First Results of the Survey, Questions and Recommendations

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Introduction

Designing qualifications schemes and competency profiles on a European level requires a consensus on the terms used and their definitions. It is for this reason that the first step should be to propose definitions of the various notions ; i.e.: "Competency, qualification, activity, task …"

If the term "qualification" does not raise any particular problem, even if qualifications themselves are different from country to country, the same cannot be said from "competencies", on which number of books and articles have been published.

So far, there is no agreement in Europe on the term competency, though many authors have tried to define it. AFNOR defines competency as being "*the application in a professional context, of capacities that allow one to adequately perform a task or a job*".

A recent publication by the Centre Inffo presents the current developments of this notion[1]. One article in particular surveys the various accepted meanings of the word "competency"[2]. For the author of the article, competency is defined by two different approaches:

- An approach that considers competency to be an individual's own resource. This resource appears as a combination of knowledge and know-how, which is implemented according to various situations in order to act in the manner which is relevant to the situation. I call this approach the "stand-alone competency" paradigm.
- The second approach considers competency to be the result of an interaction between the individual's own resources (knowledge, know-how, experience and values…), and other resources that depend on the organisation within which he exercises his competencies (relational networks, databases, equipment …). In this second approach, competency is contextual and takes on a social dimension. I call this approach the "embodied competency" paradigm.

The former approach is generally more common in Anglo-Saxon countries. Many job profiles are based on such an approach, as for example the DITRA Project Distance Trainers Profile[3].

The second approach is interesting when one is interested by the process of competency production or creation, but it seems difficult to use it to produce competency profiles, as one would have to take into account the resources mobilised

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[1] No. 170 of Actualité de la formation permanente January - February 2001 published a special study called "Approches Competences".
[2] S. FERNAGU-OUDET – Voyage au coeur de la compétence … pour une épistémologie de la pratique. – in *Actualité de la formation permanente n° 170* – Centre Inffo – January – February 2001 – p 8-20
[3] See http://www5.vdab.be/vdab/europe/ditra/

by the individual and the contextual elements, which in itself contradicts the idea that a common profile could exist.

However, one cannot completely ignore the "embodied competency" paradigm, and its theoretical advantages. It is for that reason that I am proposing a method that takes into account the variability of competencies depending on the context in which they are implemented, while using a general profile that has been established for each qualification.

In light of the multiple definitions of competency, I must take a position and make a choice: the definition of competency that I will use is the following "*the ability to resolve a problem in a specific context*[4]". This definition has the advantage of allowing us to remain quite general, while at the same time, allowing for the analysis of the activity by large categories of problem types (management, design, production…). The competency in that sense may be general, transversal or specific to a job, it may be individual or collective.

I will define qualification, activity and task in the following ways:

"Qualification" represents the level of capacity or the level of training of an employee, that allows him or her to carry out the various tasks required by a job[5].

"Activity", in a work context, describes what the individual actually does and expresses the manner in which he or she must process in order to accomplish his or her missions. An activity is a set of actions and operations that have a clear objective and provides a homogenous and observable result[6].

"Task" describes the different operations that must be carried out to complete each activity correctly. They aim at achieving a given production through the processes defined by the enterprise[7].

Methodological landmarks

"*A competency profile results from the analysis of the activities, it describes the competencies required to carry out the activities*[8]". This is why the creation of a competency profile must necessarily start with the analysis of the activities carried out in the different jobs that the project has selected. I propose to analyse them in broad categories, in association with the functions necessary for the realisation of the industrial process, as we believe this way to break-down activities is relevant.

A study was recently carried out by CEDEFOP to elicit new job profiles for trainers involved in Open and Distance Learning[9]. The initial hypothesis of this study was that these training systems required new competencies from trainers. To build their competency profile, the authors proposed a matrix of nine boxes that distinguish three

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[4] G. Barnicaud et Y. Georges– Vocabulaire technique de la formation– Série Méthode et Organisation – AFPA – 1997
[5] Idem
[6] Idem
[7] Idem
[8] Idem.
[9] A. Coulon & F. Haeuw (2001) – L'évolution des compétences du / des formateurs dans les dispositifs de formation ouverte et à distance – CEDEDFOP – Thessaloniki – Grèce.

categories of competencies: "conceptual" competency, "technical" competency and "human" competency. The authors consider that they are implemented at three level: at the socio-economical environment level, at the level of the training system and within the trainer - learner relationship. This matrix gives an ideal profile, build within a closed but nevertheless interesting approach. But it does not correspond to our objective, which is to build competency profiles from the real world of education and training, through field surveys.

