The iProfessional PROJECT

LIFE LONG LEARNING PROGRAMME – ERASMUS

[DURATION: October 2013 – September 2015]

D5.1 Methodology for development of training curriculum

WP Number	WP5
WP Title	Model training curriculum and sample modules elaboration
Status	Final
Dissemination	P
Publication Date	30 September 2014
Lead Author	Prof. Valentin Kisimov
Contributing Author	All iPro partners

For further information related to the iPro Project please visit:

The Project website (www.ipro-project.eu)

This project has been funded with support from the European Commission. This publication reflects the views only of the author and the Commission cannot be held responsible for any use which may be made of the information contained therein.

iPro 540097-LLP-1-2013-1-BG-ERASMUS-EQR

Table of contents

Acronyms & Vocabulary

ACRONYM/TERM	EXPLANATION
ICT	Information Communication Technology
iPro	iProfessional Project
CSR	Corporate Social Responsibility
VET	Vocational Education Training
DG	Directorate General
HEI	Higher Education Institution
SME's	Small Medium Business
WP	Work Package
M1, M2, etc	Month 1, Month 2
IPS	Institute for Postgratude Studies at UNWE
ITPIO	Institute for Training of Personnel in International Organisations
ATiT	Audio-visual Technologies Informatics and Telecommunications
TC	Telecentar
IADT	Institute of Art, Design & Technology
AW	ActiveWatch
ULO	University of Lodz

TUCEP	**Tiber Umbria Comett Education Programme**
VGTU	**Vilnius Gediminas Technical University**

1. Executive summary

The Methodology for development of training curriculum has been designed to serve the project for the creation of Curriculum prototype – Deliverable 5.2 of the project. The same Methodology will be used also for identification of the Sample modules by each partner, which is Delivery 5.3 of the project.

The Methodology is developed as theoretical approach for creation of curriculum, applying a procedure consisting of 3 Steps and having guidelines how to use it for final Curriculum with detail specification of sample modules. The Methodology is developed also as practical guide for creation of a Curriculum, taking into consideration the purpose of the current project and the deliverables from the previous WPs – WP3 and WP4.

As a base for development of the Methodology have been used the world achievements for development of Curriculum, have been applied the leaders-models for Curriculum development, which have need tailored for the purpose and needs of the project. Based on the selected and customised models, a Procedure has been designed with practical step for implementation and guidelines for usage of each step.

For designing of the Methodology, General governance has been created, defining the link and integration with WP3 and WP4, as well as the link with next delivery in WP5 - SAMPLE MODULES DEVELOPMENT AND THEIR EVALIATION.

The Methodology has been developed with a Concept, covering the selected 4 models for curriculum development – Tyler's, Taba's, Olive's and Hunkins' models, integrated with 16 Principles. These Principles have been based on our research and designed approach for curriculum development, as well as on the results from the WP3 and WP4 of the current project.

2. Terms related to the Methodology

The following terms have been generally accepted during the Kick-off meeting, related to the developed Methodology:

a) *Competence* - a Set of knowledge, skills and attitudes

b) *Knowledge* - to be familiar with principles, methods, facts and truths. Knowledge is a result from university education

c) *Skill* - the ability to carry out a task with pre-determined results within a given amount of time and energy. Skill is a result from a specialized training, technical colleague education and certification programs;

d) *Attitude* - a positive or negative evaluation of people, objects, event, activities, ideas. In education (HEIs), the attitude can be presented as best practice;

e) *Curriculum* (with terms for plural Curricula / Curriculums) – a related set of courses in a special field of study;

f) *Course* (Discipline) in a curriculum consists of modules (in some areas also called “topics”);

g) *Curriculum platform* is a synonym of “Curriculum model”;

h) *Curriculum model* – a structure (selected subset of courses) of a curriculum, focused on educational purposes, experience and specialization. There are two main types of these models namely, the Tyler model and the Taba model. The Tyler model is influenced by the HEIs management, while that Taba model advocates for a major input from teachers;

i) *Curriculum prototype* – a structure of a curriculum, on which base different curriculum variations can be established.

3. Purpose of the Methodology

The purpose of the current methodology is to describe how to analyse the learning outcomes of present curricula in terms of business capacity, and to compare these to the competences and skills that are explicitly required or desired.

The methodology is developed in a procedural way with recommendations and guidelines that have to be shared and reviewed with other partners.

The created methodology will serve the HEI's professors for the selection and creation of their educational materials (curricula), according to the requirements of the industry, taking into account the requirements of other stakeholders (such as authorities and the research communities).

