

# Analyzing the obstacles for the academic and organizational change in universities

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**Abstract** – European universities are embedded in a process of change in innovation, organizational and governance aspects within the convergence process. The practical implementation of the Bologna objectives implies not only a conceptual reorganization of the educative systems but a change of paradigm in the academic and organizational culture. There exist diverse tensions between the national legislation, accreditation, quality assurance and the process of change, both in internal and external contexts. The aim of this paper is to examine some trends and obstacles that are emerging in the universities related to these issues, particularly in the Spanish case. Firstly we intend to identify the critical areas for academic and organizational culture change. Secondly, we comment the recent experience in the School of Design Engineering to improve the staff participation. In addition, we present some possible strategies for deepening actions oriented to the awareness and formation of staff members and involving them in a shared culture to manage the change.

*Index Terms* - European convergence, competence-based learning, outcomes, academic and organizational change.

## INTRODUCTION

Within the advance in the European convergence process, the majority of the European universities are embedded in an important transformation process, reinforcing their three basic missions: education, research and knowledge transference, among their extension and socio-cultural activities [1]. The tailoring of the structure of different university studies to the European Higher Education Area (EHEA) is the major task outstanding in Europe's different university systems. The practical implementation of the Bologna recommendations and requirements (new degrees, European Credit Transfer System, quality assurance and accreditation, Dublin descriptors, etc.) implies not only a conceptual reorganization of the educative systems but a change of paradigm in the academic and organizational culture [2]-[3].

In the report *Mobilising the brainpower of Europe: enabling universities to make their full contribution to the Lisbon Strategy* (2005) it affirms that universities need to accelerate the pace of reforms for ensuring a more effective contribution to the Lisbon strategy and the strengthening of the European social model. It identifies three main challenges for European higher education: achieving world-

class quality, improving governance, and increasing and diversifying funding [4].

Although the majority of universities are working around these issues, in several countries -as Spain- there exist diverse tensions between the national legislation, accreditation, quality assurance and the process of change, both in internal and external contexts.

The aim of this paper is to examine some trends and obstacles that are emerging in the Bologna process related to these issues, showing and analyzing the particular case of the School of Design Engineering in Spain.

## THE CORE MODERNISATION AGENDA FOR UNIVERSITIES

The “core” modernisation agenda for European universities is to improve and advance in reforms related to the attractiveness, governance and funding [4].

- **Attractiveness (curricular reform):** Raising quality and attractiveness requires major transformations at universities with a profound curricular renovation, with the implementation of the Bologna reforms and the establishment of a European Qualification Framework [5]. Universities need better to communicate with society about the value of what they produce, and to invest more in their presence and marketing at home and abroad.
- **Governance reform:** Universities are calling for a fundamentally new type of arrangement (or “contract”) with society, whereby they are responsible and accountable for their programmes, staff and resources, while public authorities focus on the strategic orientation of the system as a whole. Also it is necessary enabling institutional modernisation strategies for better system and institutional management. Universities need more autonomy and improve the excellence through internal and external Quality Assurance.
- **Funding Reform:** To attract more funding, universities first need to convince stakeholders -governments, companies, households- that existing resources are efficiently used and fresh ones would produce added value for them. Higher funding cannot be justified without profound change: providing for such change is the main justification and prime purpose for fresh investment [6].

If universities are to become more attractive locally and globally, profound curricular revision is required - not just to ensure the highest level of academic content, but also to

respond to the changing needs of labour markets and socio-cultural demands [7]. The integration of graduates into professional life, and hence into society, is a major social responsibility of higher education. Learning needs to encompass transversal skills (such as teamwork and entrepreneurship) in addition to specialist knowledge.

Moreover, the potential of Information and Communication Technology (ICT) should be fully exploited in teaching and learning process within the lifelong learning framework.