As far as the project is concerned, we have chosen to build our competency profiles from data collected in education and training organisations and in companies, while retaining the three categories of competency proposed, which we will relate to the different steps of the training process, and at least to the following:

- Design
  - System design
  - Instruction design,
  - Product design,
- Prescription
  - Training needs analysis,
  - Prior Learning Assesment
Implementation
  - Training delivery,
  - Evaluation of training / certification.

We also have to define the jobs that are included within the scope of the study, then to determine, for each job, the steps of the process which are to be taken into account, and finally to identify, for each step, the nature of activities. I suggest the following titles:
  - Instruction Designer,
  - Subject Matter Expert,
  - Teacher
  - Trainer
  - Tutor
  - Coach
  - Mentor
  - Expert

The definition of the jobs is based upon several studies carried out previously by the TTNET network in several countries[10]. The matrix allow to define the principal and secondary activities for each job and will give a first represntation of the activities carried out by each job title.

Our second set of tasks consists in defining by activity or by category of activities, the competencies according to the three dimensions that were proposed (conceptual, technical and human), to which we believe it is necessary to add what the Canadian name "behavioural competencies", that I have chosen to call "general aptitudes". Here again I will use past studies mentioned above.

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[10] See Research and Case-Studies listed in my first document.

Such a methodology has the advantage to break down the activities into small chunks, and consequently to provide, for each activity, a set of associated competencies related to the execution of a coherent and indivisible group of tasks belonging to a particular step of the Learning / Training process. This also allows us to distinguish the "job" or "function" issue, the form of which is dependent upon the type of organisation, from the issues related to the activities that are necessary to achieve the production process, the sequence of which is quite fixed for a determined technical system.

My hypothesis is that the competencies that are necessary for the execution of a given task within a technical system are more or less stable and independent of the organisation, as well as of the combination of tasks into activities. The variability that has been noted in the existing profiles is rooted in the fact that activities or set of skills are linked directly with a title of function or job, and therefore depends upon the type of organisation (matrix, network…), its size and sector (audiovisual or software development…). But the "task – competency" level is suitable to account in a relevant manner for this diversity.

This is why, to try and identify the influence of these different contexts on the combination of activities into jobs and functions, I propose to proceed with field surveys, and then to validate a preliminary "jobs - tasks" matrix with a group of education and training organisations in Europe.

Statistical analysis of the matrix will allow us to determine core jobs profile, from a kernel of principal and secondary activities that has been statistically defined. It will then be easy to generate competency profiles that are associated to them, thanks to the association of capacities – competencies that were defined beforehand.

The case studies

According to the Brussels Meeting conclusions, all Ttnet case studies received to-date have been evaluated according to the agreed criteria, including the Portuguese and Spanish ones.

In particular, the "Observable Achievements" and "Measurable Impacts" criteria are strongly related to the duration and to the number of participants, which in most of the cases, are not significant enough.

Four cases studies have been analysed, one from France, one from Belgium, one from Portugal and one from Italy: The AUTOFOD project (F), the SIEMENS Learning Valley project (B), the PROFISS project (P) and the FADOL project.

Though not statistically significant, these 4 case studies cover all the profiles, as shown in Table 1 below.

One profile is mentioned in all cases: the Expert. Three profiles are mentioned in 3 of the cases: the Instruction Designer, the Trainer, the Tutor. They will be discussed first. The "Mentor" and the "Teacher" role only appear in one cases study, and therefore these roles will not be investigated at this stage of the preliminary report.

	AUTOFOD	SIEMENS	PROFISSS	FADOL
Instruction Designer	X		X	X
Subject Matter Expert			X	X
Teacher	X			
Trainer	X	X	X	
Tutor	X		X	X
Coach		X	X	
Mentor		X		
Expert	X	X	X	X

Table 1

The expert

The name "Expert" seems to be understood in different ways, since for each case, the expert participates in different but limited range of activities:
- Instruction Design and System Design for PROFISS and FADOL,
- Training Needs Analysis for SIEMENS,
- Teaching and Training Delivery for AUTOFOD.

The Trainer

The range of activities in which the "Trainer" is involved is important: for two cases, all activities are part of the trainer's job! This certainly means that "Trainers" is rather a generic term.

Nevertheless, there is an agreement to consider as his/her main tasks those concerning the **Teaching / Training Delivery** phase, and in a particular the following:
- Delivery of verbal content (teaching),
- Provision of support to learner concerning,
    o Learning Methodology,
    o Content,
- Fostering learner's motivation and self-study readiness,
- Fostering group communication and collaborative work,
- Facilitating learning and transfer.

Another range of activities seems to be part of the Trainer's job in some organisations: Instruction Design. Here, the Trainer takes a role in the Instruction Design and in the Material Design phase which is very closed to the role of the Instruction Designer, with less emphasis on tasks related to Material Design. In the SIEMENS experience, it seems to be significant that the Instruction Design Profile does not exist, since the related tasks in other projects are devoted to the Trainer.

