

Competencies of Recent University Graduates: What University Supply Them and What the Jobs Require From Them¹

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1. Introduction

On these last years an intense research work has been developed in the field of “*competencies based education*”. This interest come from the need for European universities to adapt to the new European Space for Higher Education but also from the compromise for Higher Education Institutions to improve the quality of its services, this is “education”. Up to now there is not a thorough consensus about the meaning of “competencies”. Only and as a product of the progressive implementation of Bologna process has been a bigger stress on the concept of “learning outcomes”. Such concept is directly related to the former but there are some aspects related to different agents involved in both processes that make some difference. At the beginning the concept of “*competency*” was restricted to the set of manual or instrumental capabilities needed to the correct performance of the tasks required in the job position. Or either to the capability to accumulate knowledge related to a certain subject. Fortunately during these last years new ideas have been introduced that allow to surpass the simple consideration of manual or practical skills adding new dimensions to the concept of “competency”.

We select the classification of Kellerman (2007) from the many classifications that have been produced in these recent years:

- Generic and academic Competencies: Related to general knowledge

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- Operational and scientific Competencies: Accurateness and detail care
- Professional and personal Competencies: Specific knowledge and methods
- Reflexive and social Competencies: Leadership and teamwork.
- Manual and physical Competencies: Manual skills

Based on REFLEX (ROA, 2007) methodology, the Project tried to answer three very general and interconnected questions:

- The competencies that university graduates require to adequately perform in the new knowledge society.
- The role that HEI (Higher Education Institutions) play in order to provide the students with such competencies..
- The conflict that emerge as university graduates, HEIs, employers and some other agents try to reach their own aims and the way to solve it.

The Project is based on a survey on university graduates that engaged on work five years previous to the moment of the study

This survey is compared with two parallel Studies: with employers to contrast both perceptions on competencies acquired and competencies most required, with academics to contrast perceptions on competencies acquired in university and the methodologies used to provide them.

2. Objectives

The broad objective of the Project was to *“Analyze the competencies that recent university graduates acquire in university and the experience during their first years in work and the transition from university to labour market”*.

This general objective was deployed into some others more concrete aims on social education, innovation, professional success, gender, etc. We can mention the following ones:

- Analyze the social competencies as well as the teaching methods associated with the learning of the former.
- Compare the competencies that graduates acquire in university in different academic fields and levels of studies from the point of view of academics.
- Learn what competencies recent university graduates acquire in university and what they acquire from the experience during their first years in work establishing so what educational needs the graduates have.
- Investigate on the relationship between labour experience and the specific training in company and the acquisition of competencies during the transition period to the market labour after the graduation from the perspective of the employers.
- Identify and characterize the graduates with innovation capabilities whose work tasks are associated with this competency.
- Study the personal and educational factors more relevant for the process of acquisition of the innovation capability in university graduates.

- Examine the competencies that innovative graduates acquire as a result of his time in university as well as the ones acquired as a result of their job experience.
- Determine the characteristics of graduates that have reached professional success and the personal and educational factors more relevant during their educational process
- Consider in all the former Studies the influence of gender as a determinant factor in the process of competencies acquisition and transition to job market.

To do all of the above we evaluated the competencies of recent university graduates in different moments: a) University Entrance; b) During their stay in university; c) at the moment of graduation, d) during their work life.

3. Methodology

The study of competencies of university graduates was based in the ANALYZE OF DIFFERENT INTEREST GROUPS:

- UNIVERSITY GRADUATES: A survey directed to the 2005 graduates of University of Basque Country in Gipuzkoa: We had some 239 answers, 11,4% answer rate, from all academic fields with a sample error of 6%. The results were compared with those of European Project REFLEX, (ROA, 2007) on competencies and university graduates job market in Basque Country; Spain and some other European countries like France, Germany and the UK..
- ACADEMICS: A survey directed to the academic staff of University of Basque Country in Gipuzkoa campus on the contribution of HEIs to the education in competencies. We had 274 answers that represent a 20% answer rate and a sample error of 5%.
- EMPLOYERS: Focus Group with 20 participants, belonging to diverse companies and institutions.

