



**METHODOLOGY OF CONSTRUCTION OF  
EUROPEAN DIPLOMAS  
WITH COMMON FRAME OF REFERENCE**

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# METHODOLOGY OF THE CONSTRUCTION OF EUROPEAN DIPLOMAS WITH COMMON FRAME OF REFERENCE

## SKILLS, KEY SKILLS, ATTITUDES AND ASSESSEMENTS

During these last decades, the access to knowledge has considerably improved in such a way as the need to memorize knowledge has become less useful as before. However, the citizen needs to own more tools to use his/her knowledge and face the continuous evolutions of technology and individual practices whether they are of a behavioural, social or professional nature. The result of this evolution is **an increasing tendency to develop skills rather than teach factual knowledge**.

The skill is defined as a capacity to behave in a given situation: **the skill is based on knowledge but is not only constituted of it**. The skill mobilizes knowledge, know-how and experiences but also values and behaviours. In the same time, we evolved from the notion of skill in the strict sense to the notion of **"key skills"** identified as **"all the necessary skills to act in an "efficient, appropriate and responsible way in the human, economical and political field"**.

For a long time, a general consensus has acknowledged that the perfect command of reading, writing and arithmetic is a necessary condition but it is not enough to succeed. The skills in literature and mathematics exceed the simple command of the mother tongue and mathematics as they are considered in curriculum: it is now referred to the ability to understand, use and think on a text such as it is referred to the ability to use in a functional way mathematical knowledge.

At the same time **transversal skills** are defined: these skills, which are not linked to any subjects, can be mobilized in a broad range of fields and situations regardless of subjects. The fleeting side of skill is replaced by the notion of **"transferability and flexibility"** of know-how and **"generic skills"** such as communication, creativity, team work or ability to learn.

Similarly **social skills**, such as the ability to develop and professional and private relations, are defined: these skills have now become **"a way to employ"** people in the companies. Last, the importance given to **information and communication technologies** and to foreign languages is now acknowledged as real **"economical resources"** in a multicultural and multilingual Europe.

In modern societies, training all your life appears as the best suitable solution to meet the need of continuing training. But to reach expected results, this approach implies that for everybody the development of the ability to understand and **control one's own thinking and learning process**: this new skill specifies **"behaviour"**. At school the behaviours are often associated to personal skills: curiosity, motivation, enthusiasm, self respect, initiative, perseverance...; in everyday life behaviour is at the heart of learning of social and professional life and a successful integration.

These changes led to an increasing demand of certification: the level reached by the youngster becomes an indicator of his/her personal success and beyond that success, School success which aim today has become to provide knowledge, know-how and necessary **key skills**.

Par excellence, school is the place where these skills are acquired but today school can not do it alone: **"informal"** training through family, friends, media or associations and political groups is as important as **"formal"** training when it comes to develop cognitive, social, personal skills. These last personal learning depend on everybody's abilities and individual motivations: to develop for everybody these abilities and individual motivation implies a strong interaction between school and outside environments if we do not want to reinforce social handicaps linked to the environment inside which people initially live in.

In the same way, traditional assessments are particularly criticized when the modalities and tests are focused on the memorization of information rather than the application of knowledge through a critical and creative

thinking: in that case, factual knowledge are often memorized with the only aim of passing the exam and not of using this knowledge later.

This sort of assessment has long influenced the contents and methods of learning and teaching, which was kept alive by some “**complicity**” between the teacher and the pupil. It is common to observe a great number of pupils who develop these “**consumerist**” attitudes towards exams for which “**cramming**” remains the rule in many exams. One should help to develop new behaviours: the exam must become more and more a **situation** from which the person in charge with the assessment **can measure if the person is likely to develop a skill or not**. These practices must be spread to all the skills and in particular to the assessment of **potential skills** for which the acquisition is not directly measured but the ability (or not) to develop this sort of skill.

The assessment of professional skills follows the same approach: **the ability to carry out an activity does not come down to check the professional gesture but to measure the ability to “anticipate” in a specific professional context, according to the fixed degree of requirements, that can vary according to the level of the diploma.**

The assessment of the skills pose the problem of certification of abilities and individual talents developed in social and professional life. This assessment goes beyond the mere use and accepted acknowledgement of qualifications on paper: today it is the way opened by the validation of the acquired experience.