The current structural and curricular reform provides an opportunity for universities to reflect upon management practices and to review formative programs and teaching methods with the aim of ensuring their quality. Although the need for reform is obvious, changes are difficult and there is discrepancy between national rhetoric and institutional reality. In several countries it exists a high risk that concepts and tools such as student-centred learning, competences, learning outcomes and curricula development may be implemented haphazardly to comply with existing regulation, without a deep understanding of their pedagogical function [8].

The institutional and academic transformation requires a significant amount of change in attitudes, practices and policies throughout the university community. These attitudes, practices, and policies are what define the academic culture, how people behave and relate to one another, who belongs and how decisions are made, and ultimately what has value and meaning in the organization [9]-[10]. Cultural change is a critical issue for planning long-term changes in governance, funding and attractiveness of higher education and a pre-requisite for the successful in 2010 of the Bologna process.

#### STRENGTHS BETWEEN GOVERNANCE AND ACADEMIC CULTURE

In the document *Delivering on the modernisation agenda for universities: education, research and innovation*, published by the European Commission in May 2006, it affirms that without real autonomy and accountability, universities will be neither really responsive nor innovative. In return for being freed from dysfunctional over-regulation and micro-management, universities need to recognise the importance of accountability and more professional management. Also it consider that it's necessary adapt the legal frameworks at national and regional levels and to develop new models for governing their research activities, including a higher degree of autonomy and new ways of ensuring internal and external quality and accountability [11].

##### I. Improving governance

University governance is related to collective control towards common institutional goals. It could be defined as the way as public and private actors seek to solve university organizational problems. Governance raises questions about who decides when on what. Governance is also related to the institutional capacity to change and to change properly and timely to institutional needs. There are five dimensions in governance:

- **State regulation.** This dimension refers to regulation by directives; the government prescribes in detail behaviours under particular circumstances.
- **Stakeholder guidance.** In public higher education systems the government may delegate certain powers to guide to other actors, such as intermediary bodies or representatives of industry in university boards.
- **Academic self-governance** concerns the role of professional communities within higher education systems. This mechanism is institutionalized in collegial decision-making within universities.
- **Managerial self-governance** concerns hierarchies within higher education institutions as organizations. Here the role of institutional leadership in internal goal setting, regulation, and decision-making is at stake.
- **Competition for resources** within and between universities takes place mostly not on “real” markets but on “quasi-markets” where performance evaluations by peers substitute customers [2]-[12].

Universities, in words of Burton Clark, move and respond to its environment from the triangle of forces represented by the state, the market and the academic oligarchy [13]. In the Spanish case the question of the strengths between governance factors combined with the academic culture is especially relevant, because the actual framework of transformation in Spain is essentially a bureaucratic response in bureaucratic organizations [6]. Universities are bureaucratic organizations, or in words of Mintzberg, *professional bureaucracies*. The *professional bureaucracy* relies for coordination on the standardization of skills and its associated design parameter, training and indoctrination. It hires duly trained and indoctrinated specialists (professionals) for the operating core, and then gives them considerable control over their work. Control over his own work means that the professional works relatively independently of his colleagues, but closely with the clients he serves. Most necessary coordination between the operating professionals is handled by the standardization of skills and knowledge - in effect, by what they have learned to expect from their colleagues. *Professional bureaucracy* grows *bureaucratic cultures* which have an *internal focus* and an orientation towards a stable environment and preserving the status quo [14].

##### II. Changing the “academic” culture

In this context there are inevitable difficulties in defining cultural change in universities. An emphasis needs to be put on how people think, work and act as a community, their relationships, perceptions and attitudes. The way a system, routine or procedure is shaped depends to a large extent on both the attitudes and the perceptions of the people and organizational structures involved, as well as other external forces.

Cultures serve two critical functions in organizations: a) to integrate members so that they know how to relate to one another, and b) to help the organization adapt to the external environment. Daft calls internal integration and it ensures that members of an organization develop a collective identity that allows them to work together effectively. The culture

determines how people communicate within the organization, what behaviours are encouraged or discouraged and how power and status is distributed [15]. Organization culture is the key to much that happens (or does not happen) in an organization. Culture pervades all the relationships which underpin the organization and influences all its decisions. Changing culture is never easy. It requires understanding and insight into the organization's culture, which depends on self-awareness at an individual level and at the organizational level [9]-[16].