4. Results

In this paragraph we present the results we believe are more relevant.

4.1. Competencies acquired in university

The three collectives, Graduates in 2005, Academics and Employers show a high degree of consensus on what are the competencies acquired in university through the formal educational process.

- *Competencies better acquired up in university*

The three of them agree that in university students acquire an adequate level of:

- *Ability to handle information technology tools*
- *Capacity to acquire rapidly new knowledge*
- *Command of the own field of knowledge*
- *Analytical thinking*

Graduates and Academics think that they have also acquired the capacity to “*Write reports and documents*” but the Employers think that this is actually one of their main weak aspects. Graduates think that they have learnt to “*Work in teams*” but Academics and Employers do not think the same.

- ***Most notorious weaknesses in recent university graduates***

The three collectives agree that the most ***notorious lacks in recent university graduates*** lay in their “*Leadership competencies*”:

- *Ability to mobilize the capacities of other people*
- *Ability to detect new oportunities*
- *Ability to coordinate activities*
- *Ability to negotiate in an effective way*

Graduates think that they have lacks in order to “*Speak and write in foreign languages*” but Academics and Employers do not think the same way. Probably Graduates do speck foreign languages far better than both collectives.

Graduates and Academics agree that they lack “*Knowledge in other fields of study*” but the Employers do not think so.

4.2. Competencies required in university graduates job positions

There is not a high degree of agreement between the three collectives. In general terms it seems that university gives an adequate command of some subjects that are useful but some others that are also important are better acquired in the job. Because of this it is important to establish shared education processes.

- ***Competencies more needed in job positions***

There is only one competency in which the three collectives agree and this is “*Teamwork*”.

Graduates and Employers agree in the importance of:

- *Capacity to acquire rapidly new knowledge*
- *Command of the own field of knowledge*

Graduates and Academics emphasize the importance of:

- *To communicate / to be able to be understood by others*
- *To master information technology tools*
- *To use time in an effective way*

But Employers do not give the former much importance, probably because they think all university graduates have them in an adequate level.

Employers also emphasize the importante of “*Leadership competencies*”:

- *Ability to mobilize the capacities of other people*

○ *Ability to detect new oportunities*

They consider them a typical and banal weakness in university education but this competency could be acquired through practical periods in companies.

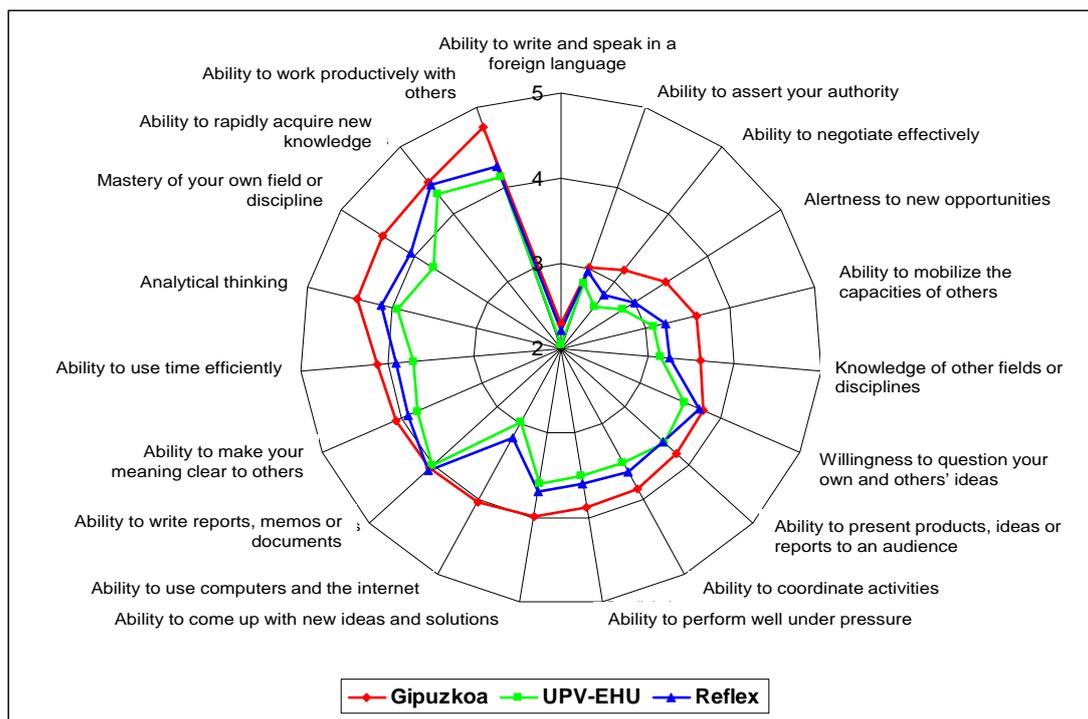
- ***Competencies less needed in job positions***