Skills, their assessment and their validation are now at the heart of the evolution of knowledge and know-how for each individual: they are the heart of the education act and have become the central element of the training all life long and during all economical and human progress in modern countries.

## THE METHODOLOGY OF THE CONSTRUCTION OF EUROPEAN DIPLOMA

The methodology suggested within the Sustainable Professionalization programme to build European diplomas with common frame of reference has been perfected from the development of two professional diplomas in the service sector. But in the assessment of the Sustainable Professionalization programme, the general direction Education and Culture of the European Commission approved the process implemented in the programme Sustainable Professionalization but found that the method that was developed for the carrying out of the diplomas was cumbersome and demanding as far as time and resources were concerned, which led the commission to make recommendations to adapt this methodology: « ... ***It is necessary to simplify the methodology developed by the sustainable professionalization....*** »

The working party established as part of the **Leonardo EuroPlastic** project aims at leading and applying these objectives in the construction of the diploma of the advanced technician in plastics industries.

The diploma of the advanced technician in plastics industries is interesting in many respects:

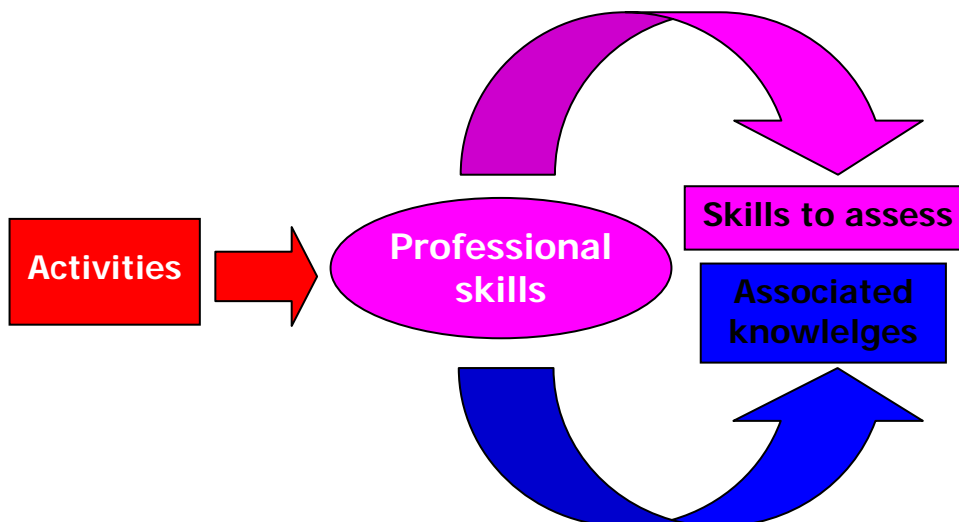
- Created to meet the needs of the plastic industries, it is part of the industrial sector and thus constitutes the first European diploma with a common frame of reference ;
- By spotting both the knowledge peculiar to the « plastic material » and the specificities linked to the practice of the job, it enables to extend this type of curriculum to other production industries.

The natural guide of the suggested methodology is « pragmatism and legibility »:

- « Pragmatism and legibility » for the professionals who expect and even demand to graduates to implement some skills.
- « Pragmatism and legibility » for the trainers who must transmit knowledge and know how that can be directly mobilized and used in the company.

The method applied for the creation of the diploma EuroPlastic is based upon the association of three concepts FRAME OF REFERENCE OF THE ACTIVITIES, FRAME OF REFERENCE OF THE SKILLS and FRAME OF REFERENCE OF THE ASSESSMENT. These concepts are close to those implemented in the creation of

professional diplomas in many European countries, but the methodology suggested is different as far as the part and the role given to professional skills are concerned.