Johnson has described a *cultural web* (Fig. 1) identifying a number of elements that can be used to describe or influence organizational culture [17]-[18]. The paradigm in the centre is the set of core beliefs which result from the multiplicity of conversations and which maintains the unity of the culture. The petals represent the manifestations of culture which result from the influence of the paradigm:

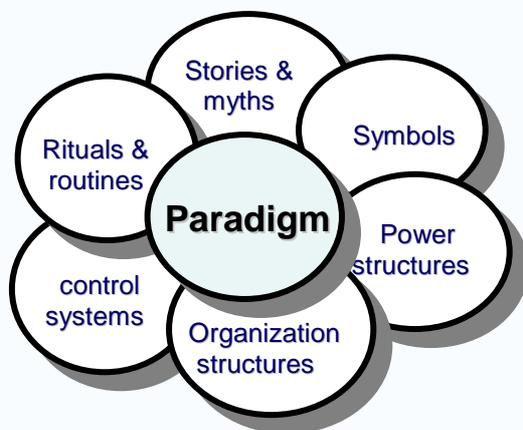


FIGURE 1  
THE MODEL OF "CULTURAL" WEB

- **The Paradigm:** What the organization is about; what it does; its mission; its values. Capra defines paradigm in Kuhnian sense as a constellation of concepts, values, perceptions and practices shared by a community, which forms a particular vision of reality that is the basis of the way a community organizes itself [19].
- **Control Systems:** The processes in place to monitor what is going on. Role cultures would have vast rulebooks. There would be more reliance on individualism in a power culture.
- **Organizational Structures:** Reporting lines, hierarchies, and the way that work flows through the business.
- **Power Structures:** Who makes the decisions, how widely spread is power, and on what is power based?
- **Symbols:** These include organizational logos and designs, but also extend to symbols of power such as parking spaces and executive washrooms.
- **Rituals and Routines:** Management meetings, board reports and so on may become more habitual than necessary.
- **Stories and Myths:** build up about people and events, and convey a message about what is valued within the organization.

There are many different factors that define an organization's culture, including degree of hierarchy within the organization, degree of urgency (that defines how quickly the organization wants or needs to push decision-making and innovation), people/task orientation, assertiveness/courtesy dimensions, functional orientation, institutional "personality" issues and values, among others. Cultural change involves new frames of reference, new ways of acting. Cultural change results from actors acquiring new symbolic resources (cognitive frames/paradigms: concepts, knowledge, skills) in changed structural contexts (organizational contexts, work processes) where these symbolic resources are meaningful, deployable and operational [14].

#### MANAGING STRATEGIC CHANGE AT UNIVERSITIES

Much has been written on how culture impacts organizational strategies, policies, and programs. There has been little written, however, on how to assess one's own culture so that appropriate strategies can be developed and implemented effectively.

Whatever strategy used to assess the organizational culture, the process must be honest, thorough, and must focus not on "what we want to be" as much as "who we are right now." Organizations who decide that "where we are now" is not "where we want to be," may also want to look at moving their organization to embrace a different culture prior to initiating new policies and programs to support the existing culture. Assessing the organizational culture is the first and most important step in developing strategies that support the objectives and goals. Alignment of objectives and plans with organizational culture is a fundamental method of ensuring that the organization will be able to meet and exceed its goals through strategies that support those objectives. Further, by ensuring that the organization is not merely copying "best practices" from other organizations, they are more likely to develop policies and programs that will lead the organization toward its goals. In other words, organizations, to be effective, must copy how leading other institutions or organizations think, not by copying what they do.