4. General governance of the Methodology

Curriculum can be defined in many ways: as the teaching and learning of pedagogy and of subject-matter content (Adler, 1991); as a plan, in terms of experiences or as a field of study that relates to subject matter and grade levels (Lunenburg & Ornstein, 2000); as the educative experiences learners have in an educational planned program based on a framework of theory and research, past and present professional practice, and the changing needs of society (Parkay, Anctil & Hass, 2006); as a program; as courses or a disciplines (a subject of study) based on an organized set of principles, a body of knowledge and skills, and theoreticians and practitioners (Oliva, 2009).

The Methodology is designed with the use of General governance presented in figure 1.

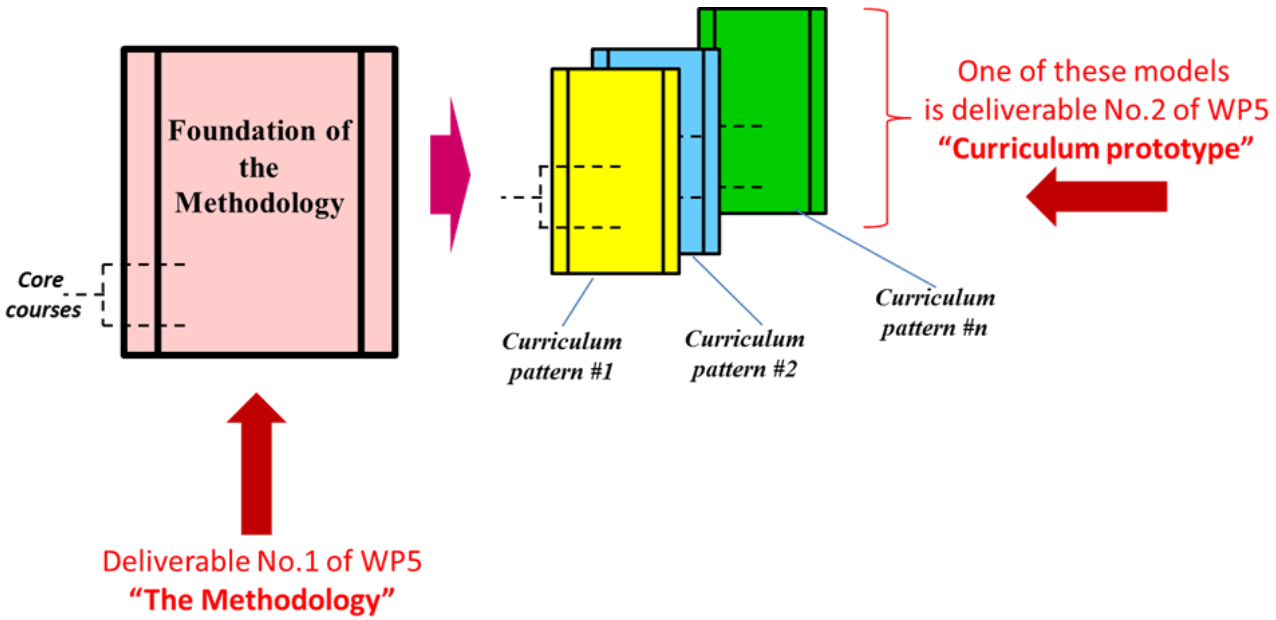

Fig.1

The Methodology will create its Foundation, which will be the basis of the entire methodological approach. The Foundation consists of core courses and a few sets of additional courses, which will offer a few directions of focusing the level of presenting knowledge and skills. Different Principles and Models for creation of curricula will be applied on the Foundation, which will lead to generation of different Curriculum patterns. Each one of those Curriculum patterns is also called Curriculum prototype. The reason of term "Curriculum patterns" is to be a base for creation of small variation of possible number of curricula, each one with small difference not in the number and type courses, but the content of some of the courses.

Example No.1 – The Foundation of the Methodology consists of 25 courses, from which 10 a Core courses. From that Foundation, applying all the Principles and models of the Methodology, 3 different Curriculum Patterns or Curriculum prototypes have been created – Curriculum prototype-A, having the 10 Core courses, but from the rest 25 courses are selected only 8, related to practical skills needed to be transferred to technicians; Curriculum prototype-B, having the same 10 Core courses, but from the rest 25 courses are selected only 10, oriented to Post graduate education of

specialists with Computer Science university degrees; Curriculum prototype-C, having the same 10 Core courses, but from the rest 25 courses are selected only 17, dedicated to education of high-professional Digital media designers for people with electrical engineering degree.