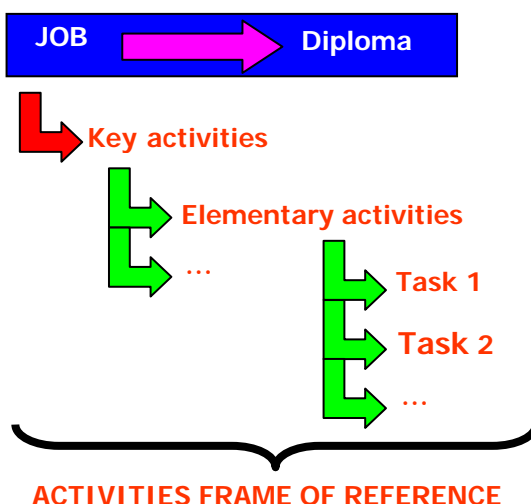


The professional skills play the part of a thread in the construction of the diploma from the description of the job to the assessment; they lead the nature and the range of knowledge and the way this knowledge is taught and assessed.

### THE ACTIVITIES FRAME OF REFERENCE

The frame of reference of professional activities describes the activities and tasks needed by the graduate during the first years of his/her professional life. Mainly established by professional working in companies that are different in their size, organisation and the type of production or service, the frame of reference of professional activities specifies the professional purpose of the diploma: it constitutes the base from which the frame of reference of skills and assessment is built.

The activities and the tasks done by the graduate while at work are specified as KEY ACTIVITIES, BASIC ACTIVITIES and TASKS; they are specified by action verbs.



### THE SKILLS FRAME OF REFERENCE

A skill is defined as a concrete measurable or observable and transferable activity defined according to the requirements that are expected by the companies and the labour market. The implementation of

these professional skills is based on different resources: they can be human means, material means, processes, information and of course knowledge.

To take up all the activities of the frame of reference of professional activities and **decline them under the form of skills without repeating the content**, the skills are established according to **the chronological or logical order of operations that are either part of production**, or the **functioning of the department or according to the large functions without taking into account the implementation of the assessment**. This work is generally carried out on the basis of the frame of reference of professional activities by the training officers who work closely with the professionals.

The skills description is composed of three elements: basic skill (or detailed skill), data,(or how they are achieved) and indicators of performances (or assessment criteria).

- **The basic skills (or detailed skills)**

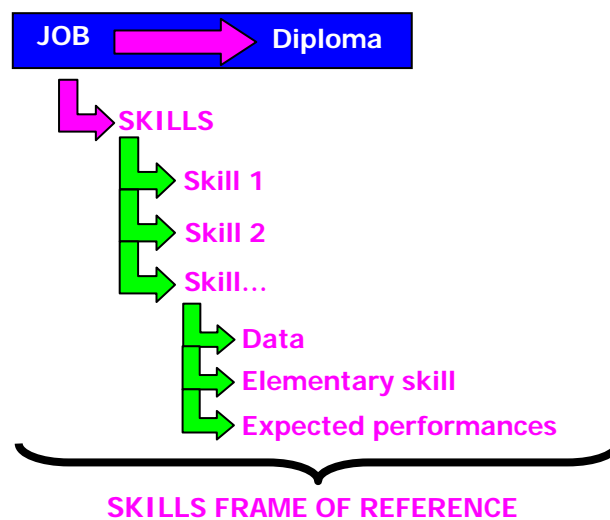
It is the detailed description of professional skills in terms of action: this is what must be done concretely.

- **How it is achieved (or resources)**

They specify the available resources that are necessary to achieve the activities implemented to reach the skill (data, material information, human means...) and they specify the industrial environment (or the nearest of the industrial context) in which the assessment takes place (real or simulated situation, place of the assessment ...)

- **The indicators of performances (or assessment criteria – professional requirements)**

They describe the expected performance that is to say what is required by the candidate. The level of performance must be in keeping with the professional activity.



The high number of basic skills shows both **the diversity of the job and the tasks** that are entrusted to the future graduate, and **the level of professional requirements**. The number of basic skills is also related to **the level of training** and increases with the rank of the diploma.

A skill is specific to an activity field, but it remains the same for all the actions within this field. This concept of 'transferability' is inherent in the representation of skills:

- as regards knowledge, it enables to avoid the catalogue of knowledge and some sort of redundancy in the educational methods that were developed during the professional learning.
- As regards educational methods, for the student undergoing training to go over the specificity of each action and for him/her to be able to do other actions in similar but different contexts.
- As regards assessment, it intervenes in such a way as the assessment situations that are implemented do not only come within one professional context, but enables to assess the professional adaptation of the future graduate.