Organizational change often starts with strategic change, a change in the institution's mission, strategy, and vision, which can lead to changes in the institution's culture and structure. There are various sources of resistance to change. Some of these are lack of information, personal reasons, and emotional issues. One can overcome this resistance by education, facilitation, and negotiation. In addition, there are several steps for change process. Some of the steps are sense of urgency, coalition and commitment, shared vision, empowerment etc. it is essential to adopt such measures in order to bring effective change in the organization [15].

#### MANAGING STRATEGIC CHANGE IN THE SCHOOL OF DESIGN ENGINEERING

Recent developments in Spanish higher education have been very positive. Universities have become autonomous and are more in tune to regional needs, their internal structure has become flexible, the whole system has become open and

accessible, funds have been poured into the system as never before and market forces have started to play a relevant role. Nevertheless, some perverse effects have begun to emerge. We will focus on some of these negative aspects that deserve deeper consideration: the inadequate adaptation to a mass higher education system, and the negative consequences of the collegial model for governing universities and of regionalization [12]-[20]. The current educational system of the Spanish State is based on an excessively theoretical lecture and with not very good results, given the high amount of abandonment and of academic failure. Furthermore, this is increased in the case of the engineering degrees.

### *I. Bologna: From commitment to reality*

There is no doubt that the deep process of reflection and intellectual mobilization is worth by itself and, at least at the long run, will be positive for the European Higher Education.

The numbers are clear: 66% of all Higher Education Institutions leaders want rapid progress towards the EHEA, 85% of European universities have started curricula reform, 90% have or are planning a two-cycle structure, 75% use a credit system, 70% say that student mobility has increased but... It is yet unclear whether the expected results will be reached. The current educational system of the Spanish State is based on an excessively theoretical lecture and with not very good results, given the high amount of abandonment and of academic failure. Furthermore, this is increased in the case of the technical degrees. Despite these problems a great majority of Spanish universities are still moving between the tradition and the transformation options, being the main obstacles:

- discrepancy between “EHEA rhetoric” and institutional reality
- lack of clarity in the Spanish legal framework
- scarce of clarity and consensus
- differences in socio-economic circumstances and institutional support/commitment
- lack of awareness (students, academics and administrators often unaware of key Bologna reforms)
- weak human factor (absence of teachers and students participation)
- insufficient resources (time/money for real implementation)
- poor participation of the staff
- no background in governance and management experiences at universities

Although the systemic and cultural implications of Bologna reforms are only now beginning to become apparent, it is very important to consider these barriers to improve a real transformation.

### *II. Managing the cultural change in a complex environment*

The School of Design Engineering (ETSID) is a good example of dynamic institution which tries to be at the leading edge of educational change and improvement of the European convergence. Within the general plans implemented at the Polytechnic University of Valencia (UPV) since the year 2000 to the present, the School of

Design Engineering has been participated in several plans and actions with the aim of strengthening a gradual process of adaptation of engineering degrees to EHEA [21]-[22]-[23].

On other hand, The ETSID has been involved in the last decades, and purposefully, in a deep process of global quality assessment and improvement, being the three major fundamental priorities in the centre’s policy-making and training scheme:

- a) **educational innovation**, to encourage the participation of the teaching staff in educational innovation actions that incorporate the use of active methodologies (new laboratory experiences, project based methodology, new activities and assessment instruments, etc.).
- b) **close relationship with the socioeconomic and industrial environment**. The relationship with the industrial environment and companies is very important for the ETSID, since permits us to know the opinion that have the companies of our graduate and the training characteristics that they need.
- c) **international relations**. Through different international programs of educational cooperation, ETSID has collaboration, in different levels, with an important number of Institutions within the European Union and other countries. This has permitted to many teachers and students of the ETSID to have direct contact with other models and teaching methodologies, with the consequent benefit that there has reported to the School [21].