Example No.2 - A Curriculum prototype can have 20 courses, where course No7 is "Digital photography", from which prototype, Curriculum-A has the same 20 courses, course No7 is the same "Digital photography", but inside of that course the topic "Animated photography" is just informative with one module – "Principles of the Animated photography", while in Curriculum-B having the same 20 courses, with the same course No7 - "Digital photography", but inside of that course there are 3 modules – "2D animation", "3D animation" and "Software tools for animation of photography".

In WP5 the Methodology is Deliverable No1, while the Curriculum prototype is Deliverable No.2.

5. Our understanding of "Good Curriculum"

A good Curriculum is that one, which can have permanent and dynamic evolution. A static Curriculum is never "good Curriculum", because the business in the world is changing so quickly, and the time when a Curriculum is established and approved, it is already old and not corresponding to the current life needs. This means, the Curriculum should have permanent monitoring and mechanisms for evolution. The good Curriculum reflects the individual, institutional, business and international society needs. To be a curriculum a good one, efforts from different groups have to be included, combining minds and energies from many sources.

The creation of good curriculum needs of long efforts, combining people from different life, culture, business and education areas, applying different planning, design and management styles and embedding multi-dimensional procedures and principles.

The good types of curriculums require different and new types of classrooms, new education approaches, new class activities, and sophisticated educational tools.

The good Curriculum must be ready to incorporate changes whenever necessary. It has to be open to implement continuous changes.

The following criteria are important for the development of a good Curriculum:

- To be with well-defined Objectives

Each Curriculum has to have objectives in the form of goals which successful learners will achieve within the scope of the course itself. Objectives are often worded in Curriculum documentation and in each course of the Curriculum in a way that explains to learners what they should try to achieve as they learn. Some educational organisations design objectives carefully match the criteria borrowed from the business world. Most courses objectives are set by teachers/professors and apply to all learners who enrol on the course. Sometimes individual learners set their own objectives in collaboration with teachers/professors. The course objectives always relate to the same course aims but according to the individual's interpretation of those aims and how they relate to personal goals.

- To be with identified Requirements and Prerequisites

The Curriculum Requirements and Prerequisites define what type of school the students/trainees have to finish, which level of diploma/degree to have, what kind of knowledge to have and what kind of skills to have. Prerequisites are also specific knowledge of technology products and tools, as well as level of knowledge and certificates for their understanding and operation.

- To be balanced

The balanced Curriculum is that through all courses the required knowledge and skills will be provided. The balanced Curriculum does not miss courses that can provide required knowledge and skills, which means there is no gap in the provided knowledge and skills. It is important to

teach all areas of the curriculum, without bigger focus on one area and less focus on another area.

- To be understandable

The Curriculum has to be with well-defined disciplines (courses), without giving the possibilities to teachers / professors to create their own understanding what the essence is of a particular course.

- To be with Vertically integrated content

The Curriculum has to be with logical links and sequence between the courses. The logical sequence means to have a sequence between the knowledge and skills presented by a course and those presented in the next course in the time sequence of education / training.

- To be with Horizontally integrated content

The Curriculum has to have in each course a sequence of modules, which present the knowledge and skills of the course in a logical way. This is valid only for courses, which consist of more than one part (module).

- To be with Spiral based increasing of knowledge / skills

The time sequence between the courses in a Curriculum in their process of teaching should provide increasing and augmenting delivering of knowledge and skill.

- To be with duration for achievement of the required knowledge and skills (lectures / labs)

Each course in a Curriculum should be planned to have theoretical and practical parts providing of knowledge and skills via the relevant amount of hours for lectures and labs.

6. Concept of the Methodology

The current Methodology for development of training curriculum is created with the philosophy presented in figure 2.

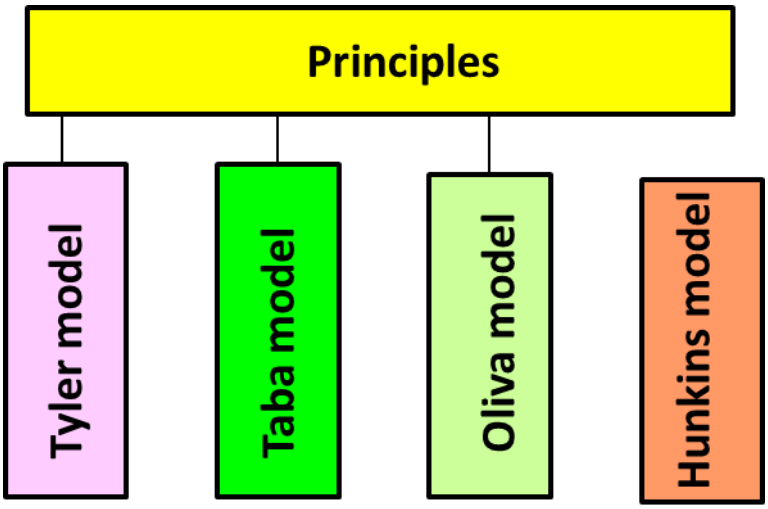

Fig.2

The Methodology is based on 4 theoretical models for creation of a Curriculum:

- Tyler model;
- Taba model;
- Oliva model;
- Hunkins model.

integrated under common Principles.