## THE ASSESSMENT FRAME OF REFERENCE

The assessment frame of reference is composed of three main parts:

- The group of basic skills that lead to the heart of professional skills to assess
- The list of associated knowledge
- The link between the knowledge and the professional skills to assess

### ➤ **First step: the group of basic skills**

The different activities described in the professional activities frame of reference generally lead to a high number of detailed professional skills. In order to make the job of the person in charge with the assessment (and the training officer) easy all the detailed skills are repeated and grouped in the objective of certification:

- 1) *The detailed skills are grouped around the fundamental skill or abilities*
- 2) *The detailed skills that are repeated twice in the table of basic skills have been erased and the similar skills are grouped*

The remaining skills compose the heart of the assessment: they are organized around large fundamental skills named « capacities ». This work carried out with professionals is made easy by organizing basic skills with the help of a spreadsheet to sort them and classify them according to criteria (alphabetical order, activity ...).

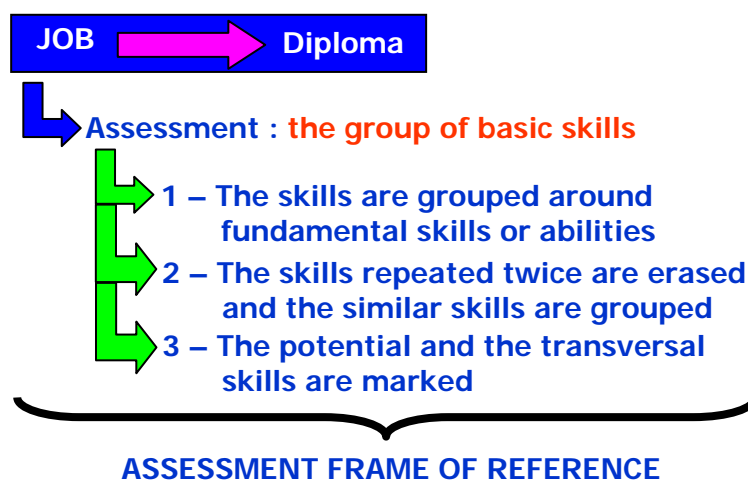
All these first skills constitute the heart of the job: for the person in charge of the assessment they determine the skills on which lies the assessment of the future graduate; for the future employer they represent the expected **PROFESSIONAL REQUIREMENTS** that the graduate must possess. **THE EXPECTED PROFESSIONAL REQUIREMENTS** become the **REFERENCES OF ASSESSMENT**. These skills are necessarily less numerous than the basic initial skills.

- 3) *The potential and the transversal skills are marked*

This group lead to two series of skills:

- Those that are **directly linked to the job** and define the **AXIS OF THE JOB**
- Those more **transversal and non specific to the job**, but necessary to the exercise of the job : it is the case for example of skills that are linked to communication or management (when they are not part of the axis of the job)

Sometimes, the assessment of some skills is not possible in the global context of the training whatever the forms and the place where this assessment takes place. These **POTENTIAL SKILLS** mainly concern the activities exercised by the graduate when he/she is definitely stabilized in the function he/she has in the company after several months of experience.



### ➤ **Second step : associated knowledge**

Whatever their nature, most technical realizations need:

- The perfect command of general culture

- The perfect command of scientific and technological tools
- The perfect command of professional knowledge and know-how

And the perfect command of human skills

The three poles “**general culture, scientific and technological tools and professional knowledge**” are at the heart of every technological and professional training, the human factor being the essential transversal element in all the fields.

Starting from the professional profile defined in the professional activities frame of reference and the skills frame of reference **a list of the needed knowledge for the exercise of the job according to the expected skills and requirements is established.**

Although it is not a training programme since diplomas can be obtained by different ways (initial training, apprenticeship, continuous education, validation of acquired experience ) **the associated knowledge described in the skill frame of reference constitute the base from which the training officers will define their teaching strategies. They also serve to the people in charge of the assessment to implement their assessment.**

The knowledge refer to scientific disciplines, technical concepts and practical knowledge for which one must set the limit of requirements: these limits linked to requirements of professionals and at the level of the diploma can be either set by a simple description or the use of taxonomy. This information is decisive as it set the level of training. Four main levels of taxonomy can be brought out:

- **Stage 1 : information level.**

At this stage, the candidate receives minimal information about the studied concept (he globally knows the topic). He can for example identify, recognize, or name an element, a component within a system, name a working or organization method or roughly name the role and the function of the comprehended concept .