The Instruction Designer

As a difference with the Trainer, more emphasis is put in the Instruction Designers' job on the Material Design phase: the tasks appearing currently as the core of his/her job are the following:
- Analysis of course syllabus,
- Choice of learning methodologies,
- Planning the learning process,
- Planning the evaluation process
- Breaking down the course into learning situations
- Sketching and validating scenarios for the material.

The Tutor

This job clearly appears as related to **distance Teaching and Training Delivery**. Only the PROFISSS project consider that there are two types of tutors, one operating in face-to-face sessions (which I would rather call "mentor"), and the other in distant learning situations.

In the more general case, the tasks achieved by the Tutor are the following:
- Distance support to the learner concerning:
    o Learning Methodology,
    o Learning Content,
    o Technological matters;
- Distance fostering of:
    o Self-Study readiness,
    o Group communication and collaborative work;
- Distance facilitating of learning and transfer,
- Distance monitoring of learner's progress.

Two other profiles deserve some comments, though only described in two projects: the Subject Matter Expert, and the Coach. To say more about these profiles require further investigations.

The Subject Matter Expert

This profile seems to be rather complementary to the Instruction Designer: whereas the Instruction Designer activity seems to focus on the "structure", on the formal aspects of the design, the Subject Matter Expert activity concentrates on the learning content.

The Coach

At the opposite of the Tutor which supports the learner at distance, the Coach appears to perform in on-the-job learning situations. One difference between the Coach and Tutors or Trainers seems to be that his/her activity is focussed on the content, or at least on the cognitive field: he/she does not seem to play a part in the "conative" aspects (fostering motivation, transfer…).

Provisional conclusions of the case studies

Though the number of the case studies is not statistically significant, our prior knowledge of this matter allow to make the following assumptions.

1) The names of the different profiles, as expected, do not mean the same thing for everybody. This, by itself, justify the proposed approach.

2) The "Trainer" is still the core "character" on the scene, and ideally, he/she is vested with all the roles which are now developing.

3) But new roles are emerging, as a specialisation of part of the Trainer's role: on one hand, Instruction Design and Material Design require more dedicated skills, on the other hand Support functions give raise to various profiles such as Tutor or Coach jobs. This can be seen as a split of the ternary relationship between knowledge, learner and trainer, called the "Pedagogic Triangle", as shown in Diagram 1 below.

Diagram 1

Knowledge

Design

Learner ⟷ Trainer

Mediation
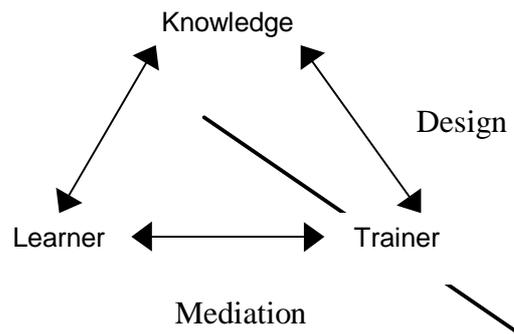
4) It is interesting to see that "e-learning", considered as a transforming factor, seems not only to foster the creation of new roles, but also to impact all existing roles. Therefore, it seems that all actors not only need to be acquainted with Information and Communication Technology, but also should be prepared either to specialise or to enlarge the field of their capabilities.

Recommendations

At this stage, the following recommendations can be proposed and discussed.

1) Names do not mean the same thing for everybody, and the activities behind are context-dependant. So, before stabilising titles, further investigation is required, using a similar approach which allows to capture and understand the diversity.

2) New Job Profiles are clearly emerging, stemming from the evolutions of the Trainers' job towards two directions, Design of Learning Systems, and Mediation. Nevertheless, a larger survey is needed to determine the core tasks performed in each field, and the various profiles.

3) ICT and its uses are becoming part of all profiles, but the competences required by each profile do not seem to be similar. This means that, if there should be a common basic level of mastery, specialisation is also required for at least each of the two domains: Design of Learning Systems, and Mediation.

4) In any case, preparing the specialisation or supporting the evolution of actual Trainer's role as a paradigm of all future roles requires the development of Training the Trainers courses in all countries. There is an opportunity for a dedicated Action Plan within the Commission eLearning Initiative.

