors. It is recommended that the following list of open questions and discussion points be prepared:

- what kind of interconnection can be activated during learning time (physical and virtual)
- what is perceived uncomfortable
- what could be considered as very comfortable
- ideas about the individual learning space
- position of the teacher
- etc…

Step 3

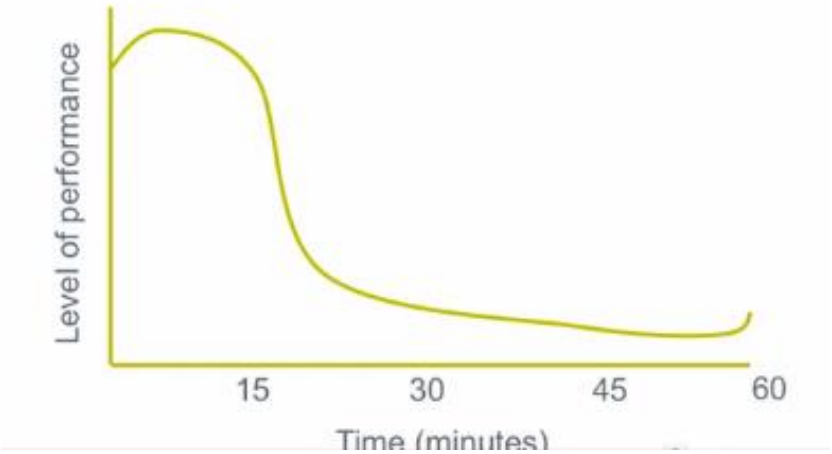
Create a practical guide to the Setting of the learning space. The setting guide is NOT a generic document, it contains the specific guidelines related to the specific organization involved: it is the guide for that specific institution, even though general observations can be added as a foreword intending to define the adoption and modernisation of principles.

Pedagogical remarks

In the Montessori approach the idea of a prepared environment is very important. When considering the physical environment we should take into account the fact that the place should stimulate the sensorial approach of adults. We should also organize accordingly the learning time in order to facilitate the balance life-time/working-time/learning-time. A virtual space could take advantage of the social networking in order to facilitate the exchange of information and the creation of a community of learners.

Please, don't forget the attention curve

FIG 1: ATTENTION CURVE
FROM GIBBS (1992) LECTURING TO MORE STUDENTS



UNIT 7

APPROACHES THROUGH TEAM-ORIENTED COLLABORATION

Prompted by the increasing presence of different cultures in groups of adults taking part in educational experiences researchers have developed a strong interest in surface-level diversity in group contexts in education of adults as well. Surface-level or demographic diversity refers to the extent to which a unit is heterogeneous on characteristics such as age, gender, ethnicity, functional background, and organizational tenure. In addition to the surface-level composition of the group, deep-level diversity, or differences with respect to attitudes, personality, and values, has also been investigated (Harrison, Price, Gavin, & Florey, 2002).

The dynamics of diversity are especially salient in groups, where the level of face-to-face interaction is high, and members must often rely on one another to perform their tasks effectively as happens in educational activities.

The discussion about diversity does not involve only the primary and secondary education but also work organizations that include members who can be identified as belonging to distinct groups and finally reaches the topic of education of adult learners.

Conflict is a common outcome when members of different groups interact and especially in education of adult learners the approach of teachers and educators can lead to express refuse of the contents.

Reactions to it have led to consider the opportunity to “put the cultural differences in evidence” organizing activities that emphasize the characteristic of minorities. Often, this is not a solution to conflicts. Adult learners involved in education, especially those that are in search of an opportunity of integration in employment or in society, want to feel to be part of the new community and prefer not to underline the fact they are different or they come from another cultural context. As consequence, adult learners involved in educational initiatives prefer not to be considered in their diversity but to have a successful path to integration in the new receiving social and cultural context.

However, several theories have been used to explain the negative outcomes of diversity in education and in general. According to social identity (Tajfel, 1978) and self-categorization (Turner, 1982) theories, people define and differentiate themselves in terms of group memberships. Categorization processes may be triggered when members are dissimilar, resulting in the tendency for individuals to evaluate members of other subgroups more negatively than members of their own subgroup (e.g., Brewer, 1979; Turner, 1982). As members are motivated to maintain their social identities, they exhibit a favorable bias towards others who appear to have similar characteristics (Tajfel & Turner, 1986; Turner & Haslam, 2001). Another theoretical approach that has been used by diversity researchers is the similarity–attraction paradigm (Bryne, 1971), which suggests that people prefer similarity in their interactions. Individuals are attracted to

similar others because they envision that their own values and beliefs will be reinforced.

Social identity, self-categorization, and similarity–attraction theories lead to the same general prediction: high diversity teams will tend to have less positive attitudes toward each other, which may translate into conflict among team members.

As described above, some theories have been used in reference to surface-level diversity, but authors also apply them to deep-level diversity in those underlying attributes between people in terms of values and personalities.

As we know, culture has been defined as “The system of values, beliefs, and ways of knowing that guide communities of people in their daily lives” (Trumbull, 2005, p. 35). It is quite evident that teachers involved in education of adults are in need to acknowledge students' diversity and incorporate their pluralistic backgrounds and experiences into the learning experiences and classroom environment. In “culturally relevant pedagogy” (Ladson-Billings, 2001), “culturally responsive teaching” (Gay, 2000) teachers “develop the knowledge, skills, and predispositions to teach adult learners from diverse racial, ethnic, language, and social class backgrounds” (Weinstein, Curran, & Tomlinson-Clarke, 2003, p. 270). Kirk-land (2003) commented that “good multicultural teaching honours our diverse cultural and ethnic experiences, contributions and identities” (p. 131) and emphasized that teachers need to “understand the experiences and perspectives [students] bring to educational settings and be responsive to the cultures of different groups in designing curricula, learning activities, classroom climate, instructional materials and techniques, and assessment procedures” (p. 134).

According to Hackett, teachers need to develop a “strong cultural identity [so as to be] responsible for teaching the whole child by teaching values, skills, knowledge for school success and participation in society, linking classroom teaching to out-of-school personal experiences and community situations” (Hackett, 2003, p. 329). Ambrosio emphasizes the importance of multiculturalism for the teacher: Teaching is learning—a process of slowly integrating knowledge into practice… -. The most important aspect of teaching is developing the mental habit of reflecting on our instructional practice and of altering this practice according to what is discovered about how students learn best. Knowledge of multicultural theory and practice will give the reflective space, the necessary reservoir of cultural insight, to intelligently address pedagogical issues as they arise in your everyday practice. (Ambrosio, 2003, p. 37)

Maria Montessori in her Absorbent mind and in other writings underlined the concept of diversity, expressing the idea of a cosmic education. According to Maria Montessori, human beings have certain basic needs that must be satisfied, they also have been given inherent tendencies, and these work together to facilitate us in satisfying our needs.

“Through the reasoning mind, the power of imagination and the hands that could work human beings, over time, built an identifiable way of life which was ... It might have been called Stone Age Culture, Aboriginal

Culture, Roman or Greek Civilisations, or they might be the nation states of today".

These realities are both past and present. In building its cultures and way of life, humanity has, in fact, developed the mind and therefore become more conscious. I think that Montessorians would consider history as the story of the growth of consciousness.

I do not mean that the people who made history were conscious of what they were engaged in at the time but that we, looking back at history can become conscious of its implications.

In the article on 'The Unconscious in History' Maria Montessori discusses the idea of the cosmic task of humanity, of man as being a 'transforming agent' and of his work as being a 'transforming task', he is, she says 'the builder of a supra-nature' (p 14). I cannot give you the exact reference for this single sentence from the writings of Teilhard de Chardin, a French priest, palaeontologist, biologist and philosopher, he says 'man is not a figure in the landscape, he is a shaper of the landscape' and this idea coincides with the Montessori thought of a 'builder of the supra-nature'"

(Montessori's View of Cosmic Education, Mary Hayes, 2008)

Educational activity in practice

Team building and cultural diversity

This activity is addressed to teachers and adult learners.

Step1

A lecture

Introducing the concept of Diversity Pedagogy Theory (DPT) as a set of principles which point out the natural and inseparable connection between culture and cognition (Sheets, 2005). An efficient teacher and prepared students must understand and acknowledge the critical role culture plays in the teaching-learning process.

Adopting a DPT approach means to maintain culturally inclusive patterns to identify individual and group cultural competences and skills. Furthermore it means being able to use this knowledge to guide teaching decisions. Culturally competent teachers facilitate learning, but also culturally competent learners facilitate learning. They understand how to change and adapt instructions. These teachers and learners create the optimal learning conditions which enable more children to learn what teachers intend to teach.

Step 2

Cultural team building exercise based on "later cultural thinking".

These exercises are a revisited version of the typical lateral thinking based activities. The Montessori idea of a "prepared environment" is here interpreted in order to consider the cultural diversity context as a part of a social connected cognitive environment.

Balloon Balance:

The participating teams will be given balloons which should be kept in the air with one member allowed to touch them only one at a time. Every balloon represents a specific cultural characteristic of the members of the group. In the beginning, with a few balloons, the game will be pure fun, but when more balloons are introduced, it becomes necessary for the team players to plan and keep up timing in maintaining the balloons up in the air. The last who lets the balloon fall has to define the characteristic represented by the balloon.

Memory Chain:

This is a simple mind game which requires players to think and act instantly. Words from the languages of the members of the group are chosen and written in a piece of paper and put into a box.

The first player of the team will be speaking out a word and the second player will have to come up with a word related to the first one and speak it out along with the first word. This process will be repeated until and unless a player fails to recollect all the said words and come up with his/her own suggestion. This activity will improve the memory and instant thinking ability of each individual.

Dare To Be Different:

In order to come up with an unconventional method to solve a problem or perform a task, adults will have to think differently. Asking them questions that are not regularly asked. For instance, questions like how to eat food without using cutlery and hands will bring creative answers. This activity will help make employees think differently and come up with out-of-the-box solutions in solving a problem.

Step 3

Discussing the results

Pedagogical remarks

Lateral thinking is seemingly solving insoluble problems through an indirect and creative approach. The term was coined in 1967 by Edward de Bono[1]. The fundamental principle of creativity through nonlinear thinking is to proceed by analogy. *Abstraction*, *comparison* and *reconceptualization* are the basic tools of lateral thought. Lateral thinking fully engages the imagination, always supporting itself through a plurality

[1] De Bono, E. *Lateral Thinking: A Textbook of Creativity*. Penguin, 2009

of structured methods for every step of an idea's development. As the phrase most often associated with lateral thought, i.e. "thinking outside the box", suggests, in our everyday patterns of reasoning we are always confined within unspecified, invisible boundaries, products of habit, indoctrination and cultural bias. Lateral thinking trains us to identify and overcome these kinds of boundaries, the ones that were never *really* there. The "revolution" of de Bono is conceptually very close to the Montessori's idea of prepared learning environment. The idea of a prepared environment where the child (and the adult) is free to express his/her cognitive attributes and abilities is also an idea of having new cognitive patterns related to the vertical thinking not developing imagination and creativity.

PRINCIPLE: EXPERIMENTATION AND EXPLORATION

UNIT 8

DEVELOPMENT OF SENSES AND TACTILE APPROACH, INVOLVING ALSO TECHNOLOGIES

Learning styles are part of the wider concept of personality. McAdams and Pals (2006) offer a five-principle model of the individual as a whole which encompasses evolutionary design for human nature, dispositional traits, characteristic adaptations, self-defining life narratives, and culture/social contexts. Learning styles fall into the categories of dispositional traits and characteristic adaptations where there are differences among individual humans, although there are groups of humans who have common or similar learning style characteristics.

Advocates of learning style models (Claxton & Murrell, 1987; Coffieldet al., 2004a, b) postulate that students learn in different ways. Taking that as a basic premise leads to the implications that adult education should not assume that all adult students learn in the same way and that they need a specific physical approach to learning.

Some adult learners need to be involved in not static activities to acquire a proper dimension of learning.

We define this approach as Kinaesthetic learning.

This occurs when the student is involved in a physical activity: learning by doing, exploring, discovering.

Kinaesthetic learning is one of four learning styles defined by different authors as visual, auditory, reading/writing, and kinaesthetic.

Research has shown that kinaesthetic learning results in increased learning outcomes for all students (see:*Coffield, F., Moseley, D., Hall, E., Ecclestone, K. (2004). Learning styles and pedagogy in post-16 learning. A systematic and critical review. London: Learning and Skills Research Centre*).

Kinaesthetic learners prefer to learn by direct experience, and learning transpires as a result of what was done rather than what was said or read. We can better understand the idea of exploration expressed by Montessori in the light of Benjamin Bloom's taxonomy of learning which states there are three types of learning:

- Cognitive: mental skills (Knowledge)

- Affective: growth in feelings or emotional areas (Attitude)

- Psychomotor: manual or physical skills (Skills)

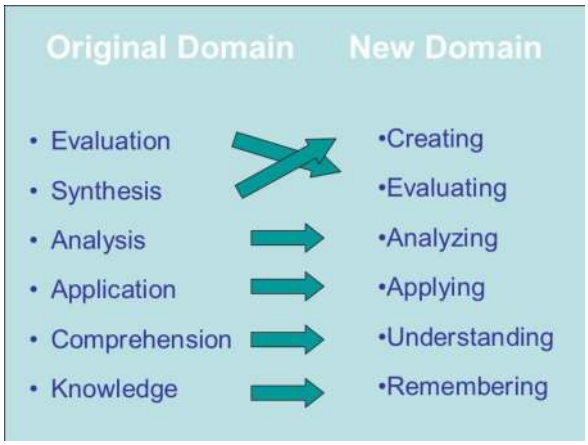
These three domains complement and reinforce each other in the learning process. The psychomotor domain encompasses physical movement, coordination and a variety of motor skills (see: *Simpson E. J.,*

1972, The Classification of Educational Objectives in the Psychomotor Domain. Washington, DC: Gryphon House). Aspects of the psychomotor domain include:

- Perception–using sensory cues to guide motor activities
- Readiness to act–includes mental, physical and emotional readiness, e.g. prepared to act upon a sequence of instructions.
- Guided Response–learning a complex skill through imitation and trial and error; following instructions.
- Mechanism–learned responses become habitual, movements performed with confidence and proficiency.
- Complex overt response–performance of complex movement patterns.
- Adaptation–movements can be modified or adapted to fit special situations
- Origination–creating new movement patterns to fit a situation.