- **Stage 2: expression level.**

At this stage it is necessary to master a knowledge related to oral expression (speech, oral answers, and explanations) and to written expression (texts, sketches, graphic and symbolic representations). The candidate must be able to justify the subject by explaining for example its functioning, its structure or its methodology.

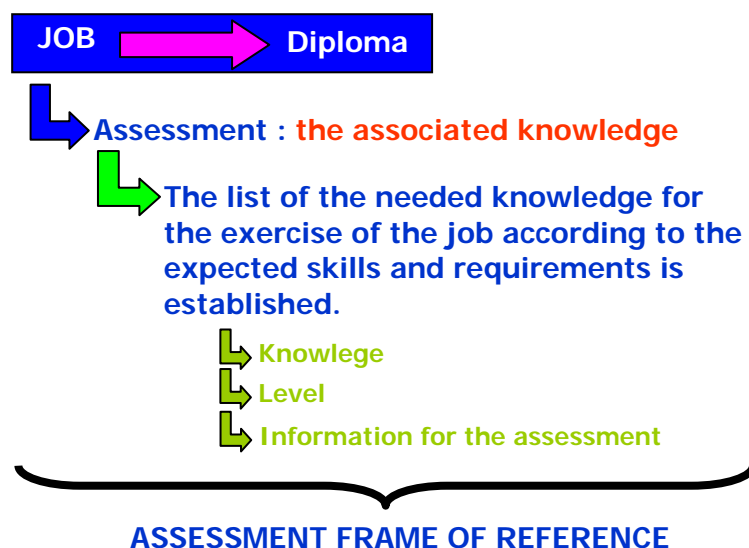
- **Stage 3: level of tool control.**

At this stage, it is necessary to control the implementation of techniques, tools, rules and principles so as to reach a result. It is the level where cognitive know-how is acquired (method, strategy...). This level enables to simulate, to implement an equipment, to carry out representation, to make the right choice.

- **Stage 4: level of methodological control.**

At this stage, the candidate is able to set and then solve problems inside an industrial context. This level corresponds to the perfect command of the implementation of a method in the view of reaching a goal. This level includes broadened skills, (partial, limited or total autonomy) and the respect of industrial-type working rules (respect of standards, procedures which guarantee the quality of products and services).

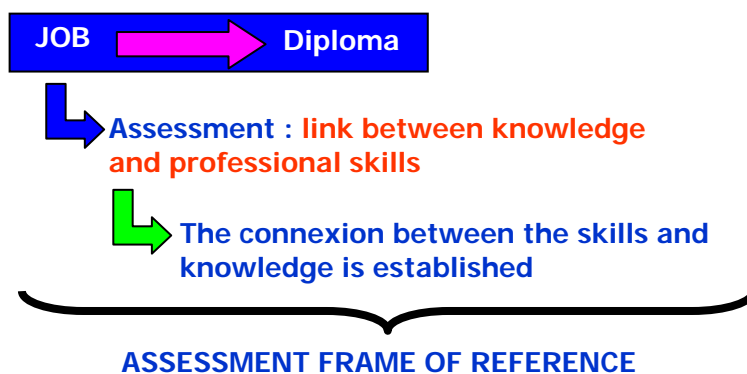
It is clear that each level contains the former one. The highest level implies professional practice in the company and needs a close collaboration between the training centre and the company. The company is ‘co-responsible of the training’ and becomes the place of training in the same capacity as the centre. This practice necessarily leads to particular dispositions in the company and implies a “tutor” even partially or a “mentor”.



### ➤ Third step : the link between knowledge and professional skills

The associated knowledge specifies technological and professional basic knowledge that the future graduate must possess to be efficient in the exercise of his/her activities in the companies and fulfil the skills that are expected by their future employers. **This knowledge is meaningful only if it is closely associated to the skills it is likely to lead:** that is why it is important to link each detailed skill to assess to large categories of associated knowledge and axis that specify the diploma.

This link between skills and knowledge serves as an "educational guide" for the training officer: he/she is the one who gives the **professional dimension** to knowledge.