Graduates and Academics think that “*Knowledge in other academic fields*” and “*Leadership*” are not very important once in the job

It is very noticeable that Graduates with 5 years experience in the job market think that the “*Command of foreign languages*” is not much necessary for the job. This means that the majority of graduates do not use them in everyday job although in some positions they are compulsory.

And what is really revolutionary is that Academics think that the “*Command of the own academic field*” is not so important.

When considered as a whole, the competency levels acquired by the people and the required levels for the job, this allow analyze in multiple dimensions the quality of the match between both. Upon this match quality depend finally the productivity of the graduates in their Jobs and by aggregation that of the whole productive system.



Picture 1. Contribution of University Studies to competency development

If we analyze the contribution of University Studies to competency development, Picture 1, show the data corresponding to the different competencies ordered from the point of view of the Graduates.

It can be appreciated that “*Teamwork*”, “*Acquire new knowledge very fast*”, “*Command of the own academic field*” are the competencies more commonly acquired in university.

On the opposite, “*Command of foreign languages*”, “*The use of authority*” and “*Ability to negotiate*” are the competencies less commonly acquired in university.

4.3. Teaching-learning methods used in university education

There is a total lack of agreement between university Graduates and Academics. The former remember that the methodology more Commonly used with them (that is before 2005) were:

- *Written papers*
- *The Professor as the main source of information*
- *Theories, concepts and paradigmas*

On their side Academics declare that those were, precisely, the methods that they used the less while they used more commonly:

- *Practical knowledge*
- *Lectures attendance*
- *Project and problema based learning*
- *Teamwork*

During this last five years we are presencing an enormous change in the university teaching-learning paradigma promoted by the adaptation to the Higher Education European Space (“*Bolonia*”) and it is possible that an important part of the Academics in University of the Basque Country are assuming it. This change could be resumed in the phrase “*from teacher teaching to student learning*”. Graduates on the opposite do not quite agree with this idea as they remember that the methodology more commonly used with them were:

- *Research projects*
- *Practical work in companies*
- *Oral lectures and conferences*

Employers on their side emphasize as critical factors to the success of the education the transmision of “*values*” related to the work world:

- *Trust in people,*
- *Authonomy in work*
- *Loyalty to the company*

For this purpose they claim the importante of shared education university-enterprise but with some changes to the currente models. Most of all more implication from enterprise managers themselves serving as models or mentors for students.

4.4. Professional success perception

If we consider professional succes in the economic side exclusively, the salary level of Gipuzkoa graduates is higher that the one of their counterparts in the rest of the Basque

Country and Spain. This is so not only in the geographical comparison but also in the gender comparison.

Even though Gipuzkoa graduates show themselves not particularly satisfied with their Jobs compared with the graduates from the rest of Spain.