There are many models for development of Curriculum. From them we have selected the specified above 4 models. The purpose of the proposed models for creation of a Curriculum is to offer different aspects for generation of courses and their internal modules (one or a few). Every one of the mentioned models for creation of a Curriculum has its own driving forces.

6.1. Principles for development of training curriculum

The purpose to have a set of Principles is to integrate the process of implementation of those 4 specified above models for creation of a Curriculum. For this reason these Principles are called

"Principles for development of training curriculum" and they are:

a) Coherence of a curriculum as a sequence of parts with different values

b) Coherence of a course as a sequence of slices (modules) with different values

c) Multiple parallel optional courses in a part of a curriculum

d) Multiple parallel optional modules in a slice of a course

e) Curriculum should work as a system

f) Elimination of overlapping

g) Providing balance and coordination between course slices and curriculum parts

h) Horizontal integration between curriculum parts and Vertical integration between course slices

i) Incorporation of identified Competence Gaps from the Survey (from WP3)

j) Incorporation of identified Industry trends from the Survey (from WP3)

k) Clear identification of competences required by developers of digital multimedia content (from WP4)

l) Focus on a core set of knowledge, skills and attitudes for professionals within the new media sector (from WP4)

m) Incorporation of theoretical and practical competencies required to fulfil vocational and generic tasks and the European framework for key competences (from WP4)

n) Integration of key groups and subgroups of tasks in development of digital media (from WP4)

o) Using the list of knowledge and skills required to fulfil the tasks (from WP4)

p) Incorporation of levels of responsibilities and autonomy for each task (from WP4)

The presented principles can be used as procedural steps during the curriculum development. It is important to mention that the Principles incorporate the results from the previous WP3 and WP4.

6.2. Tyler model

Tyler developed an educational model for the purpose to define goals and objectives through which to measure student achievement in a course. Ralph Tyler identified that the vast majority of educational curriculum was defined by a sense of inflexibility and restriction, rather than goal-oriented and directed learning activities. By creating the Tyler Model, he was able to succinctly and accurately outline a series of basic steps for developing curriculum that was laden with measurable and attainable educational objectives. Through the development of the Tyler Model of curriculum evaluation, there was created a "process of determining the educational effectiveness of learning experiences".

The Tyler model was developed in 1949 by Ralph Tyler when he published the book "*Basic Principles of Curriculum and Instruction"*. In this book, he identified four principles of curriculum development:

i. Ascertain school/university's purposes/objectives:

School/University's purposes are derived from gathering information about the needs of the society and the learners, keeping in mind the philosophy of the school.

Step one is determining the objectives of the school or class. In other words, what do the students need to do in order to be successful? Each subject has natural objectives that are indicators of mastery. All objectives need to be consistent with the philosophy of the school and this is often neglected in curriculum development. For example, a school that is developing an English curriculum may create an objective that students will write essays. This would be one of many objectives within the curriculum.

ii. Identify educational experiences related to these objectives:

The creation of a Curriculum should consider human development and knowledge of learning when identifying educational experiences to be included in a curriculum. Experiences should involve all three domains of learning- cognitive, behaviour, and psychomotor.

Step two is developing learning experiences that help the students to achieve step one. For example, if students need to meet the objective of writing an essay. The learning experience might be a demonstration by the teacher of writing an essay. The students then might practice writing essays. The experience (essay demonstration and writing) is consistent with the objective (Student will write an essay).

iii. Organize learning experiences:

Educational experiences should be sequenced systematically (from simple to complex, and from general to specific) in order to maximize results.

Step three is organizing the experiences. Should the teacher demonstrate first or should the students learn by writing immediately? Either way could work and preference is determined by the philosophy of the teacher/professor and the needs of the trainees/students. The point is that the teacher/professor needs to determine a logical order of experiences for the students.

iv. Evaluate the purposes:

Evaluation is important to determine effectiveness.

Step four is evaluation of the objectives. Now the teacher/professor assesses the students' ability to write an essay. There are many ways to do this. For example, the teacher could have the students to write an essay without assistance. If they can do this, it is evidence that the students have achieved the objective of the lesson.

Tyler model is sometimes referred to as a goals-oriented or objectives-based model. This model is also very linear and sequential. The Tyler model, is the quintessential prototype of curriculum

development in the scientific approach.