Lorin Anderson and David Krathwohl revisited the cognitive domain in the mid-nineties making some changes, such as the names of the six categories from noun to verb forms rearranging them as shown in the chart below creating processes and levels of knowledge matrix.

The new matrix takes into account new ideas and results



In the mid eighties new forms of learning were discussed and analysed. Thank to David Kolb's Experiential Learning Theory (see: *Kolb, D. A. 1984. Experiential Learning: Experience as the Source of Learning and Development. Englewood Cliffs, New Jersey: Prentice-Hall*) it was possible to emphasize model outlines related to approaches toward grasping experience: Concrete Experience and Abstract Conceptualization

For instance, in learning modules on Teaching scientific topics using Kinaesthetic Learning, students experience operations by physically doing the movements of the operations. For instance, Students

begin to master the concepts of symmetry (cognitive skills), and have an in-class experience they would never forget (affective domain).

Educational activity in practice

Using KLA (Kinaesthetic Leaning approach) for teaching economy.

Step 1

Before starting you must have an idea about the KLA level of your adult learners using the VARK questionnaire (see below).

Instructions

The questionnaire alerts people to the variety of different approaches to learning. It supports those who have been having difficulties with their learning and has particular applications in business, sport, training and education. Mentors, trainers, teachers and coaches who would like to develop additional learning strategies can also benefit from using VARK. It can be used with a business group, a team or a class or with one-to-one training and counselling, but it does require some explanation to avoid leaping to inappropriate conclusions.

The online questionnaires are available in many languages and there are individualized learning profiles (pages of advice) available for purchase. These are pinged back to your browser immediately. If you do not wish to use the online version of the questionnaire, you can download a printable (PDF) version. Note: The online questionnaire provides the questions and options in a different (random) order each time. If you complete the questionnaire twice, the questions and options may be in a different order.

Creation of the Group and Lecture

The learning space must be set according to the Montessori principles. Learning islands with thematic spaces should be organized as follows.

- history of economics theory and practice
- how markets work
- cost and production
- perfect and imperfect competition
- national product and income
- inflation,
- unemployment and the business cycle
- fiscal and monetary policies and the global economy

The islands should contain: a PC with video lectures, literature, information materials

The teacher/s should go in each of the islands and present a short introduction of the topic. Before the lectures assistant-teachers should explain the instructions (how to use the material located in the islands)

Step 2

The adults are free to move among the islands selecting the materials and the videos they require. Any doubts or requests of clarification will be asked to the teacher or to the assistant teacher.

Posters will be hung up on the classrooms walls with a short description of general principles and concepts of economics.

During the lectures, the adult learners will be free to create their own posters indicating the new concepts learnt. The new posters can be also the result of collective work.

Step 3

Walking tour on Economics

The posters will be distributed (if possible) around the town (if not, in the school) following a thematic path. The group will be guided by the teachers through a "Walking tour" along the basic principles of economics (Walking Crash tour in Economics).

Pedagogical remarks

In the Montessori approach the idea of a prepared environment is very important. In the concept of physical environment it has to be taken into account the fact that the place should stimulate the sensorial approach of adults. Another consequence is the need to organize the learning time in order to facilitate the balance life-time/working-time/learning-time. A virtual space could take advantage of the social networking in order to facilitate the exchange of information and the creation of a community of learners.

UNIT 9

STIMULATION OF A VISUAL APPROACH AND THE ABILITY TO USE ONE'S EMOTIONAL SIDE (especially in didactic areas where it's apparently impossible to use these emotional competences: e.g. technical and scientific topics)

The effective use of a visual approach (pictures, charts, graphs, and diagrams) in educational materials is an important facet of instructional message design. According to Fleming (1993) an educational message can be defined as "a pattern of signs (words, pictures, gestures) produced for the purpose of modifying the psychomotor, cognitive, or affective behaviour of one or more persons". We commonly define pictures as symbols, with traits of resemblance to what that they stand for, whereas nonrepresentational graphics, including charts, graphs, and diagrams, are more abstract but use spatial layout in a consequential way (Knowlton, 1966; Levie & Dickie, 1973; Rieber, 1994; Winn, 1987). Levie (1987) has suggested that there are at least four lines of research on illustrations:

(a) picture perception,

(b) memory for pictures,

(c) learning and cognition,

(d) affective responses to pictures.

Maria Montessori pointed out in several of her works that a surface with marks on it is attractive and children tend to interpret the symbols they see. A sign is therefore a **"**picture**"** and pictures tend to carry meanings and are consequently a grammar in pictures. Although picture perception is essentially an inborn trait, skills must be learned.

The discussion of modern theories in their historical context about the perception of images begins with the idea of linear perspective developed during the Italian Renaissance. James J. Gibson**'**s resemblance theory introduced the concept of visual environment and E. H. Gombrich**'**s constructivist theory, in which meaning is based upon pictorial conventions, can be related to the educational role of visual learning.

Visual learners generally think in pictures and are good at visualizing concepts and information in their mind. Visual learners like information served up in the form of hand-outs, graphs, charts, diagrams, and text. They are often good spellers, love reading, enjoy colours and aesthetics, easily understand charts and graphs, dream in colour, remember faces (though not necessarily names), and can recall *where* they saw something. They are also often not as good at foreign languages or remembering conversations, and need extra time to process the information they hear.

Picture perception theorists have challenged many of our orthodox beliefs about pictures. For example, let us consider the question of what constitutes **"**realism**"** in pictures. In the media research literature, realism

is generally defined as matter of faithfully copying nature. A picture is said to be "realistic" to the degree that it mirrors the visual information provided by the real-world referent, and researchers studying the effects of pictorial realism have manipulated "realism cues" such as amount of detail, colour, and motion. The outcomes of this research have been frequently disappointing.

Visual learners can receive most information through visual means, such as the Internet, television, billboards, and printed media. Other information is presented through auditory and interpersonal experiences: lectures, exchanges and conversations and, in general, external narration.

In order to increase their skills and strengths, visual learners should: take notes during (or immediately after) meetings/conversations and draw graphs/tables in order to practice their visual learning strengths to improve their learning skills.

According to James J. Gibson's theory, learning is perceived as the gateway to understanding the problem of INTELLIGENCE. Since seeing is part of our intelligence, learning is also becoming a key to the study of artificial and biological vision. In the last few years both computer vision - which attempts to build machines that can see - and visual neuroscience - which aims to understand how our visual system works - are undergoing fundamental changes in their approaches. Visual neuroscience is beginning to focus on the mechanisms which allow the CEREBRAL CORTEX to adapt its circuitry and learn a new task. Instead of building a hardwired machine or program to solve a specific visual task, computer vision is trying to develop systems that can be trained with examples of any of a number of visual tasks. The challenge is to develop machines that learn to perform visual tasks such as visual inspection and visual recognition from a set of training examples or even in an unsupervised way from visual experience.

This reflects an overall trend - to make intelligent systems which do not need to be fully and painfully programmed for specific tasks. In other words, computers will have to be much more like our brain, learning to see rather than being programmed to see. Biological visual systems are more robust and flexible than machine vision, mainly because they continuously adapt and learn from experience. At stake are engineering as well as scientific issues. On the engineering side the possibility to build vision systems which can adapt to different tasks can have an enormous impact in many areas such as automatic inspection, image processing, video editing, virtual reality, multimedia databases, computer graphics, and man-machine interfaces. On the biological side, our present understanding of how the cortex works may radically change if adaption and learning turn out to play a key role. Instead of the hardwired cortical structures implied by classical work, for instance by Harvard's David Hubel and Torsten Wiesel, we may be confronted with significant NEURAL PLASTICITY -- that is, neuron properties and connectivities that change as a function of visual experience over time scales of a few minutes or seconds.

There are two main classes of learning techniques that are being applied to machine vision: *supervised* and *unsupervised* learning algorithms (see UNSUPERVISED LEARNING). Supervised learning -- or *learning-*

from-examples -- refers to a system that is trained, instead of programmed, by a set of examples. The training thus can be considered as using input-output pairs. At run-time the trained system provides a correct output for a new input not contained in the training set. The underlying theory makes use of function approximation techniques, neural network architectures, and statistical methods. Systems have been developed that learn to recognize objects, in particular faces (see FACE RECOGNITION), systems that learn to find specific objects in cluttered scenes, software that learns to draw cartoon characters from an artist's drawings, and algorithms that learn to synthesize novel image sequences from a few real pictures and thereby promise to achieve extremely high compression in applications such as video conference and video e-mail. So far the most ambitious unsupervised learning techniques have been used only in simple, "toy" examples, but they represent the ultimate goal: learning to see, from experience, without a teacher.

In computer vision tasks (see COMPUTATIONAL VISION) the input to the supervised learning system is a digitized image or an image sequence and the output is a set of parameters estimated from the image. For instance, in the ALVIN system, developed by Dean Pomerleau (1993) at Carnegie Mellon University for the task of driving a car, the input is a series of images of the road and the output is degrees of steering. In recognition tasks the output parameters consist of a label identifying the object in the image (see VISUAL OBJECT RECOGNITION, AI).

The analysis problems of estimating object labels as well as other parameters from images is *the* problem of vision. It is the *inverse* of the classical problem of classical optics and modern computer graphics, where the question is how to synthesize images corresponding to given 3-D surfaces as a function of parameters such as direction of illuminant, position of the camera and material properties of the object. In the supervised learning framework it is natural to use a learning module to associate input parameters to output images. This module can then synthesize new images. Traditional 3-D computer graphics simulates the physics of the world by building 3-D models, transforming them in 3-D space, simulating their physical properties, and finally rendering them by simulating geometrical optics. The learning- from-examples paradigm suggests a rather different and unconventional approach: take several real images of a 3-D object and create new images by generalizing from those views, under the control of appropriate pose and expression parameters, assigned by the user during the training phase.

A large class of SUPERVISED LEARNING schemes suggests directly a view-based approach to computer vision and to computer graphics. Though it cannot be seen as a substitute for the more traditional approaches, the learning-from-examples approach to vision and graphics may represent an effective shortcut to several problems.

An obvious application of the supervised learning framework is the recognition of 3-D objects. The idea is to train the learning module with a few views of the object to be recognized -- in general, from different viewpoints and under different illuminations -- and the corresponding label (as output), without any explicit

3-D model. This corresponds to a classification problem as opposed to the regression problem of estimating real-valued parameters associated with the image. An interesting demonstration of the power of this view-based paradigm is the development of several successful face recognition systems.

Even more difficult than recognizing an isolated specific object is detecting an object of a certain class in a cluttered image. Again, supervised learning systems have been developed that can be trained to detect faces, cars, and people in complex images.

The key problem for the practical use of most learning-from-examples schemes is often the insufficient size of the training set. Because input vectors typically have a high dimension (like the number of pixels in an image), the required number of training examples is very high. This is the so-called *curse of dimensionality.* The natural idea is to exploit prior information to generate additional *virtual* examples from a small set of real example images. For in-stance, knowledge of symmetry properties of a class of 3-D objects allows the synthesis of additional examples. More generally, it is possible to learn *legal* transformations typical for a certain class of objects from examples drawn from images of objects of the same class.

The example-based approach is successful in practical problems of object recognition, image analysis, and image synthesis. It is not surprising therefore to ask whether a similar approach may be used by our brain. Networks that learn from examples have an obvious appeal given our knowledge of neural mechanisms. Over the last four years psychophysical experiments have indeed supported the view-based schemes and physiological experiments have provided a suggestive glimpse on how neurons in the IT cortex may represent objects for recognition (Logothetis, Pauls, and Poggio 1995 and references therein). The experimental results seem to agree to a surprising extent with the view-based models.

Educational activity in practice

Learning Statistics through visual learning

Step1 - Intro:

The basic purposes of this course in statistics are to enable adults to make sense of large numbers. These concepts can be used also in daily life. For example, if adults want to know how the people associated in a golf club are doing, and they are given a list of all of 1,000 of their scores, that's useless. This everyday problem is even more obvious and staggering when someone is dealing with economic and financial performances. At the end of the course adults will have to be able to consolidate and synthesize large numbers to reveal their collective characteristics and interrelationships, and transform them from an incomprehensible mass to a set of useful and enlightening indicators.

Topic: Measures of Central Tendency -The Mean, Median, and Mode

The instructor organizes four groups of adults: general concepts and intro; The Mean, The median and the mode.

Adults following the indications of the instructor/s create paper and visual posters.

What is a visual poster

Using a Smart board (if available) or smartphones and tablets, we can create a kind of virtual poster, summarising the concepts through videos (selected from You Tube and Vimeo or created by the participants). The use of visual posters must be made simple and we suggest to present the results in Power Point and the teachers will help the students who are not familiar with the program.

Step 2

Statistics indicators and probability theory: posters and visual posters showing the concepts using the same methods as above.

Step 3

Experimenting a real statistics survey.

Instructors and adult learners will select a survey based on a real life situation.

The results will be shown in paper and visual posters.

Each group will create a final presentation in Power Point.

Pedagogical remarks

Maria Montessori observed how children learned a language without anyone teaching them. This leads to the study of all aspects related to an individual's learning styles. If learning styles are not recognized, the intellectual environment and the educational organization will not reach its objective. The purpose of Montessori's idea of exploration is to develop the child's whole personality, not merely his/her intellect. By guiding the child through the five areas of the Montessori curriculum (Practical Life, Sensorial, Language, Mathematics, and Cultural subjects) he/she becomes familiar with the structure which is at the forefront of the creative work in a Montessori classroom.

A lot of time and effort is involved in creating a prepared Montessori classroom which is designed to meet the individual needs of all children. Through developmentally appropriate sensorial material that moves hierarchically from simple to complex and concrete to abstract, children are free to fully develop their unique potential through a carefully prepared learning. In the case of adult learners, the effort to teach them according to their learning styles, so that they can create their own way to define an ideal intellectual learning environment, is nowadays fundamental.