## CERTIFICATION

The certification can be defined as the operation which authenticates someone's skills in relation to the professional profile defined by the professional activities and skills frame of reference.

The certification concerns both people who benefit from it and employers who are likely to recruit them. It concerns the training system which builds knowledge and the whole professional body for which a good system of certification is a guarantee of the quality of the training and the adaptation of the work force to the needs of the economy. Last, it is also a tool to recognize the acquired knowledge.

One of the aims of a « European diploma » is the setting of a certification common to several European countries. All the people holding the diploma are judged on the same basis and are able to practice in all the countries who are signatories to the agreement, the job aimed by the diploma. The ability to practice the job is checked skills after skills according to the indications given by the skills and assessment frame of reference.

Considering the diversity of the ways to obtain titles and diplomas between the countries and within each country, it is better that the objectives of certification of a European diploma are common to all the countries which will use these diplomas whatever the way to obtain this diploma: initial training, apprenticeship, continuing education, or acquired knowledge. However if these objectives are common to all the countries, the way to reach them and the practical details of certification come within the competence of the **principle of subsidiary**.

**The assessment frame of reference constitutes, with the professional activities and skills frame of reference, the common basis from which the assessment is built.** Subsequently the statutory elements necessary to the setting of diploma by each country and for each training systems – teaching hours, placements, training periods in the company, certification, exam rules, diploma award -are put together; this last part constitutes **the subsidiary part of the European diploma**.

To make the development of this part, that is specific to every country, easier it is better to follow a chronological order to develop the modalities of the certification. This progress starts from the list of the skills to assess.

It is thus successively established:

- The inventory of professional skills to assess in the training centre and in the company;
- The number and the definition of the different tests used in the assessment (selective assessment, continuous assessment, other shapes of assessment: **this distribution uses in generally the fundamental skills or abilities**;
- The distribution of these skills according to the different tests and situations of assessment.

**A skill is generally assessed only once.** This does not mean that other skills are not available during the achievement of the assessed activities, but they are not the object of an assessment, so as to assess a definite and identified number of skills for each unit of certification.

The rules of the tests and the situations of assessment are specified from these tables according to the mode of training or the statute of the person who is trained: initial training, continuing training, and training during apprenticeship. In a second part, the teaching hours and the organization of the training period are specified. Then a last part specifies what is related to the modalities of the diploma award and of the recognition between national diplomas. Generally there is also an educational guide for all the training officers.

## RECOMMENDATIONS

### ➤ The initialization of the project

The development of a professional diploma usually starts from a **decision made by the professionals**, but the development of the diploma is **jointly carried out by professionals, training officers and teachers**. In this respect the choice of the professionals must represent the companies that are concerned by the expected job whatever their form or size in order to cover all the situations that can be met in a company during the job. The availability of the professionals is often less than the training officers: it is important that the distribution of tasks and organization of the meetings take this constraint into account.

Of course the definition of the activities and tasks lies with the professionals. If they are not available, the development of the skills is often carried out by training officers and people in charge of the assessment. When skills are being written, a close link between professionals, training officers and people in charge with the assessment is thus important for everybody to understand the professional activities frame of reference. This understanding by the training officers is the only guarantee that teachers meet "without problems" the requirements that are expected and develop suitable educational methods that are linked to professional aims that were defined in common.

In the same way the training officers should not be the only ones to "possess" the assessment processes. The information and the exchange with professionals is a guarantee against drifts and make sure that the assessment is based on professional skills and not on academic knowledge: what must be assessed is the availability, the implementation and the "transferability" of knowledge through professional situations and not the assessment of technical or technological isolated knowledge.

### ➤ The development of the project

Once the professionals have carried out the initiative and have asked for the qualification, a step of consulting is necessary to launch the project: this step aims at searching for information and leading to a general thinking on the job and collecting the first comments from professionals, teachers and training officers. This preliminary stage ends up by a seminar with all the members of the project during which the first thoughts on the diploma to build and on the organization of the project are tackled. (organization of the work, financing, schedule ...)

The project manager has a limited national team of professionals and training officers round him/ her; their vocation is to lead a discussion and write down documents: these documents aim at being discussed and modified in order to take into account the remarks made by the group and to serve as suggestions during the validation meetings. These **working meetings**, one day, are carried out at a national level with the professionals' financial support.