In spite of the many obstacles encountered and of the opposing forces that could make the implementation difficult, all the staff works to build up a system that is relevant to the specific context of the industrial engineer, advancing in the European harmonization. The actions for promoting the academic culture change are based on the following key aspects:

- Improving the full faculty participation from "a bureaucratic" tendency towards a human factor conception
- Achieving the integration of the physical, academic, and human resources.
- Ensuring alignment and coordination of all planning activities and processes.
- Focusing on collaborative planning structures throughout the organization and determine alignment and linkages between them.
- Improving a culture of decision-making more decentralized and focused on the academic planning goals.
- Optimizing the feedback of data, research and trends in co-operation with other Spanish and European institutions.

The Unfreezing-Changing-Refreezing model is the strategy for a proactive approach to the environment, with three stages [24]:

- **Unfreezing**. Reducing or eliminating resistance to change by resolving fear and feelings about letting go of the “old.”

- **Changing** (or moving on to a new level). Moving on to other things through active participation in the change process.
- **Refreezing**. Encouraging recognition of successful change and rewarding people for implementing the change.

The first stages until the process of “unfreezing” include the following aspects: capitalizing the previous experience in educative innovation, aligning the mission, vision and values of the institution with the involved agents, developing of self-regulation, evaluation and quality indicators, enabling autonomy and flexibility. In the Table I it shows the communication strategies applied [23]:

TABLE I  
COMMUNICATION STRATEGIES FOR THE CULTURE ACADEMIC CHANGE

Strategies	
I	<b>Human factor:</b> key issue for the exit of the European convergence process. All members of faculty can contribute: directives, teachers, students, administrative ....
II	The <b>importance of why and what for</b> of changing, reflecting about the need to remove the actual teaching and learning culture.
III	<b>The change is an opportunity.</b> To mobilize us and to reach a greater efficiency and quality in the formation.
IV	Slogan to share: <b>“One step in advance towards the EHEA”</b> . To share a joint vision of the goals to reach and to work in the short and long term.

We are working managing the change for improving the *internal integration* [15]. Internal integration, as Daft says, ensures that members of an organization develop a collective identity that allows them to work together effectively. After several years of experience in the Projects of Adaptation to the EHEA (since 1999 to the present), it was observed an increase of the number of activities different from the classic lectures: 60% of the hours of teaching are dedicated to activities of practical type (seminaries, teamwork, laboratory, etc.). Also some positive changes in the assessment methods are observed, 42.6% of the subjects are making continuous and formative assessment. However, 15.1% of the subjects continue focusing the assessment in the accomplishment of an only final examination. All these changes are implying a progressive adaptation of the students towards more independent forms of work, and towards a greater implication in group tasks. At present we are working in the curricular development of the new degrees in engineering education proposals, according the ministerial directives and the Dublin and Quality Assurance descriptors.

### CONCLUSIONS

The old and traditional Spanish university system is not likely to be able to face the challenges and requirements of the European Higher Education Area framework. A radical change in governance and academic culture is necessary towards a more competitive, flexible and attractive Higher Education system. This change is a multifaceted endeavour including, among others, structural, legal, curricular,

methodological and pedagogical issues. It certainly involves a change in the mentality and roles of students, teaching staff and administrators alike. Over the last years we have built a more flexible organisation by redesigning our jobs and teams to anticipate and respond to the changing needs of our students and clients, the changing nature of information resources and our new strategic context. We are preparing for the next years, assisting staff to make the transition to the new roles for improving quality and excellence in our educative model. We will continue to deliver on our strategic tasks accompanying the change, among to evaluate our performance and to focus on service innovation and improvement.