UNIT 10

DEVELOPING THE ABILITY TO SOLVE (REAL) PROBLEMS THROUGH PRACTICAL ACTIVITIES

Confucius (*"Tell me, and I will forget. Show me, and I will remember. Involve me, and I will understand")*, Kaufman (*"Brain research establishes and confirms that multiple complex and concrete experiences are essential for meaningful learning and teaching")* and Kolb (*"Learning is a process whereby knowledge is created through the transformation of experience. It takes place when a learner (person) interacts with, or is stimulated by, an environment")* underline the power of learning when it takes place within the contexts of authentic tasks, issues, and problems that are aligned with real-world concerns and real practical activities.

The Montessori model of education stresses the importance of solving real problems through practical activities: the purpose to solve problems is a motivation for acquiring knowledge which also provides a context for learning.

One of the aims of the Montessori method is to foster competent, responsible, adaptive citizens who are life-long learners and problem solvers (Lillard, 1996). For this reason Maria Montessori provided tools for independent learning, useful to connect old and new knowledge. "Maria developed the Montessori curriculum to establish a framework for knowledge set in meaningful contexts, and this combination contributes to the transfer of problem solving skills beyond the classroom" (Lillard, 2005).

She didn't use the term "problem solving" and probably the overall term that always comes to mind is the hands-on experience, but the meaning concerns analyzing real situations and trying to understand the phenomena actively using prior knowledge. Representing and manipulating knowledge directed towards a goal.

The learner recognizes the cognitive processes needed, selects and applies the previous knowledge and skills which apply to the new learning, and monitors the progress towards the goal (Mayer & Wittrock, 1996).

This approach is particularly interesting in adult education: all attending adults come from varied experiences and knowledge in diverse areas. They favour practical learning activities which enable them to draw on their prior skills and knowledge. Adults are realistic and have insights about what is likely to work and what is not. They are readily able to relate new facts to past experiences and enjoy having their talents and knowledge explored in teaching practical situations.

A recent research of the North Carolina University confirms that learning opportunities providing a chance to "do" or to experience are clearly the most favoured way of learning by adults. The most used combinations include "seeing," "doing," and "discussing." Findings demonstrate that a well planned

program delivery system that includes opportunities to see, experience, and discuss should greatly enhance the learning process in adult education.

Adults need to know how to transfer knowledge and skills learned in one setting and successfully apply them in a variety of situations. "Knowing" is different from "doing" : when there is the opportunity to apply the knowledge, the lesson typically becomes much more real.

For this reason, it is very important to use a method based on the ability to solve real problems through practical activities.

Educational activity in practice

The purpose of this exercise is to introduce the basic principle of domestic finance through solving real problems.

Step 1 - General discussion about household spending

The teacher introduces a discussion about household spending. The situation is more or less the following: A family, two salaries, the monthly expenses.

“Where does the money go?” is a common dilemma faced by many individuals and households when it comes to budgeting and money management.

Effective money management starts with a goal and a step-by-step plan for saving and spending. Financial goals should be realistic, specific, have a timeframe, and imply an action to be taken. This lesson will encourage adult learners to take the time and effort to develop their own personal financial goals.

The teacher has to stimulate a discussion about what actions might be taken to avoid family financial difficulties.

Step 2 - Setting Up a Personal Budget

The teacher asks the adult learners what patterns can they see in their spending habits.

Then the class discusses topics such as impulse buying, how to decide what to purchase, and what factors might influence purchasing decisions.

Then the teacher introduces the concept of personal budget as a financial plan that allocates future income toward expenses, savings, and debt repayment.

The class will have to fix their own budget.

Step 3 – Maintaining a Personal Budget

The class will have to keep a record of everything they spend during a one-month period (Monitor current spending patterns, Compare their budget to what they have actually spent, Review financial progress and revise budgeted amounts.)

In this phase the adult learners will monitor their spending habits (in writing) and will also demonstrate that, by carefully considering needs and wants, an individual or family will spend appropriate amounts for current living expenses, while saving and investing for long-term financial security.

They will have to create a plan to achieve those goals, and provide practice in setting up and maintaining a personal budget.

The adult learners will understand what it means to budget, and identify the reasons to keep to it. They will fix and keep a personal budget covering their personal and financial objectives.

Pedagogical remarks

Effective money management starts with a goal and a step-by-step plan for saving and spending. Financial goals should be realistic, specific, have a timeframe, and imply an action to be taken. This means solving real problems through practical activities.

The objective of this exercise is to introduce the main concept of economic and financial maths applied to daily life. The activity is addressed to all adults, but in particular to those with specific problems of integration or living social hardness related to economic difficulties in order to provide competences to improve the level of responses and reactions.

PRINCIPLE: OBSERVATION

UNIT 11

DEVELOPING A METHOD TO ALLOW THE EDUCATOR TO FOLLOW THE PROGRESS OF THE ADULT LEARNERS

Maria Montessori in a famous London lecture affirms that "Plants can be helped by watering them and fertilizing them, but this is not sufficient in itself. It is clear also that if the child is furnished with this great power of imagination, it is also clear that it must be put into relation with something—so that it can express itself in interaction with the environment. The child has a great store of deposited energies, which must be used. And so we see in humanity throughout history this great richness given by imagination, and the use made of these ideas translated into work. As long as people have walked the earth, they have always accomplished great work that did not exist before. And, if something did not exist before, it means that people must have first imagined it. All of humankind's work finds its starting point in imagination, and little by little, the different expressions of humankind's work become more and more perfect, with man perfecting himself as he works. There is a force in man that compels him to fashion in practice ideas imagined.

All the images, the impressions that man gathers from the environment are gathered in by intelligence and placed in store for further use. Therefore, man's mind expands and acquires a precise form, and one may say that this practical work is essential for the construction and organization of the imaginative world.

Exactitude is something which can be analyzed. One may have the conception of an exact form, for instance an exact geometrical form; one can consider the quantity of things with exactitude, one can measure with exactitude. This is mathematical exactitude, which helps inner construction."

(Montessori London lecture, AMI Mid-year publication, 2014)

The concept and practices of the pedagogy of imagination have been studied by Montessori but also by others, in particular by the Austrian philosopher Rudolf Steiner, who wrote extensively on the subject of the nature of 'imagination' and 'imaginative teaching'.

The idea of "cultivating" the nature of adult's developments of imaginative thinking in the frame of the educational activities is a great way through which the teacher can observe the results of adult learners who are not able (not always at least) to have a daily opportunity to observe their progresses.

According to recent studies seven teaching methods ('drama', 'exploration', 'storytelling', 'routine', 'arts', 'discussion' and 'empathy'), mainly stemming from the last conclusions by Montessori and Steiner, can be

considered methods forming a powerful means for connecting adults with spiritual-aesthetic, intellectual and physical development.

The imaginative approach and the related consequence of considering teaching as the results of multiple facets of human experience has always been common to a holistic view of education (Miller 1997; Yonemura 1989).

Montessori saw children to be in need of more than intellectual development. Others like Steiner, however, following and drawing upon the holistic tradition, have proven particularly significant to the development of a holistic educational philosophy and method.

The seven steps ('drama', 'exploration', 'storytelling', 'routine', 'arts', 'discussion' and 'empathy') applied to adults represent a sort of curricular indication which allows the teacher to have a clear view of the educational progress.

The seven teaching approaches provide the empirical basis, or conceptual 'grounds', from which salient features of imagination and teaching have been theorized. In this undertaking, additional support has arisen for the argument that 'imagination' is not just another 'element' within holistic schooling, but is a crucial part of it and plays a significant role to the 'whole'.

Imagination not only has the ability to function as a bridge between ideological paradigms, between idealism and realism. It represents the ability to connect the various components of the context and place them in spiritual-aesthetic dimensions or meanings.

Notably, this view of 'imagination' as a bridge to wholeness, and a process of synthesis, is echoed in a number of studies; in particular, Harold Rugg (1963) studied the concept of imagination and its function as a mediator between the conscious and unconscious mind. Rugg makes an important elaboration on how we think, and thus come to know something. The most known and accepted type of thought, Rugg argues, is the verbal-analytic thought of 'scientific thinking'. This mode of thinking, he claims, consists primarily of mental substance, having very little feeling if any in it. It is, however, mainly beneficial for verification, not for discovery. To discover something, one is engaging in what Rugg calls 'felt-thought', a type of thinking which involves the feelings and intuitive realms. Rugg points towards Einstein as a scientist and philosopher in whom the rational, scientific way of thinking was epitomized, but who nevertheless often explained that none of his ideas emerged out of analytic thinking. Rather, they came as intuitive 'flashes', feeling-thoughts, which then he might try to express logically in words afterwards. (Nielsen, 2007)

Educational activity in practice

Seven steps to observe the progresses of adult-learners

Step1

Intro: The concept explored by this exercise is the use of a scheduled analysis of an imaginative educational approach for observing the result and the cognitive progress of adults with specific learning needs.

The seven steps ('drama', 'exploration', 'storytelling', 'routine', 'arts', 'discussion' and 'empathy') will be analyzed in seven monitoring schemes – MS - to be completed for each adult, with the result of the activities described above.

MSs are completed at the beginning of the training, half way through and at the end. If the Organization or Institution enrolled the adults in other educational activities, teachers will have to use the same MSs with the same schedule.

Step 2

The exercises are simple and very short. For each of them the teacher has to write down a brief comment (two lines) about the reactions and the response of the learners

Exercise of drama', 'exploration', 'storytelling', 'routine', 'arts', 'discussion' and 'empathy').

Drama

Choosing a character out of a novel recently read (or read in the past) but also, depending on the nature of the learning contents of the course, a scientist or a lawyer, and interpreting some their features. (Being the protagonist for five minutes)

Exploration

Explain and describe something just learnt anew

Storytelling

Tell a funny or dramatic story you have read in the newspaper

Routine

Tell and explain how you have used something you have learnt during the course the your daily life

Arts

Write some verses (in any form) about a topic suggested by the teacher

Discussion

One learner starts with an opinion (whatever) saying; About….I think that…..; the others, forming a circle, in turn have to express their opinions contradicting the opinion expressed by the colleague who has just spoken.

Empathy

Express an idea about the difficulties found by your colleagues during the course.

Step 3

The MS scheme

Areas

Ability of storytelling, empathy, expression of opinion, discovering

Starting point (0-10)

Intermediate (0-10)

Final (0-10)

Comments about Imagination

Starting point (0-10)

Intermediate (0-10)

Final (0-10)

Pedagogical remarks

John Dewey maintained that facts were dead and repellent things until imagination opened the way to intellectual possibilities; and indeed imagination has been called a passion for possibility. This signifies summoning unsuspected alternatives, of roads not taken, of unwritten letters to the world. It signifies a new kind of authenticity, perhaps the return of a lost spontaneity- an ability to retrieve meanings found over time. I think of the philosopher Merleau-Ponty saying we are "condemned to meaning"; and I think of our students confronting endless ambiguities and negations-- and seeking (if we share their ardour and anxiety) some way of translating this into a search for and, perhaps, a recapturing of meanings. It may be an almost inevitable response to the crowding of contradictions, to what appears to be unanswerable.

Engaged in this search, many of us turn to the arts, not because Goya or Virginia Woolf or Toni Morrison or Mozart or Michelangelo hold solutions the sciences and the social sciences do not, but an encounter with an art form demands a particular kind of interchange or transaction between a live human consciousness and a painting, say, or a novel, or a sonata that becomes a work of art or may be considered art depending on the reader's or perceiver's willingness and readiness to grasp what is being offered. And grasping it may mean a transformation of a sort--a changed perspective, a new way of understanding.

UNIT 12

CREATION OD A PERSONAL EDUCATIONAL "CALENDAR" WHICH ALLOWS THE ADULT TO CREATE HIS/HER OWN EDUCATIONAL PATH

Maria Montessori wrote that "… *spiritual phenomenon* which may co-involve the entire consciousness of the adult, is therefore only one of the constant elements of the phenomenon of *internal formation*". (The Advanced Montessori Method -1, -formerly entitled 'Spontaneous Activity in Education-; CLIO Montessori Series, Reprinted 1995)

Self regulation and personal approach to education are milestones in the Montessori method. The guiding idea is to assure a personalized approach to education in order to promote (and not inhibit) differences of learning styles. The discussion is *how* technologies can operate in order to support the process of personalisation of learning. The debate about the role of ICT devices and models encounters the theme of the so-called "ubiquitous learning" and about what is really (in pedagogical terms) different from the "classic" classroom and book-oriented approaches to learning. These appearances, however, can deceive. Old learning and not personalized approaches can be done on new machines. Using new machines is not necessarily a sign that ubiquitous learning has arrived and the learning styles of adults are taken into account. Furthermore, some features of ubiquitous learning (UL) are not new.

In any case laptops have become an integral part of our learning, work and community lives, to the point where, if you do not have access to a computer you can be regarded as disadvantaged, located as a 'have not' on the wrong side of the 'digital divide'. Meanwhile, many other devices are becoming more computer-like: mobile phones, televisions, global positioning systems, digital music players, personal digital assistants, video cameras, still cameras and game consoles, just to name a few. These devices are everywhere and they are getting cheaper by the day. They are also becoming smaller, easier to carry and have become increasingly networked. This is why we find them everywhere and they are now a fixed feature in our lives. This pervasive presence makes the act of learning ubiquitous.

How the UL can help the creation of a personal calendar.

Some authors indicate that at the beginning of the learning process of personalization the recognition of Knowledge Awareness (KA) is essential. KA is defined as awareness of the use of knowledge (Ogata, Matsuura & Yano, 1996). KA has a close relation to the learner's curiosity (Ogata & Yano, 2000). Collaborative awareness is frequently achieved by means of lightweight messaging tools and dynamic information displays which function as notification systems (Carroll, et al. , 2003). The Knowledge Awareness Map graphically displays KA information. It displays the surrounding environmental objects, the matched educational materials, and the recommended peer helpers (El- Bishouty, Ogata & Yano, 2006b).

This map plays a very important role in finding peer helpers and inducing collaboration (Ogata, et al., 1999). Hatano and Inagaki (1973) identified two types of curiosity: particular curiosity (PC) and extensive curiosity (EC). EC occurs when there is a desire for learning that makes the learner's stock of knowledge well balanced by widening the learner's interests. PC is generated by the lack of sufficient knowledge, and it is very useful because the learner can acquire detailed knowledge.