The **meetings of validation** are longer – two days – and reunite all the partners of the project: their aim is to validate the documents drawn up by the group. In order to make the discussions easy the preliminary documents are the subject of regular mailing to inform and feed the thinking.

The manager of the project must mobilize the professionals and manage the first meetings to develop the frame of reference concerning professional activities. Two working meetings followed by a validation meeting are necessary to establish this first document. Four working meetings followed by two meetings of validation are necessary to finish the skills frame of reference. The development of the assessment frame of reference requires an easier organization: a working meeting followed by a validation meeting.

All the needs come down to **four seminars at a European level lasting two days**, prepared by **eight to ten national meetings at the maximum** : that is how the development of the common part of the EuroPlastic diploma has been led.

### ➤ The writing of the diploma

The writing of activities, tasks and skills should obey some basic rules if we want it to be readable by everybody (trainees, employers, teachers and people in charge with the assessment).

- Be clear in the words and concepts that are used
- Use words to name an activity or action verbs to describe tasks and skills
- To help with the writing of skills and make a difference from activities, use the expression "be competent in" or "be able to" at the beginning of the writing for each skill
- Use right words and avoid generic ones

The different activities of the professional activities frame of reference should be detailed enough in order to easily reformulate them into skills.

### ➤ The use of the Internet

The direction Education and Culture of the European Commission insisted a lot on the necessity to call for less important resources to write down the curricula. The simplification and the flexibility of the suggested methodology enable a "relative liberty" in the organization of the meetings with the different partners and in the writing of the diplomas that, while remaining "supervised", permits a flexibility to adapt it to the various jobs and industrial sectors.

The frequency of the meetings and the working methods of the discussion group on the curriculum can be easily lightened by the use of the Internet. These new processes are the subject of a separate note. They mainly come down to the opening of a web site and by the use of web conference.

- The **web site**: it is **mainly used as a communication tool**. Accessible to everybody, it describes the main lines of the project (objectives, presentation of the partners, working programme...) and puts at everybody's disposal by direct loading under the format Word and Acrobat the working documents as they are being developed (as the manager of the project or the working group decide to do it). The diffusion of these documents aim at making all those who are interested in the project to react –training officers, professionals, people in charge of the assessment...

In order to organize the response of information on these documents it is set, either on the site or next to it, a blog: this blog is not anonymous and is organized in the different languages spoken by the partners of the project. Its menu is organized according to partners and the type of expected reactions; it takes up all the available documents to spread their diffusion and make specialists or non-specialists to make comments and give their opinions on the reactions. The administration of the blog is provided by the project manager and the various partners.

- The **web conference**: the use of the Internet with high speed connection has changed the use of teleconference. Today there exist lighter, cheaper and more available tools. The suggested study aims at developing a technical and didactical methodology to use the web conference in the development of common frame of reference of European diplomas and educational documents and to inform social partners.

This study concerns the development and the uses the web conference in the organisation of meetings and in the driving of projects: it is a technical and didactical study that it brings methodical and computer science answers ([www.europlastic.org](http://www.europlastic.org)).