The expectations that them see more thoroughly fulfilled are:

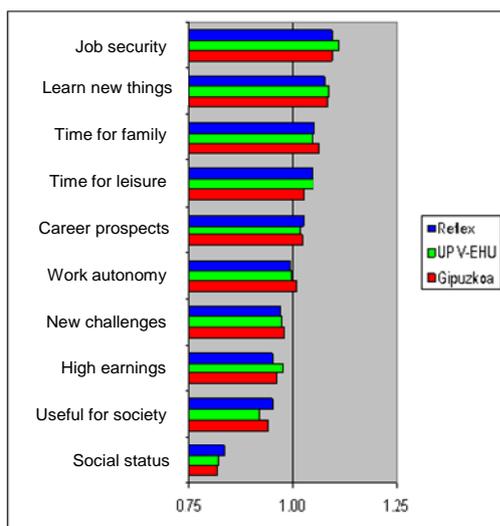
- *The possibility to learn new things*
- *The usefulness for Society*
- *Social prestige*

However they have some other expectations not so thoroughly fulfilled such as:

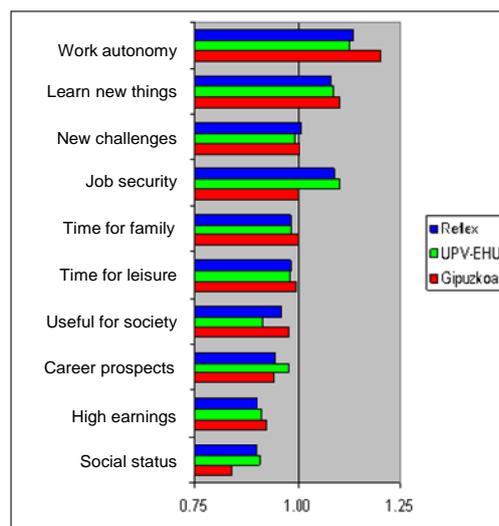
- *Labour establiity*
- *The possibility of conciliate family dedication and work*
- *High salary*

Frequently graduates find problems not only in their own organization but also in the environment in which they work.

Importance of job values for graduates



Importance of job values for their jobs



4.5. Gender on the graduates access to work

In general, graduate women are still not en equal terms with their male colleagues in most of the issues related to the transition from university to work:

- *Their work is less establi and with less dedication*
- *Is harder for them to get the same positions and salaries*

But those differences are less obvious in Gipuzkoa as we see the results of our study.

During the transition from university to work women suffer more frequently and longer unemployment periods. In this context, women are more likely to change job, contrary to what happens in the rest of Spain.

Once in the job, contracts for women are more often part time, less duration and lesser salary.

5. To conclude

5.1. – University graduates level of competencies:

1. *University graduates consider themselves relatively better in some competencies as: Teamwork, Acquire new knowledge very Fast, Command of information Technologies.*
2. *There are evident improvement areas such as: Move other people, Detect new opportunities, Coordinate activities, Negotiate in an efficient way.*

5.2. – University contribution to competencies development:

1. *University is efficient in providing students with high level of competencies as: Teamwork, Acquire new knowledge very Fast, Command of the own area of knowledge.*
2. *Some other competencies as: Command of foreign languages, Effective use of authority, Negotiate in an efficient way are better acquired in other places out of university.*

5.3. – Critical factors for competencies efficient apprenticeship:

From the employers point of view there are some critical factors able to significantly contribute to the acquisition of competencies needed in job:

1. *Practical periods (internship) in company*
2. *Development of work values*
3. *To offer effective leadership referents to the students when in companies.*
4. *To look for common views between students interests and enterprise interests*
5. *To promote a higher implication of students with their work*

Bibliography

1. Allen, J. & van der Velden, R. (2001). *Educational Mismatches versus Skill Mismatches: Effects on Wages, Job Satisfaction and On-the-job Search*. Oxford Economic Papers, 53, 434-452.
2. Amabile, T. M (1996): *Creativity in Context*, Westview Press, Boulder, USA.
3. Arthur, M.B., Khapova, S.N., Wilderom, C.P.M. (2005). *Career success in a boundaryless career world*. Journal of Organizational Behavior, vol. 26, nº2, 177-202.
4. Becker, G. S. (1964). *Human Capital*.
5. Bishop, J. H. (1995). *Vocational Education and At-Risk Youth in the United States*. Vocational Training European Journal, 6, 42.