While a learner is interacting with other learners remotely trying to explain to them his/her current environment and situation, it may be difficult or at least it may need a long time to describe exactly the available learning objects that he/she uses during his/her practice.

Processes of ubiquitous learning can support the Montessori approach addressed to adults, allowing and facilitating a personal portfolio and a personal calendar.

In Villa Montesca at the very beginning of 20thcentury, Alice Hallgarten and Maria Montessori experimented the "Montesca Calendar" a personal portfolio addressed to children who could "post" daily learning experiences and observations, but also physical objects (flowers, stones etc). The following practice intends to propose the idea of the Montesca calendar updated and revisited in terms of ubiquitous learning.

Educational activity in practice

Creation of a Montesca UL Calendar

Step1

The teacher and the adult learner negotiate the time and the organization of the selected topic

In particular, the teacher must facilitate the analysis of problems and criticalities which could hinder taking part in the learning activities.

Criticalities negotiation scheme (learners should answer the following questions)

WHEN is learning better for me

…because….

HOW is learning better for me

…because….

WHERE is learning better for me

…because….

What have I at my disposal in order to benefit from UL

Step 2

Creation of a personal calendar

Each learner will created a personal transparent calendar and the teachers will have a general scheme of negotiated activities.

The teacher helps the learners to list the resources they have for learning and which devices are at their disposal (pads, laptops etc…)

The teacher indicates the learning calendar, defining the list of tasks learners should accomplish

The Montesca Calendar is a personal page that displays the:

Think I KNOW (learning resources and objects that the learner discovered with information and knowledge about the topic of the course)

MY notes (personal annotations and contributions about the content of the course)

MY results (the feedback to the teacher's requests and assignments)

MY Problems (indication about the difficulties the learners encounter in the learning process, in particular contents not understood)

A version of the on-line Montesca calendar can be seen at *www.montesca.it/calendar*

Step 3

Discussion and debate at the end of the course

Pedagogical remarks

Working as a guide and facilitator, the Montessori teacher, also when involved in adults education, creates a well-prepared learning environment and an atmosphere of learning and inquisitiveness designed to support adults in overcoming any difficulties. A Montessori teacher in general should allow the learners to learn from their own discoveries and draw their own conclusions. Rather than supplying the adults with available learning objects from which they can find answers, the Montessori teacher asks them how they would solve the problem, actively engaging them in the learning process and enhancing critical thinking skills.

In the Montessori North America association the role of the teacher is defined according to the following statement:

"Maria Montessori believed that the teacher should focus on the child as a person rather than on the daily

lesson plans. Although the Montessori teacher plans daily lessons for each child, she must be alert to changes in the child's interest, progress, mood, and behaviour.

Subjects are interwoven and the Montessori teacher must be skilled at presenting and understanding history, art, music, math, astronomy, botany, zoology, chemistry, physical geography, languages, physics, geometry, and practical life activities. The Montessori teacher is trained to give one-on-one or small group lessons and spend little time giving large group lessons. Lessons are brief and precise, meant to intrigue the minds of children so that they acquire the competence to learn more on their own. Montessori lessons centre around the most basic information necessary for the children to do their work: the name of the materials, where they can be found in the classroom and on the shelf, how to use the materials, and what can be done with them."

UNIT 13

OBSERVATIONAL LEARNING (ALSO KNOWN AS VICARIOUS LEARNING, SOCIAL LEARNING OR MODELLING) REALIZED IN TERMS OF OBSERVING, RETAINING AND REPLICATING NEW BEHAVIOURS EXECUTED BY OTHERS

Adults learn also through observation. A great deal of learning happens indirectly, mainly through the process of watching and imitating others. In psychology, this is known as *observational learning* which is a type of learning that occurs as a function of observing, retaining and replicating the behaviour of others. It is argued that reinforcement has the effect of conditioning the responses one will partake in, more than influencing the actual acquisition of the new response.

Observational learning is not the same as pure imitation of another's behaviour. Observational learning occurs as a result of witnessing another person, but is performed later and cannot be explained as having been taught in any other way. This type of learning also encompasses the concept of behaviour avoidance as a result of seeing another person behave in a certain way with negative consequences.

It is mainly associated with the work of psychologist Albert Bandura, who implemented some of the seminal studies in the area and initiated the social learning theory. He and other researchers have demonstrated that we are ALL naturally inclined to engage in observational learning.

In his famous Bobo doll experiment, Bandura demonstrated that young children would imitate the violent and aggressive actions of an adult model. In the experiment, children observed a film in which an adult repeatedly hit a large, inflatable balloon doll. After viewing the film clip, children were allowed to play in a room with a Bobo doll just like the one they saw in the film. What Bandura found was that children were more likely to imitate the adult's violent actions when the adult's behaviour either had no consequences or was actually rewarded for the said actions. Children who saw film clips in which the adult was punished for this aggressive behaviour were less likely to imitate it later on.

Observation, or watching the children and seeing how they are enjoying themselves, exploring their environment was also the simple method through which Maria Montessori learned about children and developed her theories on their development. Observation without preconceived ideas helped her in developing materials that the children needed and were interested in. For instance, she observed how children learned the language without anyone teaching them. This sparked the idea of the "absorbent mind". Children do not need to have lessons in order to learn, they simply absorb everything in the environment by experiencing it, being part of it.

But observation is not a prerogative and a trait of children, also adults learn through observing. Often, in the workplace or in their social relations, the response of an adult to something is influenced by what he/she has observed or seen from others (who are often referred to as models). The process is more or less

the same for children: paying attention to another person's behaviour and its consequences; then there is the retention of the observed response (this is when a mental representation of what is seen is stored in the memory); finally there is the enactment (reproduction) of the observed model under similar circumstances.

These outcomes of the modeled behaviour are also called *vicarious* because they *arouse emotional reactions in the observer*. For example, a boss in the workplace praises somebody for the work done, and the others who observe the situation experience positive feelings and are willing to do the same.

The two components of vicarious reinforcement are: the behaviour of a model produces reinforcement for a particular behaviour, and second, positive emotional reactions are aroused in the observer.

Television commercials rely on this type of situation. For example, a well-known actress uses a particular anti-age cream, and other women use the same product.

In these situations, the vicarious reinforcement for a particular group of viewers is the positive feelings associated with being younger. Similarly, a medical student learns procedures and bedside manners through observing other doctors on rotation in hospitals. An adult may learn how to climb the corporate ladder by watching and learning from the behaviour of his/her superior and the results obtained.

If we think about our daily activities and those people we watch and learn from, we may be surprised to find that we all participate in observational learning a lot more often than we may think.

Observational learning has also been used on a much larger scale to help promote healthy behaviours and inspire social change. For example, there have been television serials shown in a number of countries including India, Kenya, and China designed to encourage audience members to engage in environmentally friendly behaviours, use safe sex, and encourage financial independence among women.

This happens because this type of learning has a very strong impact on people: viewers naturally tend to imitate, or model their behaviour on that of celebrities.

For this reason this learning theory extends the learning process beyond the educator–learner relationship to the social world. The theory helps explain the socialization process as well as the breakdown of behaviour in society.

Educational activity in practice

Step 1:

The teacher presents a case: “There’s a job vacancy that can allow you to grow professionally in your field and can make you earn more money”.

The learners will have to write a convincing letter proposing themselves as the best candidates.

They will have to underline their professional and personal characteristics, their experience in the sector, their qualities and strengths. They will also have to write what challenges this opportunity can represent for them.

Step 2:

The teacher (also with the help of an expert) will write the right application letter underlining aspects such as:

- the fact that the letter represents the only opportunity to introduce oneself and to demonstrate the concurrence between the employer’s job requirements and the skills and qualifications of the job seeker

- the importance of highlighting specific abilities, experiences and talents which make the job seeker the ideal candidate for the job

- the fact that the letter can also be an opportunity for the job seeker to demonstrate his/her ability to write, communicate and articulate ideas effectively.

- a good letter will show the employer how he/she will benefit from hiring the job seeker, so it is important to point out which extra skills the candidate will bring with him/her, also mentioning the areas in which these competences could be considered an “added value”.

It is also possible to show some videos demonstrating how to write the correct letter.

See links below:

https://www.youtube.com/watch?v=oiR3Uu5sbXw for cover letter

https://www.youtube.com/watch?v=zJoFPr8M02I for application letter

https://www.youtube.com/watch?v=ARNWtLCbfW4 for application letter

Step 3:

In step 3 the learners will revise or rewrite their original letter, assessing also the learning process based on observation.

Before rewriting the letter the following checklist must be filled:

Appearance and inclusion of vital information Is it an original letter rather than a mass-produced copy? Is the letter clear? Is it clear where the employer can reach you? Is the letter's content neat and interesting? Is it too long? Have you signed your name boldly and confidently?
Writing style Are your spelling, grammar and syntax correct? Does the letter tell the employer why you are writing, and does it catch his/her attention in the first paragraph? Have you used action verbs? Is the letter concise and to the point? Have you avoided needless detail and autobiographical ramblings? Does it avoid clichés and have you minimized the use of phrases such as "I feel" and "I believe," which tend to weaken and dilute the statements you make about yourself?
Tone appeal to the reader Is it interesting? Have you read it from the employer's perspective? Does it project the image of a person the employer would like to get to know better?
Enhancing the value of your letter Have you quantified and given examples of accomplishments that demonstrate your skills wherever possible? Have you demonstrated your knowledge of the organization you are writing to? Have you made the most of your school and job experiences and also relevant extra-curricular activities? Have you told the employer what you can do for the organization rather than what the organization can do for you? Have you avoided pleading for favours or sounding desperate and "willing to do anything"?

Then each participant will have to rewrite the letter.

Finally there will be an open discussion about how the learners have improved and changed their letters, also assessing the learning process based on observation.

Pedagogical observations

Always remember that observing is not just sight, but is everything: feeling, smell, sounds, taste, and looking.

In order to obtain positive results, four conditions must first be met.

The first condition is attention. Observers cannot learn unless they pay attention to what is happening around them. This process is influenced by the characteristics of the model, or the person the observer is watching, such as how much one likes the model identifies him/herself with it. It is also influenced by characteristics of the observer, such as his/her expectations or the emotional level.

The second condition is retention or memory. Observers must not only recognize the observed behaviour, but also remember it. This process depends on the observer's ability to code or structure the information so it is easily remembered.

The third condition is initiation. Observers must be physically and intellectually capable of producing the act. In many cases the observer possesses the necessary responses, but sometimes reproducing the observed actions may involve skills the observer has not yet acquired. You will not be able to become a champion juggler just by watching someone else do it.

The fourth stage is motivation. An observer must be motivated to reproduce the actions seen. Motivation can come from external reinforcement, such as promised rewards, vicarious reinforcement, or noticing that the models of the behaviour are rewarded. In the case of models to whom the observer affords higher status the performance is influenced more by motivation.

PRINCIPLE: INDEPENDENCE

UNIT 14

DEVELOPMENT OF PROBLEM SOLVING ABILITIES AND OF A PERSONAL SELF-LEARNING PROGRAM

Adults involved in educational initiatives often expect to have responses to the changing environments, finding non-traditional and empowering ways of organizing and managing the situations they have to face at work in order to improve their position or, in time of economic crisis, not to lose their job. Furthermore, sense of responsibility and creativity become paramount to the success of an organization (Clawson, 1999). Simply providing work-related knowledge and skills to employees is not enough to effectively compete in the workplace of the future (Blanchard & Thacker, 1999).

Problem solving skills are needed within the so-called "organic structure", organizations whose aim is to promote and develop new ideas. Effective leaders realize an organization will not remain competitive unless people are learning and expanding their skills. "In a turbulent environment, it has become maxim that the ability to learn is the only source of sustainable competitive advantage" (Clawson, 1999, p. 145). The expectations related to educational initiatives are progressively growing in adults with critical perspectives and the common idea is that in order to preserve one's job in an increasing competitive society the need for an adaptive attitude is strategic. It is evident that the role of education in preparing the workforce of tomorrow is critical. In the past, elementary and secondary educational practices have been relatively consistent with the way work was organized in factories, particularly for workers in lower skilled jobs (Berryman, 1993). Often schools have focused on turning out a "product" with the primary goal of teaching basic skills and content knowledge. The United States government has recognized the need for change in how tomorrow's workforce will be educated.

Montessori's view about the personal growth of children is mainly based on the ability of finding solutions through a personal path to daily problems.

Mayer (1992) defined problem solving as cognitive processing aimed at achieving a goal when no solution method is apparent to the problem solver.

According to his definition, there are several important characteristics to consider.

1. Problem solving is a process, which occurs within an individual's cognitive system (Mayer, 1992).

2. Problem solving requires representing and manipulating knowledge that is directed toward a goal (Mayer, 1992).

3. Problem solving is intensely personal because the prior knowledge and skill level of the problem solver determine the facility the person has for solving the problem (Mayer, 1992).

4. The problem solver has a goal but may not have an obvious method for reaching the goal (Mayer, 1992).

5. Problem solving can cover a wide range of problems from very broad to very specific.

Problem solving is an activity that can lead to use the specific technique acquired in other very different contexts. This is the realm of the transfer of knowledge. In Thorndike's (1901) works about transfer, he showed that students did not do better in other subjects after learning Latin or logic. He argued that transfer only occurred when there were many similarities between the learning context and the transfer context. Transfer would occur when the specific content of one subject was needed to learn another subject. He concluded that no transfer takes place unless there are common elements. Mayer and Wittrock (1996) reported, "According to this specific transfer view, learning of A will help a person learn B only if B contains elements that are identical to A" (p. 50). Central to Thorndike's theory was the belief that the learner was a passive recipient of information (Campione, Shapiro, & Brown, 1995). To go further in the idea of acquiring knowledge, studies showed the role of Metacognition, defined as the "awareness of one's own cognitive processing" (Mayer, 1992, p. 256). Halpern (1996) stated that "Metacognitive monitoring of your thinking process includes deciding which problems are worth working on, allocating time and effort to different problems and parts of problems, and keeping track of whether you are making progress toward the goal" (p. 28). The problem solver is actively using prior knowledge to solve a new problem.