### REFERENCES

- [1] De Woot, P. “Managing Strategic Change in the University”. *International Seminar on Strategic Management and Quality of Universities*. Universitat Politècnica de Catalunya. Barcelona, 19-21 January 1998. pp. 39-55.
- [2] Ginés Mora, J. “Changes in the governance of European universities”. *CHES Seminars*. London, 21<sup>st</sup>. November 2006.
- [3] Davies, J., “Cultural Change in Universities in the Context of Strategic and Quality Initiatives”. 2000.
- [4] Commission of the European Communities. “Mobilising the brainpower of Europe: enabling universities to make their full contribution to the Lisbon Strategy”. Brussels, 20.4.2005. COM (2005) 152 final.
- [5] Commission of the European Communities. “Recommendation of the European Parliament and of the Council on the establishment of the European Qualifications Framework for lifelong learning”. Brussels, 5.9.2006. COM (2006) 479 final
- [6] Ginés Mora, J. & Vidal, J., “Adequate Policies and Unintended Effects in Spanish Higher Education”, *Tertiary Education and Management*, Vol. 6, No. 4, 2000, pp. 247-258.
- [7] Teichler, U. & Schonburg, H. (Eds.). “Comparative Perspectives on Higher Education and Graduate Employment and Work – Experiences from Twelve Countries”. 2004. Kluwer Pub..
- [8] Reichert, S. & Tauch, C. “Trends IV: European Universities implementing Bologna”. 2005. European University Association (EUA).
- [9] Schein, E. H. “Organizational Culture and Leadership” (2nd Ed), San Francisco: Jossey-Bass Publishers, 1992.
- [10] Chaffee, E.E. & Tierney, W.G. “Collegiate Culture and Leadership Strategies”. New York: Macmillan, 1988.
- [11] Commission of the European Communities. “Delivering on the modernization agenda for universities: education, research and innovation” Brussels, 10.5.2006. COM (2006) 208 final.
- [12] Ginés Mora, J. “Changes in the governance of European universities”. *CHES Seminars*. London, 21<sup>st</sup>. November 2006.
- [13] Clark, B. “The Higher Education System. Academic Organization in Cross-National Perspective”. 1983. University of California Press.
- [14] Mintzberg, H., “The Structuring of Organizations”. 1979. New Jersey: Prentice Hall.
- [15] Daft, R. L. “Organization Theory and design”. 1998. 6th Edition South-Western College Publishing. Cincinnati, Ohio
- [16] Astin, A.W. & Astin, H.S. “Leadership Reconsidered: Engaging Higher Education in Social Change”. Battle Creek, MI: W.K. Kellogg Foundation, 2000.
- [17] Johnson, G. “Rethinking Incrementalism”. *Strategic Management Journal*, Vol. 9, 1988, pp. 75-91.

- [18] Johnson, G. "Managing strategic change - strategy, culture and action", *Long Range Planning*, Vol. 25, pp. 28-36.
- [19] Capra, F. "The Web of Life: A New Synthesis of Mind and Matter". 1997. London: Flamingo.
- [20] Montesinos, P., López, M. & Ginés Mora, J., "The challenge of University management: University 3<sup>rd</sup> mission and continuing Engineering Education opportunities", 10<sup>th</sup> IACEE World Conference on Continuing Engineering Education (WCCEE), April 19-21 2006, Viena, Austria.
- [21] Seiz-Ortiz, R., Sánchez-Ruiz, L. M. & Ballester-Sarrias, E. "Training the New Engineer in the Europe of Knowledge and convergence. The case of the School of Design Engineering in Valencia". *Proceedings of International Conference on Engineering Education*. University of Florida, October 17-21, 2004.
- [22] Ballester, E., Gimeno, A., Hurtado, E & Sánchez-Ruiz, L. M.. "Implementing the European Higher Education Area at the Universidad Politécnica de Valencia (Spain)". En Moscinski, J. y Maciazek, M. (Eds.). *Proceedings of the International Conference on Engineering Education ICEE 2005*. Vol.1, 2005, pp. 130-134.
- [23] Edwards; M., Donderis-Quiles, V., Sánchez-Ruiz, L. & Ballester-Sarrias, E. "Approach to the European Higher Education Area in the School of Engineering Design". *International Conference on Engineering Education (ICEE 2006)*, 23-28 July 2006. San Juan, Puerto Rico.
- [24] Schein, E "Kurt Lewin's Change Theory in the Field and in the Classroom: Notes Toward a Model of Managed Learning". 1995, *Systems Practice*, <http://www.solonline.org/res/wp/10006.html>