Tyler model is accepted as top-down model.

From this, four key point of the model can be tuned for the purpose of our project:

- To define Objectives – the purposes of education through the curriculum – what is to be the outcome of the students' education - *education in digital media*,
- To use Instructional experience related to the purposes,
- To have Organization of the experience for the purpose of having maximum curriculum effect (from education),
- To provide Evaluation and assessment of the education purposes.

We define that our approach for using Tyler model in our Methodology is to create curriculum in the following:

  - Mapping of current Institutional curriculum with the research, including from WP3;
  - Applying methods of teaching and learning: Cognitive, Affective, Psychomotor;
  - Implementing Learning through exploration and Learning via doing;
  - Organizing the experience - From simple to complex, From general to specific, Experiences should build single unit – module, course;
  - Evaluation and Assessment of the results – through KPIs.

In this way we will use Tyler model in our Methodology as technical-scientific model.

6.3. Taba model

The Hilda Taba's model is presented in her publication *"Curriculum Development. Theory and Practice"* from 1962. Taba's ideas on curriculum design can be considered as a further elaboration

of Tyler's model for psychological principles of curriculum development: attributing to them a more pedagogical and practical nature. In her version, Taba introduced notions of multiple educational objectives and four distinct categories of objectives (basic knowledge, thinking skills, attitudes and academic skills). This approach allowed Taba model to relate to specific teaching/learning strategies to each category of objectives. In this sense, her classification of educational objectives has some similarities with Gagné's system of learning outcomes and the conditions of learning which explain the ways for reaching desired outcomes. Also, the sophisticated classification of educational objectives allowed Taba to give to Tyler's notion of learning experiences in a more specific and practical meaning by considering separately the selection and organization of instructional content and strategies of learning. The below mentioned 7 steps for curriculum design and implementation were considerably in some cases better suited for school/training practice than those presented by Tyler.

The development of reasoning was one of Hilda Taba's most important concerns. She understood that teaching was not limited to a mere transfer of facts, but was, rather, the means of developing students' thinking skills, which she understood to be active and reciprocal between the student and subject matter. She perceived the primary role of the teacher as asking thought-provoking and stimulating questions. Hilda Taba stressed the importance of taking the direct life experience of students as the basis for acquiring the elements of social experience. Her activities were always oriented toward both students and teachers, and the society at large; she also followed closely everything happening globally and influencing education in America. Taba's particular contribution to development of cohesion in society was of great significance again.

Hilda Taba believed that there must be a process for evalutating student achievement of content after the content standards have been established and implemented. The main concept of this approach to curriculum development is that teachers must be involved in the development of the curriculum. She believed that the curriculum should be organized around generalized learning objectives which enables students to discover principles that will enable them to be successfully.

Taba's model consists of 7 actions-steps:

a) Action-Step 1. Diagnosis of needs

The teacher/professor (curriculum designer) starts the process by identifying the needs of the students for whom the curriculum is to be planned.

b) Action-Step 2. Formulation of objectives

After the teacher/professor has identified the needs that require attention, he or she specifies objectives to be accomplished.

c) Action-Step 3. Selection of content

The objectives selected or created suggest the subject matter or content of the curriculum. Not only objectives and content should match but also the validity and significance of the content chosen needs to be determined.

d) Action-Step 4. Organization of content

A teacher/professor cannot just select content, but must organize it in some type of sequence, taking into consideration the maturity of the learners, their academic achievement, and their interests.

v. Action-Step 5. Selection of learning experiences

Content must be presented to trainees/students and trainees/students must engage the content. At this point, the teacher/professor selects instructional methods that will involve students with the content.

vi. Action-Step 6. Organization of learning experiences (development of methods)

Just as content must be sequenced and organized, so must the learning activities. Often the sequence of the learning activities is determined by the content. But the teacher/professor needs to keep in mind the particular students whom he or she will be teaching.

vii. Action-Step 7. Determination of what to evaluate and how.

The curriculum planner must determine just what objectives have been accomplished. Evaluation procedures need to be considered by the students and teachers/professors.

Taba stated that there are three groupings of objectives: knowledge - what students/trainees need to understand; skills – what students/trainees need to learn how to; and concepts – what students/trainees need to be. She was an advocated for students using problem solving and inquiry discovery techniques. The main idea to this approach is that the needs of the students/trainees are at the forefront to the curriculum. The use of Taba's ideals of charting students/trainees' status in learning and placing students with similar learning in diverse groupings, what is now called cooperative learning groups. This is an idea that needs to be considered if using the basic ideas of this approach in curriculum design.

Taba model is accepted as bottom-up model.

For our current Methodology, action-steps 3 to 6 from Taba model are important.