Transfer occurs when the learner recognizes the cognitive processes needed, selects and applies the previous knowledge and skills that apply to the new learning, and monitors the progress toward the goal (Mayer & Wittrock, 1996).

According to many authors, personalized learning programs stimulate the action of transferring knowledge in a frame of education of adult learners. In some systems, in the UK and the US, for instance, personalisation has been promoted by discussions and debates, and the work of Charles Leadbeater (2004; 2006).

However, it is now common idea that personalization is not the same as individualization.

Personal learning requires the active direction of the student; individualization lets the school tailor the curriculum to scaled assessments of interest and abilities. "The difference between individualization and personalization lies in control. "How much does the student direct the process of his or her own learning?" The answer to that question plays out in student commitment."

Personalized learning in favour of adult learners occurs when educational institutions make deliberate efforts to design educational experiences that fit the needs, goals, talents, and interests of their students. Each student approaches educational experiences with uniquely constructed attitudes, skills, and knowledge. To succeed with individual students who are unique, the people and programs that successfully engage those students have to be ready to adjust educational opportunities to fit a wide range of personal

orientations. In personalized learning actions are designed in order to assure processes and practices that shape practical knowledge to the trajectory of growth already established in the individual.

As underlined in a recent study, the way towards the personalization is one of the concepts that over the years traditional schooling has gradually discovered and incorporated as common principles, being the principles that Maria Montessori discovered in the first half of the 20th century. “However, although schooling is changing, those changes are often relatively superficial. A professor of education might develop a new reading or maths program that is then adopted with great fanfare by a few school systems, but the curricular change is minute relative to the entire curriculum, and the Lockean model of the child and the factory structure of the school environment still underlie most of the child’s school day and year. “Adding new ‘techniques’ to the classroom does not lead to the development of a coherent philosophy. For example, adding the technique of having children work in ‘co-operative learning’ teams is quite different from a system in which collaboration is inherent in the structure” (Rogoff, Turkanis, & Bartlett, 2001 , p. 13 quoted by Lillard, 2010).

In conclusion, problem-solving training is an educational action that can lead to an authentic personalization of the educational system. It’s one of the consequences of the Montessori’s ideas and principles which are focused on independence as a personal perspective also for adult-learners.

Educational activity in practice

Create a problem-solving context

Step1

This exercise can be applied to different topics, in particular to give a practical dimension to theoretical knowledge. Mathematics and economics can be easily adapted for this exercise.

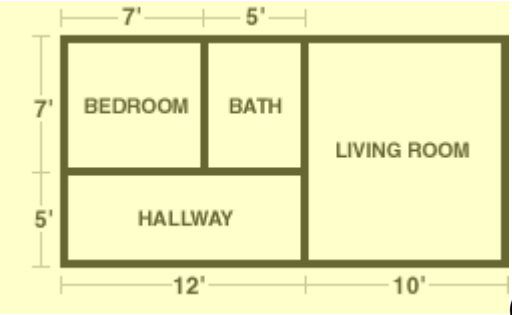
The teacher explains an aspect of maths or economics.

An example: Figuring area: Squares and rectangles

Make the adults imagine they have to plan buying new carpeting for their home. They are going to put down carpeting in the living room, bedroom, and hallway, but not in the bathroom. They have to try to work out how much carpet they might need to cover these rooms, figuring out exactly what they need. To determine how much carpet you'll need, you'll use this simple formula:

$A = L \times W$

Or in other words, "area equals length times width." This formula is used to determine the area of a rectangle or square. In the floor plan below, all of the floor space (as well as the walls and ceilings) is made up of squares or rectangles, so this formula will work to figure the area you need to carpet.



(https://www.learner.org/exhibits/dailymath/decorating.html)

The teacher asks the learners to focus on their personal problem and then discuss about it using all the information they are able to find on the Internet. The only thing they will have to write is a timetable indicating how long it took them to find a solution.

Step 2

Discussion and Portfolio

All the learners are involved in a short presentation. The topic is -"*What are the measurements of the carpet I bought and How did I calculate them"- (or a similar topic related to what is defined as a general application of Maths in real life).*

The presentations will focus on explaining the general rules. The teacher has the task to collect the portfolio of all the learners involved and define a common class approach.

PORTFOLIO

Timetable

Day (number from 1 to 7) – *day 1 is Monday*

Morning

- hours
- minutes

Activities Carried out

(*brief description. Searching the Net, reading, making exercises, asking colleagues or others etc…*)

Afternoon

- hours
- minutes

(*brief description. Searching the Net, reading, making exercises, asking colleagues or others etc…*)

Evening

- hours
- minutes

(*brief description. Searching the Net, reading, making exercises, asking colleagues or others etc…*)

Methodologies and approach

Brief description

Step 3

General discussion and production of evaluation model

Pedagogical remarks

According to the Montessori's ideas about role of the teacher, the Effective teachers encourage their students to explain and justify their solutions. They ask them to take and defend positions against the contrary other's claims. Teachers have to scaffold student attempts to examine conjectures, disagreements, and counterarguments. With their guidance, students learn how to use mathematical ideas, language, and methods. As attention shifts from procedural rules to making sense of mathematics, students become less preoccupied with finding the answers and more with the thinking that leads to the answers.

Students need to be taught how to communicate mathematically, give sound mathematical explanations, and justify their solutions.

Teachers should encourage their students to communicate their ideas orally, in writing, and by using a variety of representations.

Teachers can use it to highlight ideas that have come directly from students, to help develop students' understandings that are implicit in those ideas, to negotiate meaning with their students, and to add and compare new ideas, or move discussion in another direction.

In contemporary terms, Kilpatrick et al. (2001, p. 420) explained, "studies in almost every domain of mathematics have demonstrated that problem solving provides an important context in which students can learn about number and other mathematical topics". Addressing the educative activities to adults, problem-solving ability is enhanced when students have opportunities to solve problems themselves and to see problems being solved. Further, problem solving can provide the site for learning new concepts and for practicing learned skills.

UNIT 15

DEVELOPMENT OF THE ABILITY TO CREATE ONE OWN'S EDUCATIONAL PROGRAM, ALSO THROUGH INFORMAL AND NON FORMAL WAYS

Adults tend to prefer self-direction. The role of the teacher is to engage in a process of inquiry, analysis, and decision-making with adult learners, rather than transmit knowledge. That is because adults' experiences are a rich resource for learning. Active participation in planned experiences—such as discussions or problem solving exercises, an analysis of those experiences and their application to work or life situations—should be the core methodology for training adults. Adults learn and retain information more easily if they can relate it to their reservoir of past experiences. Moreover, adults are aware of specific learning needs generated by real-life events such as marriage, divorce, parenting, taking a new job, losing a job, and so on.

We can say that adults are competency-based learners, meaning that they want to learn a skill or acquire knowledge that they can apply pragmatically to their immediate circumstances. Life or work-related situations present a more appropriate framework for adult learning than academic or theoretical approaches.

Adult learners' needs and interests are the starting points and serve as signposts for training activities.

Also in Maria Montessori's learning models students have control over the path and pace of their learning.

While a superficial look at the Montessori method and the ability to create personal educational programs for adult learners reveals obvious differences, a deep-dive into their undergirding principles reveal a set of very similar core values. Interestingly, these shared values manifest themselves in similar ways in terms of teacher and student roles as they are played out in seemingly-contradictory environments. They both prioritize the personalization of learning and create systems that allow for customization of content and instruction: this means the choice of "work" that is matched to the learner's individual interests, strengths and abilities. Montessori educators are trained to provide students with the next step in a sequence of lessons when the individual learner shows signs of readiness.

In this way students are active participants in their own learning, rather than learning passively in whole-class lecture-style classrooms. There is more peer-to-peer learning and opportunities for self-guided and informal learning than traditional settings. Since learning comes from multiple places, teachers in both Montessori and in a personalized adult education settings take on varied roles. Teachers in both cases move from traditional roles as experts with the primary task of instructional delivery to facilitators and guides of learning which is personalized and customized to individual learners needs by the learners themselves.

There is a reason why the teacher in the Montessori environment is referred to as the “Director/ess”; her/his primary task is to direct learners to ability-oriented lessons that students then explore with her guidance and support only when needed. The same is true for personal learning environments. The focus is on creating opportunities for discovery and self-learning rather than expecting learners to learn primarily from the instructor’s direct action.

Irving Lorge (1947), writing about effective methods in adult education, suggested that to reach the adult learner, it is important to teach what adults want. He stated that adults have "wants" in the following four areas:

1. To gain something.

2. To be something.

3. To do something.

4. To save something.

Eduard Lindeman proposed that adults learn best when they are actively involved in determining what, how, and when they learn.

Shaping the ability to create one’s own educational programs fosters the development of abilities.

The distinctive feature of an ability-based approach is that adults are expected to use what they already know.

This way of learning can develop some personal characteristics such as

• a sense of responsibility for the adult learners own learning and the ability and desire to continue learning independently

• self-knowledge and the ability of adult learners to assess their performance critically and accurately

• an understanding of how to apply knowledge and abilities in many different contexts

Essentially, the goal is to create independent lifelong learning and the development and demonstration of specific abilities in disciplinary and interdisciplinary contexts are a means to that end.

For example, adults can develop specific abilities in one field (chosen by them) and then apply them to other areas. This can favour an independent process of transfer learning since expectations make *every* adult learner aware of his/her possibility: once adults gain experience, they begin to draw on various abilities they have acquired and combine them in more complex ways.

Educational activity in practice

Creative self-directed educational program

Step 1

The teacher facilitates the following points:

- *Learn who you are.* Know your strengths, passions, weaknesses, talents, gifts, values, experiences, successes, failures.

- *Learn what you love.* Adult learners have to pay attention to the things that interest them. They have to point out which topics inspire and motivate them and for what reason/s and organize an "I love to know/do" list.

- *Learn what you hate.* The "I hate to know/do" list can be just as powerful as the "I love to know/do" one. The learner has to understand which one things/topics that he/she doesn't like at all.

Everything should be recorded.

Step 2

Now each learner has to define what he/she would like to know and learn and for what reason/s (for the job, for being a better citizen, for the family, for health, for one's wellbeing…).

Once the topic/topics are chosen the learner will have to surf on the web in order to find resources (documents, researches, educational games…) which can allow him/her to organize the self-directed educational program. Also a timetable of the self learning program has to be drawn up.

Step 3

Finally, the teacher (facilitator) assesses the learners' level of learning, discussing in class what has been learnt, how this new knowledge can be used, if the resources found were enough to bridge the knowledge gaps.

It is important that the adult learner evaluates also the experience of the self directed educational program.

Pedagogical remarks

It is important for the teacher to act as facilitator of the process, presenting structured activities that generate the students' ideas, concepts, or techniques that can facilitate the learner's program more effectively: this means that the facilitator must help students in deciding for themselves what is important to be learned.

The facilitator has to take into account that adult learners' needs to validate the information based on their beliefs and values and to expect that what they are learning can be immediately useful.

The teacher has also to consider that:

- The adult learner is primarily in charge of his or her own learning. The facilitator does not have the power to implant ideas or to transfer skills directly to the learner. He/she can only suggest and guide.

- The facilitator's primary responsibility is to do a good job of managing the process through which adults learn.

- The learners have to be encouraged to use their own judgment and decision-making capabilities.

UNIT 16

CREATION OF A COMMUNITY OF LEARNERS USING ALSO SOCIAL MEDIA

Learning should not be viewed as simply the transmission of abstract and decontextualised knowledge from one individual to another, but a social process whereby knowledge is co-constructed.

Maria Montessori of course didn't talk about community of learners, but about a learning that is situated in a specific context and within a particular social and physical environment.

Only in 1991, Lave and Wenger developed the notion of Community of practice (CoP). Their central idea was the notion of legitimate peripheral participation which was the description of how experienced workers, the "old timers" were passing their skills and knowledge to newcomers and the introduction of the apprentices to the culture (heritage) of the community in order to transform the newcomer to an expert (University of Leicester, 2004; Lave and Wenger, 1991).

This type of learning allows an individual (students/learner) to learn by socialization, visualization, and imitation. Lave and Wenger's study focuses on how important being social is to learning. In believing that learning is social, Hung adds that learners who gravitate to communities with shared interests tend to benefit from the knowledge of those who are more knowledgeable than they are. They also underline that these social experiences provide people with authentic experiences: when students are in these real-life situations they are compelled to learn.

Many of the original examples from Lave and Wenger concerned adult learners, and situated learning still has a particular resonance for adult education. For example, Kimble and Hildreth show how adult learners discover, shape, and make explicit their own knowledge through situated learning within a community of practice. They define a Community of learners as a place where people learn by being part of a social context of real practice. They used the concept of legitimate peripheral practice to refer to the process by which newcomers become part of the community of practice and old-timers continue to learn.

The focus on the social aspect of this way of learning is not a displacement of the person. On the contrary, it is an emphasis on the person as a social participant, as a meaning-making entity for whom the social world is a resource for constituting an identity. This meaning-making person is not just a cognitive entity. It is a whole person, with a body, a heart, a brain, relationships, aspirations, all the aspects of human experience, all involved in the negotiation of meaning. The experience of the person in all these aspects is actively constituted, shaped, and interpreted through learning.

Learning is not just acquiring skills and information; it is becoming a certain person—a knower in a context where what it means to know is negotiated with respect to the regime of competence of a community.

It must be underlined that the Communities of Practice can fit to the web 2.0 applications like forums, instant messaging, video conferences… that in fact have created a new wave of CoPs allowing the

community members to create, publish, exchange, share, and cooperate on information (knowledge) in a new way of communication and collaboration. The Web 2.0 technology makes the Web not only for browsing, but also for creating and sharing.

As matter of fact, Web 2.0 stands for complete openness in terms of open community where the internet users can participate, collaborate in a loosely regulated manner for a common goal. This goes through online approaches and the process is open to everyone who wants to take part. Besides the open platforms, Web 2.0 enables and facilitates Internet collaboration by providing a cluster of new generation of social software such as Wikis, Blogs, Really Simple Syndication (RSS)feeds, video podcast, Ajax-based browsers, instant messenger, and other social networking software.