## SUMMARY

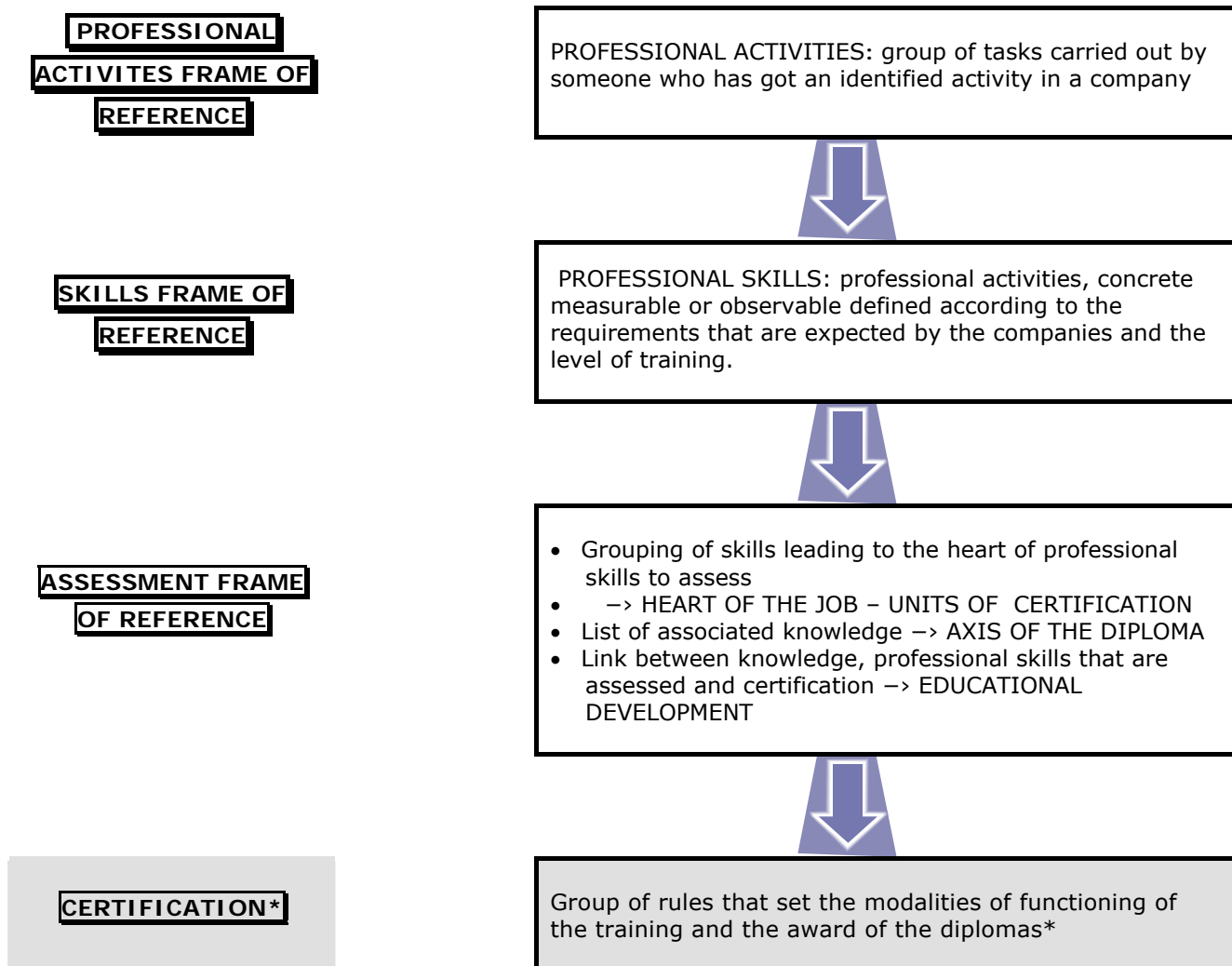
A methodology to build European diplomas with a common frame of reference was set within the frame of a programme Sustainable Professionalization from the development of two professional diplomas in the service sector. The general direction Education and Culture of the European Commission approved the approach implemented in the programme Sustainable Professionalization but thought that the method used for the development of the diplomas was clumsy and demanding in time and resources: a new methodology applied to the diploma of the advanced technician in plastic industries was developed.

This method is based on the association of three concepts PROFESSIONAL ACTIVITIES FRAME OF REFERENCE, SKILLS FRAME OF REFERENCE and ASSESSMENT FRAME OF REFERENCE .

These concepts are close to those implemented in the development of professional diplomas in many European countries but the methodology suggested is different as far as the place and the role given to professional skills in the diploma are concerned.

The professional skills are not established according to academic knowledge but according to knowledge, know-how and behaviours that are necessary to carry out identified professional activities. They play the part of a thread the construction of the diploma concerning the assessment, nature and the range of knowledge and the way this knowledge is taught: established from the activities and tasks described in the professional frame of reference, the detailed skills are then grouped in a limited number of skills to assess that serve as a base to the implementation of certification.

This methodology is condensed in the chart below:



(\*the subsidiary part of the diploma is indicated in grey )

A technical and methodological information to use the web conference to inform the social partners and to build the European diploma frame of reference and educational documents is presented at the same time ([www.europlastic.org](http://www.europlastic.org)).