Our approach for using Taba model is:

- to create a course as a sequence of modules;
- some modules to have alternative ones.

In this way we will use Taba model as "grass-roots" model.

6.4. Oliva model

In his latest book, "Developing the Curriculum", 7th edition, Peter Oliva (2009) discussed in detail about his model and its relationship with curriculum. The model is based on previous curriculum models such as the Tyler Model (based on student, society and subject matter as sources) and the

Taba model (based on producing pilot, tertiary experimental units, revising and consolidating, developing a framework, and installing and disseminating new units). Oliva further stressed that the Oliva model is based on the „needs from student and society".

Oliva model is expected to provide a foundation for an understanding of its contribution to logistics curriculum. Theoretically, the design and development of curriculum in logistics programs are based on constructive inputs from logistics practitioners. Logistics practitioners can assist academicians and academic administrators by providing important items that may salient for logistics students in order for them to acquire competency through effective and comprehensive logistics curriculum. It is therefore a need for the above stakeholders to have a consensus on designing viable as well as reliable logistics programmes at higher education institutions.

The Oliva Model consists of twelve components:

i. statement of aims and philosophy of education,

ii. specification of needs,

iii. curriculum goals,

iv. curriculum objectives,

v. organization and implementation of the curriculum,

vi. specification of instructional goals,

vii. specification of instructional objectives,

viii. selection of strategies,

ix. preliminary and final selection of evaluation techniques,

x. implementation of strategies,

xi. evaluation of instruction, and

xii. evaluation of the curriculum (Oliva, 2009).

Oliva further explained that the Model can be used in three different ways:

- The Model offers a process for the complete development of a curriculum;
- A faculty may focus on the curricular components of the Model to make programmatic decisions; and
- Instructional components development.

The Oliva model is a deductive model that offers a faculty a process for the complete development of a school/university's curriculum. In the Oliva Model a faculty can fashion a plan:

  - for the curriculum of an area and design ways in which it will be carried out through instruction
  - to develop school-wide interdisciplinary programs that cut across areas of specialization such as career education, guidance, and class activities.
  - for a faculty to focus on the curricular components of the model to make programmatic decisions.
  - to allow a faculty to concentrate on the instructional components.

For our current Methodology, Oliva's basic principles have to be allied for students in a faculty, which have common abstracted needs for education. The model offers faculty-wide interdisciplinary programs making short path across areas of faculty specialization. The model supports the faculty to focus on common curricular components. Also, for the Methodology the model allows the faculty to concentrate on the instructional tools.

In summary, for our Methodology the Oliva model will be used:

  - to incorporate Faculty principles;

- to create Faculty inter-dependencies in the courses.

We will use the Oliva model as a deductive model.

6.5. Hunkins model

Hunkins (2009) emphasis that curriculum development encompasses how a 'curriculum is planned, implemented and evaluated, as well as what people, processes and procedures are involved..'. Curriculum models help designers to systematically and transparently map out the rationale for the use of particular teaching, learning and assessment approaches. Hunkins suggests that although curriculum development models are technically useful, they often overlook the human aspect such as the personal attitudes, feelings, values involved in curriculum making. Therefore they are not a recipe and should not be a substitute for using your professional and personal judgement on what is a good approach to enhancing student learning.

Hunkins model is accepted as decision-making model with the following 7 action-steps:

i. Curriculum conceptualization and legitimization

In this stage participants are demanded to engage in deliberation regarding the nature of the curriculum. This stage stresses understanding the nature and power of curriculum. It also confronts the various conceptions of curriculum. In order for this deliberation to be successful, social contexts, such as power politics, social and cultural views, have to be understood and deliberated. At this stage views of curriculum and its purposes must be legitimized. This is not any easy process; but is the most important.

ii. Diagnosis

This stage has two major tasks; translating needs into causes and creating goals and objectives from the needs. To begin this process educators develop needs analysis depending on the curriculum and the needs of the students. The needs analysis is derived from student data. When a

curriculum is approved and becomes acceptable goals and objectives are generated to serve as guidelines.

iii. Content selection

The Curriculum Development Content Selection deals with the “what” that is to be taught or learned. The content refers to the “stuff” of the curriculum. Content or the “what” refers to the procedures students learn to apply knowledge and skills dealing with facts, concepts, principles, theories and generalizations.

iv. Experience selection

The next step in the Hunkin’s Decision- Making Model is Experience Selection. In this section the emphasis is placed on instruction. Here is where the decision of how the content will be taught or experienced. At this stage teachers will decide what materials will be utilized.

v. Implementation

After the objectives/goals, content and instruction have been approved, implementation is the next stage,. Curriculum Implementation has two stages. The first stage is initial piloting to work out any minor problems and the second stage is the final diffusion stage. The final diffusion of the program is where a management system is set up to ensure the curriculum is ready to be delivered and experienced by the student.

vi. Evaluation

Once the program has been implemented then it can be evaluated. Evaluation is the next stage. This stage continues as long as the program is in effect. The purpose of evaluation is to furnish data to continue to modify, or discontinue the program.

vii. Maintenance

The final stage of the model is Curriculum Maintenance. Curriculum Maintenance is the methods and means by which the implemented program is managed to assure its continual functioning.