One of the essential goals of applying Web 2.0 services in communities of practice is to enhance interactive communication and collaboration among participants in the communities: in Web 2.0 participants are co-workers as well as co-authors. They can read and write in the Web, in which participants become the consumers and producers of information (knowledge) and services.

In this way the learning process is dynamic and active. It is alive.

Educational activity in practice

The aim of this exercise is to experiment the concept of Community of Learners through social writing.

Step 1 – live lesson

Everyone loves a good story. Writing it is another matter. Come to think of it, crafting a good story shouldn't be too difficult. We are surrounded by stories of all kinds. Films and soap operas are the visual ones. Advertisements on TV are brand stories. The dreams we concoct in our minds are also kind of stories; even the lies we conjure up are one of a kind stories.

The teacher will ask to the community to find an idea and to create together the first idea/trace of story.

The community will have to write the chosen and shared story, but without an end.

Step 2 – on line lesson

Learners participate in the collaborating writing community. Each member will have to write its own end on line. They will then read all the written endings and vote for the best one.

Step 3 – live lesson

Open discussion: the adult learners provide their feedbacks, praises, and motivation about their own choices.

The winning ending will be published on line.

Pedagogical remarks

Social networks allow learners, once they move beyond the personal connections, to embrace a community where they can learn from each other. Social interaction is an important part of the learning process. As technology has grown and become an integral part of the lives of children, teenagers and young adults, older adults have been forced to adapt. And the proposed exercise could be a way.

To reach good results the teacher has to identify the *key fundamental principles/criteria required to promote effective communities*

- a sense of purpose,

- group cohesion,

- teacher guidance becomes learners' self-group management,

- learners provided with guidance to encourage/promote independence/autonomy

- learners need sense of 'ownership',

- the teacher needs to be prepared to 'let go' take a back seat'.

Part 3 – Application of the MOMA model: European laboratories and experiences

In the following section the results of the laboratories conducted in the countries involved in the MOMA project are presented. The goal was to verify the very first impact of the ideas elaborated at theoretical level in order to have a first platform of indications for putting in evidence if and how the ideas of actualising the Montessori method for adults presents opportunities and strengths.

The labs have involved a target group of clients with specific problems of social integration. The labs were addressed to a large spectrum of adults living in social critical situation: Roma adults living in a marginalised area, immigrates woman at risk of social isolation, long-term unemployed and unschooled women… these are just some exempla of the adult learners involved in the experimentation.

The results show how the ides of a Montessori for adults is sustainable. However if the Montessori method was experimented for decades with children, the registration of the impact to adults requires time. It is the sustainability of the idea at counts: the institution involved in the MOMA project intended to live a "pedagogic track" to other organisations that are willing to experiment a new opportunity to face the crisis "growing trees" and to help people with social problems in order to face the challenges of their lives. According to Maria Montessori is the child that counts: all the educative efforts have to be focalized on the human being. The Montessori for adults has followed the same inspiration: beyond all the theoretical frames, we have to think that adults can consider education as one of their chances of improving their social condition.

5.1 Results in Italy - Beneficiaries: NEETs - Not in Education, Employment and Training

Area/Areas experimented

The experimentation was related to the area “Absorbent Mind”. Because adults learn in different ways, by the concept of "absorbent mind" we understand the capacity of the brain to assimilate the information and the sensations received from the environment. The recent discovery reveals that the attention of the adults is higher if their senses are employed in learning activities. The principle of absorbent mind is related to the need to “do it myself” that Maria Montessori marked in terms of personal autonomy. In this sense the personalized approach that leads the adult-learners to find their own way to the learning experience gave us the opportunity to mix the “Absorbent mind” with the principle of “Independence” as a result of a learning path that is considered “concrete and usable” in the adult’s life.

Beneficiaries

The Moma approach was experimented in a English course addressed to 15 NEETs - Not in Education, Employment and Training- adult learners, with specific social hardship and living situation of social isolation. Most of them had a very low scholar background and the opportunity to learn English represented a social and professional way to acquire competences, also for entering or re-entering in the labor market. Most of them were more and more convinced that the future doesn't store positive opportunities for them, but just further problems and difficult situations. The course was organised with the aim on one hand to give essential competences for dealing a basic relationship in English, but on the other hand, the experimentation tried to lead the adult in using the storytelling method for enhancing a process of personal biography

Main characteristics of the Experimentation (brief description of the activities, main aspects, some exercises, some quotes of the participants)

The learning program was structured on the 6 experimentation stages, focused on teaching English through a process of creative storytelling. The main used approaches were creativity, of course, but also visual learning, emotional learning and experiential learning.

The basic elements were been the following:
- The adults in this Zero Beginners class already knew a little English. Even students who have never studied English before know some internationally-used "English" words.
- To lead the adults towards the independence the teacher needs to rely heavily on mime, gesture and visual aids.
- It’s important to start the training path helping the students to get their mouths around English sounds that they have never heard or tried to pronounce before and introducing the students to pairwork, which may be totally new to them.

Then a comfortable framework and environment to work was created inside the classroom in order to guarantee an huge amount of freedom for each learner to express himself/herself.

Some of the activities-exercises were the following:

Tactile approach: touch something without seeing and expressing in English the provoked emotions

Audio-visual approach: listening the favorite song or watching a video clip and writing the feelings.

Emotional approach: “The Color of Love” is an exercise in which learners were invited to reflect on a variety of colors and the pleasurable things that those colors invoked. They then had to write a short poem about the provoked emotions.

The exercises didn’t only help to get the concept of English grammar, but they mainly helped to see how learners reacted when experiencing a specific situation. They also identified, examined, evaluated, and used the elements dialogue based on emotions and storytelling.

The results were very good in terms of improving the level of English knowledge, in terms of satisfaction, in terms of acquiring personal, relational and social competences.

Positive aspects & Lessons learnt

The results of the MOMA experimentation demonstrates the validity of the application of the actualized Montessori approach in adults education. Even if the analysis of the reached results needs further evaluation and exploration, we can anyway conclude that Montessori can be applied as a scientific method addressed to adults for several reasons:

- Flexibility on setting the rules and flexibility in the organisation of the time that are positive elements in adult education
- Personalisation of learning style in order to encourage the possibility of choosing the appropriate learning approach
- Validity of the strategy related to include the social competences as a transversal base of content in the education of adults.

In general terms we can say that the MOMA method is a Competency-based education strategy and the most important characteristic of competency-based education is that it measures learning rather than time.

In our case the progress of adults during the storytelling approach in English were based on demonstrating their competence, which means they prove that they have mastered the knowledge and skills (called competencies) required for a particular course, regardless of how long it takes. Competency-based education is better for all adults learners because it allows them to study and learn at their own pace, and it is corresponding with the idea of independence that is part of the Montessori’ strategy.

The experimentation carried on in Italy shows how competency-based education can improve quality and consistency of the learning results.

The Italian contest for the realization of a Montessorian learning space for adults

A **Second Experimentation activity** , related to the LEARNING ENVIRONMENT principle, was done in Italy. A Context was launched in order to involve architects together with other experts with the aim to identify the main barriers that prevent the formation of adults at a disadvantage physical, social or cultural level and overcome them with the Montessori principles of freedom of expression, independence and respect for the learner.

Objective of the Context of Ideas was primarily increasing the awareness on issues related to Montessori views about the space dedicated to the education. In this framework the competition of ideas had the goal to realize blueprints for setting up a space dedicated to learning activities for adults that meets the requirements of Montessori learning environment, according to criteria established by MOMA PROJECT. The place where we learn is intended, in the approach of Maria Montessori, such as space, physical and mental, suitable interaction and cognitive skills development. It's not just a classroom: a new social environment is structured, with materials prepared and "adult-sized".

Along with the issue of physical space and conceptual education, there is also the issue of social space and the space mediated by social networks. Food for thought, therefore, is also how the structured environment of adult learning generates an expansion into space relational nonphysical. The criteria for inspiration in the design of the space, derived from experience Montessori, rethought in the dimension of adult learning, are listed below along with the terms that will summarise:

- Interconnection and communication between learning environment and external environment is understood as a physical space and space connectivity
- Attention to the welfare and comfort through facilities and furnishings emotionally engaging and inspiring
- Circularity of knowledge and the centrality of the learner through a space where no one-way distribution of adults compared to the teacher's Community
- Multi modularity as meant as identifying a given place, not fixed, but adapted and adaptable to learning experiences and cognitive (CREATIVITY '). The proposed ideas must be contextualised in the spaces of Villa Montesca which will be equipped with furniture and technological predispositions such as to create a space that encourages, in terms Montessori, learning of a group of 15-20 adults.

A Commission of experts (pedagogues, famous architects, experts in adult education) analyzed the 12 ideas and the blueprints. The winner project received a symbolic prize equal to 1.000,00 Euros and the idea will be realized: the Montessorian classroom will be created in Villa Montesca. All the projects that participated in the competition were shown in an exhibition of the works realized that was organized during the MOMA National Conference in Italy.

5.2 Results in the UK - Beneficiaries: learners from a variety of backgrounds, particularly those who had come into the UK from other countries, mainly African and Asian countries

Area/Areas experimented

A range of Experimental Workshops were held to test the MoMa strategy in relation to adult learners who experience specific difficulties accessing mainstream adult education. The Experimental workshops used Montessori methods in relation to the workshop experience provided to these adult learners.

Beneficiaries

The experiment was carried out with real life learners. The learners were from a variety of backgrounds, particularly those who had come into the UK from other countries, mainly African and Asian countries but also people from European countries who were now living in the UK. All were adults and all had experienced difficulties in accessing traditional adult learning because of such barriers as the traditional methodology used and additional language and cultural barriers that made learning difficult.

Main characteristics of the Experimentation (brief description of the activities, main aspects, some exercises, some quotes of the participants)

For the first experimental workshops, the adult learners were invited to reflect on their past educational experiences with specific questions on successes, difficulties faced, barriers to learning that they felt were in place. This was done in a group setting. Then the participants were invited to identify and discuss their own strengths and weakness in smaller groups of two. Each group was invited to depict them their

experiences in a visually creative way. Following this exercise a deep discussion on what their current goals are, making efforts as a group to come up with ways that would help them to educationally achieve them despite any continued existence of certain barriers. This was done to illustrate how a learning experience based on Montessori methods would assist in making their learning experience more positive and more likely to be successful in terms of them achieving their educational goals.

For the series of follow workshops, a clear exercise was given to the participants. First of all, each main group was given the opportunity to decide how they wanted to work, whether individually or in a group. The assignment was to come up with an idea for a business or service that they would like to set up and manage and then to come up with a compelling business plan and proposal to be pitched to possible funders for a chance to receive suitable funding to enable the idea to be implemented.

The exercises were a very successful. The methodology of using each member of the group to help and assist each other in learning and to use the theory of the Absorbent Mind in that information shared both formally and informally became part of the learning process showed that such a methodology worked well in determining a better chance of educational success with these groups of participants. This was indicated by the types of positive comments shared by the participants who expressed how much they had liked taking part in the experimental workshops and how well they thought such methods were suited to adult education. Comments included:

- the workshop was fun and made me realise there is more to learning than books and paper.
- it brought out the hidden talent in me I never knew I had.
- it was different and enabled me to expose my abilities which I did not know
- it was interesting and the activities we carried out were creative, I learnt different techniques of learning
- I found it to be a beneficial experience allowing women to gather in a safe space and express themselves.
- the workshop was very good, effective and educative
- it was one very good workshop
- it was really encouraging
- absolutely very engaging
- it was an eye opener, ideas for setting up my own business
- it was brilliant
- good environment and well trained staff

Positive aspects & Lessons learnt

The results were indicative that using the Montessori principles and utilising the Montessori methodology enhanced the learning experience for adult participants. In terms of adult education for those people who have previously experienced problems accessing education, it was clear that they were convinced that such an approach greatly enhanced the educational experience when measured against their previous experiences in more traditional educational environments. There was a pattern of learning become more interesting and open to building on previously gained knowledge and experience when Montessori methods; an aspect of learning that is particularly important for adult learners and even more so for adult

learners with cultural or linguistic barriers that may be making learning more difficult for them. The participants were clear in their assessment that this experimental educational model was more suited to the adult learning experience than when taught in the more uninspiring traditional educational manner.

The Experimental Workshops clearly demonstrated that Adult Education needs to be relevant to the needs and the aspirations of the learners. Because no one person learns the same way, teaching methods also need to be flexible to the needs of the learners, particularly when those learners are adult and have other knowledge and experiences that they can bring into the learning environment.

5.3 Results in Romania – People in needs and disadvantaged adults

Area/Areas experimented

The experimented Montessori principle was “Absorbent mind”, in particular the areas of exploration were the following:

- Diversification of teaching methods to meet the needs and learning approach in adult learners
- Personalization and co-design of education
- Participatory approach in order to facilitate the creation of communities of learners
- Intellectual stimulation of adult learners during the activities
- Provocative teaching style to stimulate critical and lateral thinking

Beneficiaries

Target group : people in needs and disadvantaged adults

Main characteristics of the Experimentation (brief description of the activities, main aspects,

Participatory approach for the re-construction of a community of learners. The first stage was to transform a group of individuals/ women and men in needs into a Community of learners. The workshop was opened with an “ice breaking” SECTION. Each participant had to underline his/her abilities, answering to 3 questions: what he/she likes to do, how many children they have and what are their wishes to be fulfilled by a good fairy. The trainers selected a video spot (https://www.youtube.com/watch?v=8AcWo3gbtBk) about the principle of education and the right to be educated. The term is “what does being educated mean to me”

After watching the video spot, an analysis on the transmitted messages was done about positive and negative aspects of the film. Then the participants had the task to re-build their personal educative history. The discussion among the group had the aim to identify what of the adults educational experience remains in the present time. Live stories emerged and all the participants underlined the importance of education as a means for social and personal success.

Methods used; observation, dialogue, conversation, personal engagement, adult-centered interactive methods/ mind map, drawing, game, role play, case study, group discussions, simulations, problem solving

The other lessons for implementing the "absorbent mind" principle, took place in a warm, open, pleasant, confident relationship. The group established in a shared agreement the rules for their learning. The agreement has some key elements: everyone has to be understood, do not criticize, everyone has to be heard, everyone has to be open and honest, etc.