Annexe 1 : Tasks and Profiles

	Activities			Instruction Designer	Subject Matter Expert	Teacher	Jobs	
	Activity		**Task**	**Instruction Designer**	**Subject Matter Expert**	**Teacher**	**Trainer**	**Tuto**
A1	Learning / Training System Design	A1.1	Institutional environment analysis	2	1		2	
		A1.2	Existing qualifications analysis	2			2	
		A1.3	Labour Market Analysis	3	1		2	
		A1.4	Jobs / Tasks Analysis	1	1		2	
		A1.5	Working Environment Analysis	1	1		2	
		A1.6	Job Profiles Analysis	1	1		2	
		A1.7	Skill Gap Analysis	1	1		2	
		A1.8	Definition of required domains / disciplines for a curriculum	3	3		2	
		A1.9	Definition of course syllabus	4	3		2	
		A1.10	Market surveys (for a course, a curriculum...)	1	2		2	
		A1.11	Validation of course syllabus	1	1		4	
A2	Instruction Design	A2.1	Analysis of course syllabus	5	3		4	
		A2.2	Choice of Learning methodologies and Learning situations	5	3		4	
		A2.3	Course specifications (competencies levels, learning methodologies, learning profiles, pre-requisites, acquisitions…)	4	3		4	
		A2.4	Plan of the learning process	5	3		4	
		A2.5	Plan of the evaluation process	5	3		4	
		A2.6	Breaking down curriculum into Learning situations	5	1		4	
		A2.7	Definition of competencies acquired in each situation	4	4		4	
		A2.8	Analysis of existing material	3	4		4	
		A2.9	Decision to adapt or produce material	4	2		3	
		A2.10	Selection of product / media for Learning situations	4	3		4	
		A2.11	Documentation of the course (objectives, curriculum, situations, material…)	5	3		3	
A3	Learning Material Design	A3.1	Reading course specifications and documentation	5	4		3	

		Description				
	A3.2	Definition of Learning situations in which a given material will be used	4	3		4
	A3.3	Listing the competencies the acquisition of which the material will support	4	2		3
	A3.4	Sketching scenarios	6	3		3
	A3.5	Validation of scenarios against the required competencies	4	4		4
	A3.6	Writing detailed scenarios	4	3		3
	A3.7	Specification of illustrations (texts, sounds, images…)	3	2		3
	A3.8	Specification of interactivity schemes, branching sequences, data collected…	3	1		1
	A3.9	Validation of detailed scenarios and specifications	6	2		4
	A3.10	Writing pedagogical Guidelines for trainers, tutors, learners…	2	3		3
B1 Learning Needs Analysis	B1.1	Getting information from / about the learner (interview, tests…)		2		4
	B1.2	Getting information about the job, required competencies, Learner's projects…		2		3
	B1.3	Geting information about Learner's Learning profile, Learner's readyness for self-study (questionnaires, tests…)		2		3
	B1.4	Analysis of the "Learning gap"		2		3
	B1.5	Prescribing a Learning curriculum		2		4
	B1.6	Prescribing a starting point and a Learning path		2		2
	B1.7	Prescribing Learning methodologies	2	3		4
B2 Prior Learning Assessment	B2.1	Getting information from / about the learner (interview, tests…)		2		3
	B2.2	Counselling the learner to provide evidence of prior Learning (process requirements, how to do…)		2		3
	B2.3	Participation in Port-folio evaluation		3		3
	B2.4	Participation in Prior Learning Assessment Jury		4		4
C1 Teaching / Training Delivery	C1.1	Delivery of verbal content (teaching)			2	6

		Code	Description				
		C1.2	Distance delivery of verbal content (Distance teaching)			1	3
		C1.3	Provision of Methodological Support to learner			1	6
		C1.4	Distance Provision of Methodological Support to learner				3
		C1.5	Provision of Support regarding content to learner			2	6
		C1.6	Distance Provision of Support regarding content to learner			1	3
		C1.7	Provision of Technical Support to learner				4
		C1.8	Distance Provision of Technical Support to learner				2
		C1.9	Fostering learner's motivation		1		6
		C1.10	Distance Fostering learner's motivation		1		5
		C1.11	Fostering learner's self-study readiness		1		5
		C1.12	Distance Fostering learner's self-study readiness		1		3
		C1.13	Fostering group communication and collaborative work				6
		C1.14	Distance Fostering group communication and collaborative work				3
		C1.15	Facilitating learning and transfer				6
		C1.16	Distance Facilitating learning and transfer				3
		C1.17	Monitoring learner's progress		2		4
		C1.18	Distance Monitoring learner's progress		2		3
C2	Evaluation of learning / training and certification	C2.1	Sommative evaluation of learner (tests, assignements, exams…)		1		4
		C2.2	Distance Sommative evaluation of learner (tests, assignements, exams…)		1		2
		C2.3	Formative evaluation of learner (indentifying learning gaps, counselling on learning methodology, learning paths…)		1		4
		C2.4	Distance Formative evaluation of learner (indentifying learning gaps, counselling on learning methodology, learning paths…)		1		2
		C2.5	Certification delivery	2	2		2