The Hunkin's Decision-making Model has a unique feature called the feedback and adjustment loop. This loop allows decision makers to refer back to previous stages to make changes and any modifications. This loop contextualizes the process of creating and implementing curriculum. This aspect of the model addresses many critics of technical models who say that technical models are not related to the times or context in which decisions about curriculum are made.

Our approach for using Hunkins model in our Methodology is:

- to conceptualize the courses in the curriculum;
- to check the achieved curriculum objectives.

7. Procedure of the Methodology

The presented above Methodology for development of training curriculum can be applied via a Procedure, consisting in 5 steps. These 5 steps are shown graphically in figure 3.

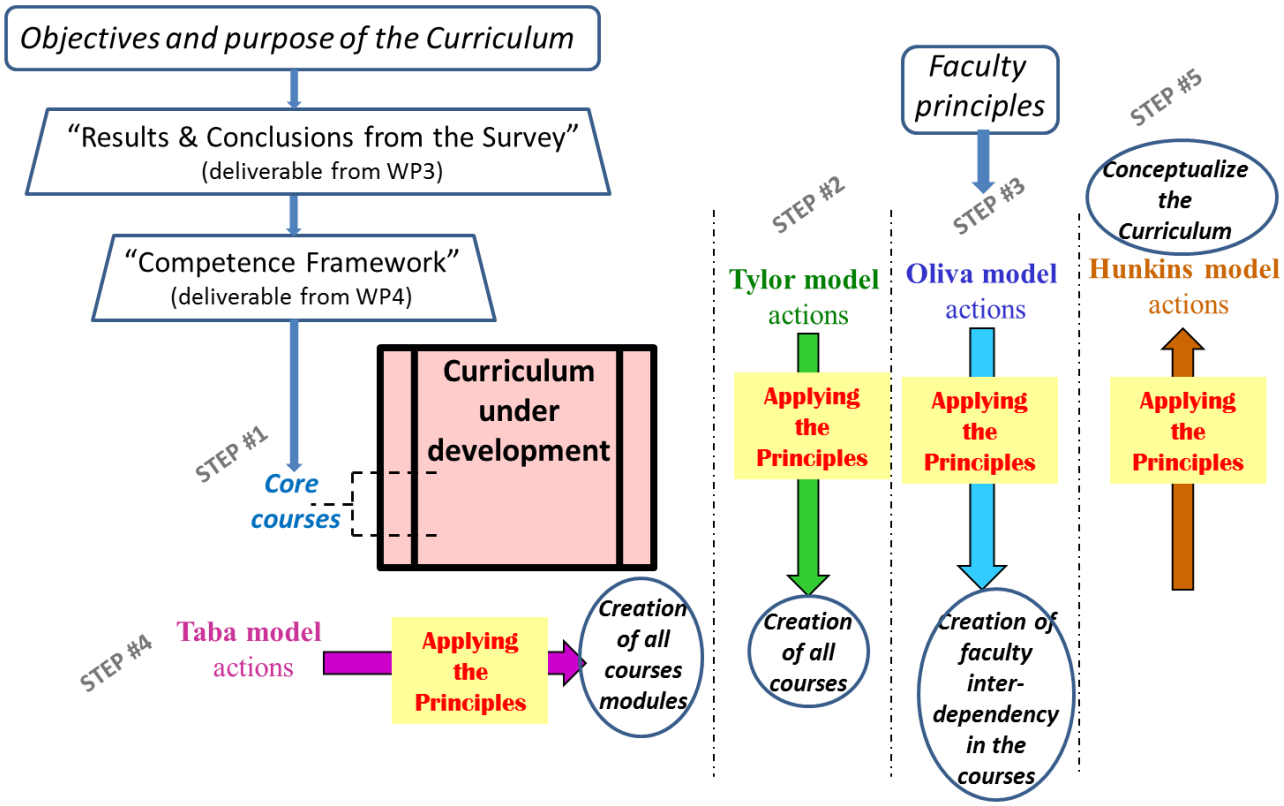

Fig.3

The starting point for the Methodology is:

- Understanding the Objectives and purpose of the Curriculum – part D.2, page 28;
- Results and Conclusions from the Survey (deliverable from WP3);
- Competence Framework (deliverable from WP4).