In accordance with the class rules, the work begins with scarves game, for the presentation of the people

attending the course. The group was stimulated through the game to communicate, to represent their traits, characteristics, desires, their own abilities or competences. In this framework the experts/trainers selected a real life situation and defined personal and social competences.

The group discussed the proposed situation by the facilitator in which a special focus was given to the reaction of people when facing a critical situation. The identification of the situation was related to the specific issues, underlined by the members themselves.

Another interesting step of the work was related to a special theme given by the facilitator: any participants had to choose his/her own special ability or skill. A participant wrote a poem, another told a book he had read, and a disadvantaged person without education (only 2 classes) asked the group to be helped to understand a text related to science, for helping her child.

Then the facilitator choose a common story, "A story of life". The participants realized a storyboard underlying the main episodes of their lives and they wanted to create their own video. All the members were encouraged to think carefully about what they want to communicate through this video. They wrote the story and divided the roles: a student was the screenwriter, another one the director, some others decided to be the actors, etc. A qualified person helped them for the shooting and the editing phase.

Once the video was finalized the class watched what they had filmed and all of them were really surprised about their achievements. All the aspects were deeply analysed: behaviours, language used, level of responsiveness, self-assessment.

Finally all the participants wrote the competences that they acquired during the Montessorian experience: the personal competences, but also the social and relational competences

Positive aspects & Lessons learnt

Montessori can be applied to adults, because:

1. the adults are put in value and motivated without the use of critical evaluation

2. the system is flexible – it doesn't set rules or boundaries

3. adults have got the possibility to choose their own learning method

4. adults are stimulated to develop their native aptitudes and skills

5. The method is a trans-curricular alternative which facilitates the optimal valorisation of the adult's sensorial competences

6. the learning is based on the fact that the mind of the adult can absorb information according to their needs

7. adults are more receptive if they have a space that is adequate to their learning needs and if their visual memory is stimulated

Lesson learnt: Participants worked on all the proposed activities that were conducted in a friendly climate of cooperation and mutual support, they shared experiences, information and resources. Participants also put in evidence that education is important for life; that it's important to assume the mistakes and learn from them; that each one has a talent or a skill.

5.4 Results in Germany - Beneficiaries: Migrants or adults with migrant background

Area/Areas experimented

The chosen Montessori principle for the experimentation was „Independence“ – in German „freie Arbeit“ meaning free work, with the main focus on „Help me do it myself“.

Beneficiaries

The main target group were migrants or people with a migrant background who face various problems in Germany. The group was formed by migrant women from Russia and from Ukraine. The participants were at different stages of learning German: half of our group arrived in Germany 2-3 years ago, and therefore are still in the process of learning the language. The other half of the group have been in Germany for a longer period and have a better command of German. All our participants were unemployed and in the process of trying to find employment. They were partly highly qualified (teacher, engineer, designer), partly with lower qualifications (vocational school). Some of our participants were also single mothers, which made their situation at the labour market even more difficult.

Main characteristics of the Experimentation (brief description of the activities, main aspects, some exercises, some quotes of the participants)

The contents of the workshop were organized in relation to the most burning issue of our participants: employment. The aim was to give support to unemployed women with a migrant background, who are looking for orientation and vocational perspective, to discover their interests and strengths in relation to their vocational future, to help them create and develop their own ideas and to support them with their preparation to enter the labour market.

Main methods and approaches used during the Workshop:

- Learning by doing
- Activating methods
- Increasing motivation
- Free decision-making and free solutions
- Creative work
- Making things tangible and visual
- Guiding and not instructing as trainers
- Close observation of the participants and their needs

Some of the exercises done with the group:

- We asked the participants to think about their strengths, their interests, their problems and possible solutions. Here we used Lego blocks, a material that is in a way similar to the Montessori material. At the beginning the participating women worked on their own with the Lego blocks to build four different towers. One colour represented the skills, competences and qualifications they already had, another colour the skills and knowledge they still needed to acquire to reach their goals, a third colour the steps they needed to make to get these skills, and a fourth colour the steps they regarded as impossible or very difficult to do at the moment. They wrote all their ideas on stickers, put the stickers on a lego brick of the corresponding colour, and built a tower of each colour. After the exercise they worked in pairs to discuss each other’s results and then introduced the towers to the whole group. The exercise had a very positive effect, as most participants had a

long tower of skills and competences, which made it visible that there are lots of things they can do, and the group gave everybody ideas about how to solve the problems they deemed impossible or too difficult.

- We asked our participants to think about where they see themselves in 5 years time: what would they like to have achieved by then, what their job would be, what their family situation would be. They had to draw a picture of all those aspects. They all presented their ideas to the group. The exercise was a great way to collect and consider the wishes and options of the participants and to bring some clarity into their future perspectives.
- What are my personal needs for an inspired learning? – My perfect learning environment
  We invited our participants to think about what the perfect learning environment for them would be. After having answered a series of questions about learning habits and needs, they planned a "dream classroom" and presented their ideas to the group. They were free to choose the way they describe this classroom, by drawing, pictures, decoration material, examples from the internet, etc.
- Planning game: planning and creating my own company
  As a continuation of our discussion on the interests and future plans of our participants, we moved on to develop concrete ideas. We asked everybody to write down 2-3 areas where they would be interested in creating an own company/organization. All their ideas were collected on the wall and then they made groups of the similar ideas/ideas of the same area. Small groups were formed according to these similar interests, and they started to think about the concrete steps of realization. They needed to consider short-term and long-term goals and plans, the clients they would target with their products/services, the steps they would need to follow to reach their goals. They were also asked to create a name, a logo and a slogan for the company, as well as to design a poster to present their idea. On the last day of the Workshop they all presented their future company to the group. The group acted as a kind of a committee that had to decide how realistic the plans of the companies were, how well-thought out the short- and long-term goals were. After the presentation the group could ask questions from the future entrepreneurs and give their opinion about the planned company.
- Role play: interview for the job I wish to find now
  The participants worked in small groups and listed up the questions they thought would come up in a job interview. When their lists were ready, they decided who is going to play which part in the game: an interviewer, an interviewee and the person who is going to film the interview. They set up an interview for a job application that the chosen interviewee might have in the future. They practiced the interview until they felt ready for filming. Then they filmed the final version. The films were watched together by the whole group, and we discussed and reflected on the answers given to the interview questions.

Quotations from our participants:

"It wasn't at all boring, there was a lot of moving around, we were all very active. We didn't have to sit and listen for long, e.g how you do an interview for a job application, that would have been very boring. We could try it out ourselves."

"Practicing is so important. Everybody has ideas in their heads, there are lots of ideas going around. But you need to get those ideas in order, and for that you need to practice. Otherwise you can't develop your ideas further."

“We got a new perspective on possibilities, we understood that with hard work we have a chance to get somewhere in Germany and that is a great recognition.”

“To see ourselves talking and working on the videos – you can watch them as many times as you want, always from a different perspective , e.g. what I said, what my body language was like, and thus you can improve your presentation.”

“The Job interview game was the “coronation” of the Workshop. We could test ourselves, we could try out different things, as many times as we needed. And we had some small, but important lessons, which would have never come up without trying it out, e.g. switch off your mobile phone before you go in to the interview.”

“I sit in a German class with men who talk to each other loudly during the lessons and they don’t want to be there at all, they don’t want to learn. Unfortunately the teacher is not interested either whether we learn something or not. She doesn’t want to be there either, she is not motivated, she just wants to get her job done. We have to be there, she has to be there. But it doesn’t work that way. We need inspiration from the teacher, too. It would be great to have a German course like this one was.”

“We started to think about our own future, our own ideas. We all have ideas in our heads, but often we don’t talk about those. Here we had to think about them, discuss them, present them. We could be creative, we could say everything we had in our mind.”

Positive aspects & Lessons learnt

Although the impression is that there is a lot more work to do in the process of the application of the Montessori method in adult education, it must be underlined that it is by all means possible and worthwhile to adapt and develop further the methods that Maria Montessori developed a 100 years ago. The Montessori experiment was an overall positive experience for the participants. It posed lots of challenges and required a different kind of focus, but positive effects and changes were noticed in the adults who took part to the training. The results of the Workshop were very encouraging, the methods motivated and activated the participants for a more effective learning and it was received with enthusiasm. The participants opened up to new ideas, enjoyd learning and discovering their own abilities and creating options for their future. Their motivation increased further through the process of active learning and they became more and more independent and less and less in need of instruction. Being inspired and motivated made learning fun, an enjoyable activity that produced great learning results.

The most important lesson learnt from the experience was that it is necessary to increase contact and cooperation between adult education institutions and Montessori institutions, as well as between adult educators and Montessori teachers, for developing further the Montessori method for adults. Trainers and teachers in adult education need the expertise and guidance of Montessori teachers in order to be able to conduct workshops and courses that successfully incorporate the methods of Maria Montessori.

5.5 Results in Lithuania - Beneficiaries: Roma adults

Area/Areas experimented

The learning space was built around two main principles which are physical and socio-cultural. Physical environment included practical workshops on fishing, making the educational process attractive and interactive. The socio-cultural environment was suitable for Roma as for target group.

In our case Learning environment being well known to Roma adults lets them feel self-confident, comfortable, encourages creativity and, for sure, stimulates the sensorial approach.

Beneficiaries

Experimentation as educational process was oriented on Roma adults. Roma are one of the most discriminated and marginalised groups in Europe as well as in Lithuania. According to last census (2011), about 2500 Roma live there. This is not a big number in comparison with other EU countries. Nevertheless Lithuanian Roma meet the same problems. The largest Roma community lives in Kirtimai, Vilnius, where the training took place. Kirtimai encampment and its dwellers face various problems: illegal housing, crime situation, unemployment, poverty, lack of education, as a consequence – lack of social skills etc. Tabor is the closed world. The only way to break this vicious circle is to provide education, knowledge, to show the possibilities of other life.

Main characteristics of the Experimentation (brief description of the activities, main aspects, some exercises, some quotes of the participants)

The chosen topic was Fishing theory and practice, because fishing in context of nature protection is one of the most interesting and important topic for Roma:

- they have basic knowledge;
- they have practical skills;
- they have freedom of choice;
- they can use new competences in everyday life.

Educational process included different forms: lectures, participatory meetings, workshops, individual learning. A structural plan for the MoMa Experimentation was prepared.

1. Preparation (Expectations, theoretical training (including video courses on fishing and outdoor cooking)
2. The participatory meeting and workshops (including the distribution of tasks: preparing equipment for fishing, watching the weather, choosing the route, buying products for making dinner etc).
3. Practice (Outdoor fishing).
4. Outings

The content of the workshop was organized in learning of social skills. Teachers aspire to create a safe learning environment in which relationships of students and teachers were based on tolerance, indicating the ability to accept others as they are. Tasks were divided in to 4 stages. Stages of preparation are the pedagogical process with the production of pedagogical tasks, defining task of forming social and employment skills. In each period of training certain educational goals were reached.

The opportunities offered by Montessori method in case of Roma community can be used motivating adults to learn. Most of them are early dropouts from system of formal education and the method can encourage them to return by attractive forms of learning.

The trainers and participants of experiment communicated in tolerant way, the learners had basic knowledge that was very important for adults.

The opportunities offered by principles "Learning environment" and "Independence" could provide the Roma adults with some competences, such as:

Self-control: Self-control is an important resource for personal effectiveness. This competence helps manage impulsive feelings that are topical for our target group. Process of fishing develops self-control.

Communication: Necessary competence while working in group: adults started listen well, sought mutual understanding for to achieve common goal. They had to act together for their own purpose.

Emotional awareness: Learners stayed in comfortable environment, were self-confident, that's why they knew which emotions they were feeling and why. First of all, they knew how to behave, second, they recognised how their feeling affect their performance when they participated in practical lessons – in fishing.

Self-confidence: The most important competence for Roma adults, otherwise they "wash their hands". In this kind of experimentation they could present themselves with self-assurance, be decisive, sure about their capabilities.

Orientation to the others: Although fishing is individual process, learners readily met the others needs either during the theory sessions explaining some difficult terms or preparing for practice. They supported each other, got support from trainers.

Achievement drive: Adults with this competence are results-oriented due to simple reason – the process of learning gives tangible result, and this is the half the battle.

Building bonds: It is very important that learners stay in touch with trainers and other participants of experimentation communicating on topic of fishing. Moreover, they cultivate informal networks, seeking for useful information, exchanging experience and knowledge.

Positive aspects & Lessons learnt

The Montessori method helps to open up broad possibilities of integration through education. It allows to solve social problems - reduce the exclusion of the Roma people, identify their problems from outside.

Roma adults positively perceived transformation of a group of individuals in a Community of learners.

The participatory approach and the application of the Montessori Method with Roma adults is for sure a way of finding.

5.6 Results in Portugal - Beneficiaries: Seniors

Area/Areas experimented

The experimented principle was the "Absorbent mind" that was considered during the national workshop for trainers the most attractive topic to work with the seniors.

Beneficiaries

The beneficiaries were 40 seniors (11 men and 29 women) from two classes of Senior University of Évora. All participants were 50+ and the average age was 64 years old. The chosen classes were the Spanish for beginners and Cognition and Aging.

Main characteristics of the Experimentation (brief description of the activities, main aspects, some exercises, some quotes of the participants)

The experimentation was dedicated to understand if seniors have (or not) an absorbent mind.

Five units were tested

UNIT 1 - DIVERSIFICATION OF TEACHING METHODS TO MEET THE NEEDS AND LEARNING APPROACH IN ADULT LEARNERS

"While certain areas of thinking show a normal decline such as age, others remain stable. Moreover, interventions may actually slow some of the changes that occur". This sentence reflects exactly what happens with seniors and most of the times this is the factor that conditionate the self-esteem and motivation for participation in education activities. In this unit the facilitator presented to the learners images to analyse, from where they should find images inside images

UNIT 2 - PERSONALIZATION AND CO-DESIGNING OF EDUCATION

It was required when implementing the method that adult-learners benefit from education so the proposed unit was defined as authentic learning. This means that seniors used several exercises and techniques that could be related to lifelong education adapted to subjects problems and applications of the real world. In this unit the teacher used mysterious texts, where numbers and letters were mixed so that the learners should decode.