6. Boshuizen, H. P. A. (2004). *Does Practice Make Perfect? A slow and discontinuous process*. In H. P. A. Boshuizen, R. Bromme & H. Gruber (Eds) *Professional Learning: Gaps and Transitions on the way from novice to expert* Dordrecht: Kluwer Academic Publishers.
7. Buesa, M. y Zubiarurre, A. (1999). *Patrones tecnológicos y competitividad: Un análisis de las empresas innovadoras del País Vasco*. *Ekonomiaz*, vol. 44, 208-237
8. Bunk, G. P. (1994). *La transmisión de las competencias en la formación y perfeccionamiento profesionales en la RFA*. CEDEFOP, 1, 46-61.
9. Diputación Foral de Guipúzcoa (2006), *Informe i-guipuzkoa 2010*, Guipuzkoa en la Sociedad de la Información, estrategia 2006-2010.
10. European Commission (2005). *Strategy for an innovative and inclusive European Information Society*. Information Society and Media. General Fact and Sheet.
11. FECYT (2007). *Mujer y ciencia. La situación de las mujeres investigadoras en el sistema español de ciencia y tecnología*, 2ª edición actualizada.
12. Fundación COTEC para la Innovación Tecnológica (1997). *Patrones y comportamientos de innovación tecnológica en las PYMES del País Vasco*. Análisis de casos.
13. García-Aracil, A. & van der Velden, R. (2008). *Competencies for young European higher education graduates: labor market mismatches and their payoffs*. Higher Education.
14. Hartog, J. (1992). *Capabilities, Allocation and Earnings*. Boston: Kluwer.
15. Heijke, H., Meng, C. & Ramaekers, G. (2003). *An investigation into the role of human capital competences and their pay-off*. *International Journal of Manpower*, 24, 750-773.
16. Kellerman, P. (2007). *Acquired And Required Competencies Of Graduates*. In U. Teichler (Ed) *Careers of University Graduates: Views and Experiences in Comparative Perspectives* Dordrecht: Springer.
17. Korman, A.K., Wittig-Berman, U. and Lang, D. (1981). *Career Success and Personal Failure: Alienation in Professionals and Managers*. *Academy of Management Journal*, vol. 24, nº 2, 342-360.
18. Lawrence, P. A. (2006): *Men, Women, and Ghosts in Science*. *PLoS Biol.* 4(1): e19
19. Mora, J.G., CEGES-LMPF (2008). *El "éxito laboral" de los jóvenes graduados universitarios europeos*. *Revista de Educación*, nº extraordinario 2008, 41-58.
20. Nordaug, O. (1993). *Human capital in organizations, competence, training and learning*.
21. Plan de Ciencia, Tecnología e Innovación 2010 para el País Vasco
22. Ramis Pujol, J. (2005). *Guía práctica de la innovación para PYMES*. ANETCOM
23. ROA (Research Centre for Education and the Labour Market). *The Flexible Professional in the Knowledge Society. New Demands on Higher Education in Europe (REFLEX)* < <http://www.fdewb.unimaas.nl/roa/reflex/> > [Consulta: 08/01/2007]

24. Schomburg, H. (2007). *The Professional Success of Higher Education Graduates*. European Journal of Education, vol. 42, nº1, 35-57
25. Seibert, S.E., Kraimer, M.L., Liden, R.C. (2001). *A social capital theory of career success*. Academy of Management Journal, 2, 219-237.
26. Stasz, C. (1998). *Generic Skills at Work: Implications for Occupationally-Oriented Education*. In W. J. Nijhof & J. N. Streumer (Eds) *Key Qualifications in Work and Education* (pp. 187-206). Dordrecht: Kluwer Academic Publishers.
27. Tejada Artigas, C. M., Tobón Tobón, S., Martínez Comeche, J. A., Mendo Carmona, C., Moreiro González, J. A. & Ramos Simón, L. F. (2006). *El diseño del plan docente en Información y Documentación acorde con el Espacio Europeo de Educación Superior: un enfoque por competencias*. Facultad de Ciencias de la Documentación. Universidad Complutense de Madrid.
28. Vila, L. (2005). *Capital Humano Heterogéneo y Productividad de los Graduados de Educación Superior*. Revista Económica de Castilla-La Mancha, 7, 82.