The developed Procedure consists of 4 steps:

a) Step 1

The purpose of Step 1 is to establish the base of the "Core courses" in the Curriculum.

The beginning for applying of the Methodology is from Understanding the Objectives and purpose

of the Curriculum, which is to implement results from detected skills and competence gaps in the professional digital media and arts sector. From the mentioned objectives has to be created the **first sub-base of the "Core courses"** of the Curriculum.

The document "Results and Conclusions from the Survey" (deliverable from WP3) presents that the most important gaps, which can be summarised in:

- Legal issues, regulation and IPR (Intellectual Property Rights),
- Accountancy,
- Marketing competences (marketing insight, marketing, understanding),
- Business competences (business insight, business processes, business analysis, business administration, business soft skills (negotiation)),
- Programming,
- Management competences (change management, HRM (Human Resources Management), international collaboration, project management, knowledge building),
- Digital media competences (platform and media management, artistry, meeting and presentation skills,)

From the mentioned above most important gaps the Methodology has to be created the **second sub-base of the "Core courses"** of the Curriculum.

The document "Results and Conclusions from the Survey" (deliverable from WP3) presents that the smallest gaps, having the people from that business can be summarised in:

- General computing and communication skills,
- Social media usage,
- Collaboration, ethics and emotions,
- Creativity and innovation,

- General office administration,
- Problem solving

From the mentioned above least important gaps the Methodology should ensure that the Curriculum should not have course like mentioned ones.

The developed Competence Framework has established 3 domains for courses in the future Curriculum:

- domain Digital Multimedia Technology, including the following subdomains: digital photography, audio, video, film, television, radio, graphic and web design, 2D and 3D animations, mobile applications, computer games, coding and cross-media publishing;
- domain Project Management, including the subdomains: scope, time, costs, quality, resource, risk and communications management;
- domain Entrepreneurship, including the subdomains: creativity, innovation and risk-taking, and the ability to plan and manage projects in order to achieve objectives.

From the Competence Framework has to be created the **third sub-base of the "Core courses"** of the Curriculum, which will correspond to the 3 mentioned domains.

b) Step 2

The purpose of Step 2 is to create the Major set of courses in the Curriculum, via tuning the "Core courses" and applying the Tyler model with 4 Tyler's principles, adding new courses.

c) Step 3

The purpose of Step 3 is to create faculty inter-dependency between the courses, applying the Faculty principles of Institution, which will provide the education / training process. For that, the

actions from the Oliva's model will be applied. The faculty's inter-dependencies are mainly presented via courses pre-requisites and adding / deleting some course from the Major set of courses, defined in Step 2. Also, during this Step 3 some sequence or parallel execution between the courses can be introduced. Depending of the educational institution, under the term "Faculty" we can understand a Faculty from a University or the Management of an Educational institution.

d) Step 4

The purpose of Step 4 is to establish modules in the courses of the Curriculum. The action of this Step 4 is based on Taba's model and especially its 3 to 6 action-steps. This Step 4 will divide a course into one or a few parts, called "modules". When a course is divided into one module, it mean the course and the module are the same. The division of a course into modules is meaningful, when the created modules are more than one. The modules for one course can be organised in sequence line or in sequence-parallel way.

e) Step 5

The purpose of Step 5 is to Conceptualize the Curriculum, applying action-steps 3 to 5 of Hunkins' model, as well as to Check the achieved curriculum objectives. This Step uses the mentioned 3 action-steps of the Hunkins' model:

- Content selection,

Selection of courses and modules which cover the gaps between the students / trainees background and the industry needs.

- Experience selection

Selection of courses and modules teaching practical experience and mapping with the courses defining the gaps between the students / trainees background and the industry needs.

- Implementation

Identification of courses and modules, which will lead to creation of Digital media and art components by implementing the thought skills.

8. Dynamics of applying the Procedure steps of the Methodology

The proposed 5 Step of the Procedure of the Methodology can be used in 3 different ways:

- Development of a Curriculum starting from scratch and applying all 5 Steps as a single sequence of actions;
- Development of a Curriculum starting from scratch and applying all 5 Steps, after that applying Steps 4 and 5 many times, until the result from the Step 5 – Conceptualization of the Curriculum, is satisfied;
- Using an already developed Curriculum, which have to be implemented for different educational institutions and countries, Step 3, 4 and 5 have to be applied over this already developed Curriculum, until the result from the Step 5 – Conceptualization of the Curriculum, is satisfied for the specific educational institution and country.