UNIT 3 - PARTICIPATORY APPROACH TO THE PROGRAMS AND CONTENTS IN ORDER TO FACILITATE THE CREATION OF COMMUNITIES OF LEARNERS

The understanding of reality increases interest and motivation for educational activities and most of the time the interaction between the members of a group builds relations and fosters networks, increasing the participation of the seniors in the different activities proposed, inside and outside the classroom. The activity was related to the visual poetry and the learners wrote poems based on their experiences.

UNIT 4 - INTELLECTUAL STIMULATION OF ADULT LEARNERS DURING THE ACTIVITIES

Memory attention and creativity were used in order to find out if seniors can appeal to senses, especially the visual approach was tested for understanding if seniors are able to distinguish colours from words. The idea was that the seniors could read the colours in relation to what was written through the "coloured" words instead of identifying the colour directly. The visual exercises in the Montessori approach allows to discern differences between similar objects and different ones.

UNIT 5 - PROVOCATIVE TEACHING STYLE TO STIMULATE CRITICAL AND LATERAL THINKING

Provocative teaching is created using creativity and stimulation and considering that the method tries to contribute to passive learning (adults often attend lessons without interacting - Hamre and Pianta 2007). This approach to learning denies the principles of constructivism that much research on human learning shows to be effective. In this unit we've used images, like the inverted watch, trying to understand if the seniors could easily find out the right time showed in the watch.

Positive aspects & Lessons learnt

The most positive aspect was the flexibility showed by the learners to develop all the proposed exercises, also including the fact that the senior learners wanted to find if they have or not an absorbent mind. The beneficiaries acquired new competences, creativity, communication, self-esteem.

In fact, relational and emotional competences were developed fostering their relation with the group, with themselves and within the community, like self-control, adaptability, communication and self-confidence. Also motivation and self-esteem were developed, focusing on building bonds, commitment and cooperation.

The acceptance was very high and the results were very positive. That's why the activities will be realized with new groups of senior also after the MoMa project formal end, also because we believe that the method it is perfectly adaptable for adults, no matter about their age, for several reasons:

1. The method is flexible
2. The adults are put in value and motivated without the use of critical evaluation
3. Seniors are flexible and show interest in new learning approach, so this factor makes easy the implementation of the planned exercises
4. The adults have got the possibility to choose their own learning method, creating their own learning path.
5. They are stimulated to develop their native aptitudes and skills, use experience and previous knowledge
6. It is an alternative that facilitates the optimal valorization of the adult's competences
7. The learning is based on the fact that the mind of the adults can absorb information according to their needs, if there are no strict rules, without problems of acceptance and integration.
8. The adults are more receptive if they have a space that is adequate to their learning needs and if their senses are stimulated

The obstacle to consider during the experimentation process were:

- The seniors were not always assiduous, due to personal, family and healthy reasons
- Some of the learners identified some of our strategies, like the repletion of similar exercises, which was shown to the rest of the group. Although we consider this a criticism, but also a positive point.
- Applying the Montessori principles needs a longer time to implement, in order to draw the right and pertinent conclusions or to notice any changes in behaviour.

5.7 Results in Spain - Beneficiaries: low-qualified adults in vulnerable situation and at risk of social exclusion, without basic compulsory education

Area/Areas experimented

The experimentation phase has comprised two main principles: the absorbent mind and the independence ones. However, its development also allows to work in some aspects of some other principles such as the ones related to learning environment, experimentation and exploration and observation.

Beneficiaries

The Montessori method has been used with low-qualified adults in vulnerable situation, without basic compulsory education who are at risk of social exclusion and who could be involved on formal or non-formal educational processes.

It has been a group of 20-25 people mainly elderly people (+50 years old). Most of them have an immigrant background, that is, they came from different region than Catalunya but also from other countries (Marocco mainly). Some people belong to collective with special needs – disadvantaged persons.

Main characteristics of the Experimentation (brief description of the activities, main aspects, some exercises, some quotes of the participants)

The didactic path and the application of the Montessori Method was realized through the Dialogic Literary Gatherings with the aim to favour the access to classic books of literature addressed to adult people on basic levels of education.

The literary gatherings pursue two different but complementary objectives:

a) To promote that adults with no academic degree have access to high standing cultural knowledge through dialogic gatherings.

b) To have an impact on knowledge at two different levels: at individual level, by increasing the knowledge of every person that participates in the workshop; at social level, by increasing the academic level of the whole family of the people that participate in the workshop.

The Educational methodology was based on the egalitarian dialogue. «A dialogue is egalitarian when it takes different contributions into consideration according to the validity of their reasoning, instead of according to the positions of power held by those who make the contributions» (Flecha, 2000, p.2). Dialogic learning is based on Paulo Freire's pedagogic contributions and on Habermas' sociologic contributions. These theoretical approaches define that the main aim of education should be social transformation in order to achieve a democratic and supportive society. Dialogic literary gatherings are not aimed at discovering and analyzing what the author of the book wants to say. They are aimed at promoting reflection and dialogue through the different and possible interpretations that may arise from the same text. This specific way of dealing with literature is what enriches literary gatherings.

The general development of the implementation was structured in two parts:

FIRST PART (at home):

It was decided to read the classic book of Catalan literature: Febre d'Or, Narcís Oller. Every participant read, at home, the agreed text, and underlined one or several paragraphs that caught his/her attention, whether because s/he liked it or not, s/he didn't understand it, s/he thought it was interesting... It's important that participants reflect on why they chose that paragraph in order to explain it afterwards. They can consult their doubts on the Internet, in the dictionary...

SECOND PART:

All the people that had underlined a paragraph took the floor to speak. The moderator took notes of all the names. The moderator gave the floor to one of them. This person read the paragraph s/he had chosen and explained why s/he had chosen it. The moderator opened the floor so that all participants expressed their opinions on the paragraph that had been read by the participant. Once all opinions on the first chosen paragraph had been expressed, the moderator gave the floor to another person that would like to read a paragraph. This methodology was followed until everyone that wanted to share a paragraph had done so and the chapter of the week was finished. After it ends, learners choose the next chapter/s to read.

The main points discussed along the discussion of the book were:

- The value of universal classical literature: "Reading classics you can easily detect that topics covered so many centuries ago are related with nowadays problems"

- The importance of respecting the criteria of dialogical literary gatherings: 1) Atmosphere of confidence to allow everyone to speak and participate. 2) Short and concise interventions. 3) Do not repeat ideas. 4) Start the discussion from an idea of the text. 5) Talk about all topics. 6) Everyone brings their experience, their opinion because we all have something to say.

- Dialogical literary gatherings combine academic learning (theoretical) with practical learning: "I've read books I've never thought to" // "Reading together helps you to read and understand what it is difficult and what you cannot do alone at home. Within the gathering everything is easier"

- Dialogical literary gatherings promote "learning to learn": "reading a book makes that you have to look for information about the author, about words, vocabulary, etc. But also to listen and give your opinion as well as understand that your opinion is as valid as any other".

Positive aspects & Lessons learnt

The application of the Montessori method using the Dialogic Literary Gatherings allows finding a space to talk about the education with people with non-academic background. Through the application of the method the became aware of the fact that their educational and daily life situations and concerns are common to many of them.

Furthermore, they realized that they have the capacity and skills to discuss about high standing cultural knowledge, which reinforces their desire to keep learning and, eventually, go back to adult school.

The experimental activity clearly demonstrated that the Montessori method can be properly applied to Adult Education because it can answer to the needs and the aspirations of the learners.
Because anyone has its own way of learning, also the teaching methods need to be flexible in order to fit with the needs of each learner, and the application of the Moma approach stimulated the participants to develop their native aptitudes and skills, to use their experiences and previous knowledge, to absorb information according to their needs.

ANNEX

IMPACT AREAS AND COMPETENCES TO BE ACQUIRED

RELATIONAL COMPETENCES

PERSONAL ASPECTS

Self-control: Managing disruptive emotions and impulses.
Adults with this competence:
• Manage their impulsive feelings and distressing emotions well
• Stay composed, positive, and unflappable even in trying moments
• Think clearly and stay focused under pressure

Trustworthiness: Maintaining standards of honesty and integrity.
Adults with this competence:
• Act ethically and are above reproach
• Build trust through their reliability and authenticity
• Admit their own mistakes and confront unethical actions in others
• Take tough, principled stands even if they are unpopular

Conscientiousness: Taking responsibility for personal performance.
Adults with this competence:
• Meet commitments and keep promises
• Hold themselves accountable for meeting their objectives
• Are organized and careful in their work

Adaptability: Flexibility in handling change.
Adults with this competence:
• Smoothly handle multiple demands, shifting priorities, and rapid change
• Adapt their responses and tactics to fit fluid circumstances
• Are flexible in how they see events

Innovativeness: Being comfortable with and open to novel ideas and new information.
Adults with this competence:
• Seek out fresh ideas from a wide variety of sources
• Entertain original solutions to problems
• Generate new ideas
• Take fresh perspectives and risks in their thinking

SOCIAL ASPECTS

Influence: Wielding effective tactics for persuasion.
Adults with this competence:
• Are skilled at persuasion
• Fine-tune presentations to appeal to the listener
• Use complex strategies like indirect influence to build consensus and support
• Orchestrate dramatic events to effectively make a point
Communication: Sending clear and convincing messages.
Adults with this competence:
• Are effective in give-and-take, registering emotional cues in attuning their message
• Deal with difficult issues straightforwardly
• Listen well, seek mutual understanding, and welcome sharing of information fully
• Foster open communication and stay receptive to bad news as well as good
Change catalyst: Initiating or managing change.
Adults with this competence:
• Recognize the need for change and remove barriers
• Challenge the status quo to acknowledge the need for change
• Champion the change and enlist others in its pursuit
• Model the change expected of others
Conflict management: Negotiating and resolving disagreements.
Adults with this competence:
• Handle difficult people and tense situations with diplomacy and tact
• Spot potential conflict, bring disagreements into the open, and help deescalate
• Encourage debate and open discussion
• Orchestrate win-win solutions
Political awareness: Reading a group's emotional currents and power relationships.
adults with this competence:
• Accurately read key power relationships
• Detect crucial social networks
• Accurately read situations and organizational and external realities

EMOTIONAL COMPETENCES

PERSONAL ASPECTS

Emotional awareness: Recognizing one's emotions and their effects.
Adults with this competence:
• Know which emotions they are feeling and why
• Realize the links between their feelings and what they think, do, and say
• Recognize how their feelings affect their performance
• Have a guiding awareness of their values and goals

Accurate self-assessment: Knowing one's strengths and limits.
Adults with this competence are:
• Aware of their strengths and weaknesses
• Reflective, learning from experience
• Open to candid feedback, new perspectives, continuous learning, and self-development
• Able to show a sense of humor and perspective about themselves

Self-confidence: Sureness about one's self-worth and capabilities.
Adults with this competence:
• Present themselves with self-assurance; have "presence"
• Can voice views that are unpopular and go out on a limb for what is right
• Are decisive, able to make sound decisions despite uncertainties and pressures
• Take fresh perspectives and risks in their thinking

SOCIAL ASPECTS

Empathy: Sensing others' feelings and perspective, and taking an active interest in their concerns. Adults with this competence:
• Are attentive to emotional cues and listen well
• Show sensitivity and understand others' perspectives
• Help out based on understanding other people's needs and feelings

Orientation to the others: Anticipating, recognizing, and meeting the others' needs. Adults with this competence:
• Understand the others' needs
• Seek ways to help the other trying to increase their wellbeing
• Gladly offer appropriate support

Developing others: Sensing what others need in order to develop, and bolstering their abilities. Adults with this competence:
• Acknowledge and reward people's strengths, accomplishments, and development
• Offer useful feedback and identify people's needs for development
• Offer support in order to sustain the other person's skills.

Leveraging diversity: Cultivating opportunities through diverse people.
Adults with this competence:
• Respect and relate well to people from varied backgrounds
• Understand diverse worldviews and are sensitive to group differences
• See diversity as opportunity, creating an environment where diverse people can thrive
• Challenge bias and intolerance

Political awareness: Reading a group's emotional currents and power relationships.
Adults with this competence:
• Accurately read key power relationships
• Detect crucial social networks
• Accurately read situations and external realities

MOTIVATION AND SELF ESTEEM

PERSONAL ASPECTS

Achievement drive: Striving to improve or meet a standard of excellence.
Adults with this competence:
- Are results-oriented, with a high drive to meet their objectives and standards
- Set challenging goals and take calculated risks
- Pursue information to reduce uncertainty and find ways to do better
- Learn how to improve their performance

Commitment: Aligning with the goals of the group or organization.
Adults with this competence:
- Readily make personal or group sacrifices to meet a larger organizational goal
- Find a sense of purpose in the larger mission
- Use the group's core values in making decisions and clarifying choices
- Actively seek out opportunities to fulfil the group's mission

Initiative: Readiness to act on opportunities.
Adults with this competence:
- Are ready to seize opportunities
- Pursue goals beyond what's required or expected of them
- Are able to mobilize the others

SOCIAL ASPECTS

Leadership: Inspiring and guiding groups and people.
Adults with this competence:
- Articulate and arouse enthusiasm for a shared vision and mission
- Step forward to lead as needed, regardless of position
- Guide the performance of others
- Lead by example

Building bonds: Nurturing instrumental relationships.
Adults with this competence:
- Cultivate and maintain extensive informal networks
- Seek out relationships that are mutually beneficial
- Build rapport and keep others in the loop

Collaboration and cooperation: Working with others toward shared goals.
Adults with this competence:
- Balance a focus on task with attention to relationships
- Collaborate and sharing information and resources
- Promote a friendly, cooperative climate
- Spot and nurture opportunities for collaboration

Team capabilities: Creating group synergy in pursuing collective goals.
Adults with this competence:
- Have and promote qualities like respect, helpfulness, and cooperation
- Draw the members of the team into active and enthusiastic participation
- Build team identity, creating a real community of learners
- Challenge bias and intolerance

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